BROADCASTING

3B elettronica

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BROADCASTING CATALOGUE

3BDT MM Series

Transmitters
PAL + DVB

AUTOMATIC DIGITAL/ANALOG | TRANSMITTER | RE-MULTIPLEXER FUNCTION | DECODER BUILT-IN

ASI > MOD > RF

DVB-T DVB-H | PAL

From 2,5W rms up to 18KW rms, from 10W ps up to 60KW ps
Force Air Cooled or Liquid Cooling System

3BDT MM Series

Dual Mode Transmitter with Re-Multiplexer Function and Decoder built-in

3BDT 200 MM

Dual Mode Transmitter with Re-Multiplexer Function and Decoder Built-in 10W ps/2,5W rms

> 3BDT 200 MM

Main Features

- UHF/VHF(III) and MMDS fully agile Dual Mode Transmitter.
- Integrated MPEG2 Decoder.
- Integrated GPS Professional Receiver.
- Integrated SNMP management with events store.
- Integrated GBE interface.
- Output Power remotely adjustable with high dynamics, in step of 0.1 dB.
- Digital linear precorrection.
- Digital non linear precorrection with automatic curves loading for each standard, channel and power levels.
- Wide Range Power Supply 90-264 V AC in fuse-free configuration (SW Standby Switch).
- 12 (with power limitations), 24, 48 V DC Optional.
- Typical MER: > 36 dB at all power levels and in all channels.
- Quick-acting protection circuits against overpower and direct/reflected power and “Soft-start” Circuit.
- Protection against reflected power with automatic fold-back.
- Multi-Mode Operation w/software switch.
- Compact Design: 19” x 1 unit, depth 400 mm
- Transport stream de-multiplexing with extraction of a single program.
- Re-multiplexing function with drop-out of services or single components.

La nuova serie "MAGNUM" è formata da una nuova generazione di trasmettitori digitali televisivi ad altissima integrazione per reti SFN e MFN.
Un innovativo firmware permette, grazie ad un processore interno a 32 bit, l'elaborazione del segnale ad errore zero.
Questi trasmettitori sono dotati di adattatore SFN integrato e dell'avanzatissima tecnologia SWDT (Software Defined Transmitters) che permette di caricare sullo stesso hardware diversi sistemi di modulazione, digitali e analogici (DVB-T/H, PAL, ASTC, NTSC, QPSK, QAM, FLO, SECAM, ecc...) e di selezionare la modalità di trasmissione mediante una semplice commutazione, con la semplice pressione di un tasto posto sul pannello frontale, in remoto, utilizzando un contatto pulito, tramite comandi SNMP, via TCP/IP utilizzando l'interfaccia web. Sono disponibili interfacce per il controllo remoto degli apparati mediante protocolli seriali o porte TCP/IP.
Il server SMNP integrato consente di effettuare ogni tipo di telecontrollo automatizzato.

The new "MAGNUM" series is the latest generation of high-integration digital television transmitters for SFN and MNF networks.
An innovative firmware allows zero error signal processing thanks to an internal 32 bit architecture.
These transmitters feature a built-in SFN adapter and very advanced SWDT (Software Defined Transmitters) technology which allows implementing different modulation patterns - either digital or analog - (DVB-T/H, PAL, ASTC, NTSC, QPSK, QAM, FLO, SECAM, etc...) in the same hardware.
Moreover, the SWDT technology allows selecting transmission modes in variuos ways: locally, by pressing a button on the front panel; remotely, using a clean contact; via SNMP commands, via TCP/IP, using the Web graphics interface; or even via a dedicated command inserted into the transport stream.
Moreover, the built-in SNMP server allows performing all types of automated remote control.

MODEL-SPECIFIC DATA

Model	Output band	Digital output power (rms) without filter DVB-T/H	Nominal analog output power (p.s.) with dual mode option
3BDT 200UB MM	UHF	2,5 W class A	10 W
3BDT 200TB MM	VHF (III)	2,5 W class A	10 W

Specifications and characteristics are subject to change without notice.

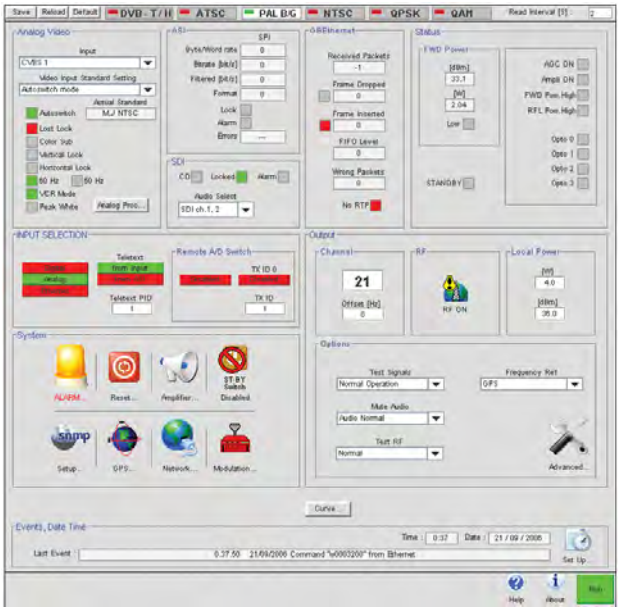
GENERAL

	3BDT 200UB MM
Working Class A	
Cooling	Forced air
Local control and monitoring	Extensive front panel control
Remote control and monitoring	Local terminal on RS-232 Web based Java interface Telnet access via Ethernet SNMP
Operating temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	90-260 V AC
Dimensions	1 RU (19” rack), 400 mm

Front View

Front Panel Connectors

1. GPS IN	Input signal from GPS Antenna. TNC-F Connector (or N).
2. Analog Audio L/Mono	Audio Input.
3. Analog Audio R	Audio Input.
4. Analog Video / R	Analog Video Input or R Input
5. Analog Video / G	Analog Video Input or G Input
6. Analog Video / B	Analog Video Input or B Input
7. ASI 1/SMPTE 310/SDI	Digital Input
8. ASI 2/SMPTE 310/SDI	Digital Input
9. TCP/IP + GBE	Integrated TCP/IP Giga Bit Ethernet interface (also suitable for MPEG over IP feeding).
10. Audio Output	Mini XLR.
11. Video Output	BNC connector.
12. LCD Display	Multimeter 4 x 20.
13. Controls	Navigation and operation push-buttons



DVB-T/H MODULATOR

Input	2 x BNC 75 Ω: 2 x ASI or 1 x ASI + 1 x SDI for dual mode option
Input signal	MPEG2 transport stream
Input data rate	3.73 to 31.67 Mbits/s (according to selected modulation)
Modulation	QPSK, 16QAM, 64QAM
Bandwidth	5, 6, 7 or 8 MHz
Transport packet length	188 bytes - 204 bytes (SPI)
IFFT	2k, 4k and 8k
Guard interval	1/4, 1/8, 1/16, 1/32
Code rates	1/2, 2/3, 3/4, 5/6, 7/8
Precision offset	Integrated (Exact 1 Hz steps @ all BW)
Frequency precision	1 ppm or internal GPS locked
Frequency reference input	10 MHz, BNC 50 Ω
Time reference input	1 PPS, BNC 50 Ω
SFN function	Integrated
Network delay compensation	Manual or automatic
Hierarchical mode	All modes supported
BER decoding, typical	Zero over five hours period before RS
Eye aperture on vector constellation w/o I.F. filter	> 32 dB
Virtual dynamic store function to prevent data overflow	Integrated
Spectrum inversion	Supported
Test functions	Carrier packet removal, CW, PRBS
PCR restamping	Included
Del. Null Packet mode	Included

ANALOG MODULATOR

VIDEO PARAMETERS	
Number of inputs	3 x RGB, 3 x Composite Video, 1 x SDI (Audio Embedded)
Input impedance	75 Ω
Input level	1 V p.p. ±3 dB
White / Sync level limiter	95%
2T K factor	< 1.5%
Amplitude / frequency response	±0.5 dB (throughout the vision band)
Differential gain	< 3%
Differential phase	< 3°
Tilt (50 Hz)	< 2%
Tilt (15 kHz)	< 2%
Group delay	±35 ns (throughout the vision band)
Sync pulse compression	< 3%
S/N ratio (weighted)	>= 60 dB
ICPM	< 3°
Luminance non linearity	< 4%
Field time bar tilt	< 2%
Line time bar tilt	< 2%
AUDIO PARAMETERS	
Number of inputs	2 x Mini XLR (stereo, dual sound, mono)
Input level	0 dBm ±6 dB
Carrier level	-13, -20 dB (adjustable)
Modulation capability	±120 kHz
Frequency response (30 Hz to 15 kHz)	±0.4 dB
T.H.D. (30 Hz to 15 kHz)	< 0.4%
Pre-emphasis	50 µs or 75 µs or flat
S/N ratio (un-weighted)	> 60 dB
Stereo / Dual sound (IRT)	Included
Stereo separation (equivalent)	Better than -55 dB (typ.)
GENERAL	
Colour system	B, D, G, H, I, K, M, N
Available standards	PAL, NTSC
Output connector	N female
Output impedance	50 Ω
Frequency precision	1 ppm or internal GPS locked
External reference frequency input	1 PPS or 10 MHz
Offset steps (optional)	1 Hz
I.M.D. at rated output power	better than -60 dBc
Harmonics (with output filter)	-60 dB or better
Spurious emissions (with output filter)	-60 dB or better

3BDT 500 MM

Dual Mode Transmitter with Re-Multiplexer Function and Decoder Built-in 50W ps/10W rms

> 3BDT 200 MM

Main Features

- UHF/VHF(III) and MMDS fully agile Dual Mode Transmitter.
- Integrated MPEG2 Decoder.
- Integrated GPS Professional Receiver.
- Integrated SNMP management with events store.
- Integrated GBE interface.
- Output Power remotely adjustable with high dynamics, in step of 0.1 dB.
- Digital linear precorrection.
- Digital non linear precorrection with automatic curves loading for each standard, channel and power levels.
- Wide Range Power Supply 90-264 V AC in fuse-free configuration (SW Standby Switch).
- 12 (with power limitations), 24, 48 V DC Optional.
- Typical MER: > 36 dB at all power levels and in all channels.
- Quick-acting protection circuits against overpower and direct/reflected power and “Soft-start” Circuit.
- Protection against reflected power with automatic fold-back.
- Multi-Mode Operation w/software switch.
- Compact Design: 19” x 1 unit, depth 400 mm
- Transport stream de-multiplexing with extraction of a single program.
- Re-multiplexing function with drop-out of services or single components.

La nuova serie "MAGNUM" è formata da una nuova generazione di trasmettitori digitali televisivi ad altissima integrazione per reti SFN e MFN.
Un innovativo firmware permette, grazie ad un processore interno a 32 bit, l'elaborazione del segnale ad errore zero.
Questi trasmettitori sono dotati di adattatore SFN integrato e dell'avanzatissima tecnologia SWDT (Software Defined Transmitters) che permette di caricare sullo stesso hardware diversi sistemi di modulazione, digitali e analogici (DVB-T/H, PAL, ASTC, NTSC, QPSK, QAM, FLO, SECAM, ecc...) e di selezionare la modalità di trasmissione mediante una semplice commutazione, con la semplice pressione di un tasto posto sul pannello frontale, in remoto, utilizzando un contatto pulito, tramite comandi SNMP, via TCP/IP utilizzando l'interfaccia web. Sono disponibili interfacce per il controllo remoto degli apparati mediante protocolli seriali o porte TCP/IP.
Il server SMNP integrato consente di effettuare ogni tipo di telecontrollo automatizzato.

The new "MAGNUM" series is the latest generation of high-integration digital television transmitters for SFN and MNF networks.
An innovative firmware allows zero error signal processing thanks to an internal 32 bit architecture.
These transmitters feature a built-in SFN adapter and very advanced SWDT (Software Defined Transmitters) technology which allows implementing different modulation patterns - either digital or analog - (DVB-T/H, PAL, ASTC, NTSC, QPSK, QAM, FLO, SECAM, etc...) in the same hardware.
Moreover, the SWDT technology allows selecting transmission modes in variuos ways: locally, by pressing a button on the front panel; remotely, using a clean contact; via SNMP commands, via TCP/IP, using the Web graphics interface; or even via a dedicated command inserted into the transport stream.
Moreover, the built-in SNMP server allows performing all types of automated remote control.

MODEL-SPECIFIC DATA

Model	Output band	Digital output power (rms) without filter DVB-T/H	Nominal analog output power (p.s.) with dual mode option
3BDT 500UB MM	UHF	10 W class A	50 W
3BDT 500TB MM	VHF (III)	10 W class A	50 W

Specifications and characteristics are subject to change without notice.

GENERAL

	3BDT 500UB MM
Working Class AB	
Cooling	Forced air
Local control and monitoring	Extensive front panel control
Remote control and monitoring	Local terminal on RS-232 Web based Java interface Telnet access via Ethernet SNMP
Operating temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	90-260 V AC
Dimensions	1 RU (19” rack), 400 mm

Front View

Front Panel Connectors

1. GPS IN	Input signal from GPS Antenna. TNC-F Connector (or N).
2. Analog Audio L/Mono	Audio Input.
3. Analog Audio R	Audio Input.
4. Analog Video / R	Analog Video Input or R Input
5. Analog Video / G	Analog Video Input or G Input
6. Analog Video / B	Analog Video Input or B Input
7. ASI 1/SMPTE 310/SDI	Digital Input
8. ASI 2/SMPTE 310/SDI	Digital Input
9. TCP/IP + GBE	Integrated TCP/IP Giga Bit Ethernet interface (also suitable for MPEG over IP feeding).
10. Audio Output	Mini XLR.
11. Video Output	BNC connector.
12. LCD Display	Multimeter 4 x 20.
13. Controls	Navigation and operation push-buttons

DVB-T/H MODULATOR

Input	2 x BNC 75 Ω: 2 x ASI or 1 x ASI + 1 x SDI for dual mode option
Input signal	MPEG2 transport stream
Input data rate	3.73 to 31.67 Mbits/s (according to selected modulation)
Modulation	QPSK, 16QAM, 64QAM
Bandwidth	5, 6, 7 or 8 MHz
Transport packet length	188 bytes - 204 bytes (SPI)
IFFT	2k, 4k and 8k
Guard interval	1/4, 1/8, 1/16, 1/32
Code rates	1/2, 2/3, 3/4, 5/6, 7/8
Precision offset	Integrated (Exact 1 Hz steps @ all BW)
Frequency precision	1 ppm or internal GPS locked
Frequency reference input	10 MHz, BNC 50 Ω
Time reference input	1 PPS, BNC 50 Ω
SFN function	Integrated
Network delay compensation	Manual or automatic
Hierarchical mode	All modes supported
BER decoding, typical	Zero over five hours period before RS
Eye aperture on vector constellation w/o I.F. filter	> 32 dB
Virtual dynamic store function to prevent data overflow	Integrated
Spectrum inversion	Supported
Test functions	Carrier packet removal, CW, PRBS
PCR restamping	Included
Del. Null Packet mode	Included

ANALOG MODULATOR

VIDEO PARAMETERS	
Number of inputs	3 x RGB, 3 x Composite Video, 1 x SDI (Audio Embedded)
Input impedance	75 Ω
Input level	1 V p.p. ±3 dB
White / Sync level limiter	95%
2T K factor	< 1.5%
Amplitude / frequency response	±0.5 dB (throughout the vision band)
Differential gain	< 3%
Differential phase	< 3°
Tilt (50 Hz)	< 2%
Tilt (15 kHz)	< 2%
Group delay	±35 ns (throughout the vision band)
Sync pulse compression	< 3%
S/N ratio (weighted)	>= 60 dB
ICPM	< 3°
Luminance non linearity	< 4%
Field time bar tilt	< 2%
Line time bar tilt	< 2%
AUDIO PARAMETERS	
Number of inputs	2 x Mini XLR (stereo, dual sound, mono)
Input level	0 dBm ±6 dB
Carrier level	-13, -20 dB (adjustable)
Modulation capability	±120 kHz
Frequency response (30 Hz to 15 kHz)	±0.4 dB
T.H.D. (30 Hz to 15 kHz)	< 0.4%
Pre-emphasis	50 µs or 75 µs or flat
S/N ratio (un-weighted)	> 60 dB
Stereo / Dual sound (IRT)	Included
Stereo separation (equivalent)	Better than -55 dB (typ.)
GENERAL	
Colour system	B, D, G, H, I, K, M, N
Available standards	PAL, NTSC
Output connector	N female
Output impedance	50 Ω
Frequency precision	1 ppm or internal GPS locked
External reference frequency input	1 PPS or 10 MHz
Offset steps (optional)	1 Hz
I.M.D. at rated output power	better than -60 dBc
Harmonics (with output filter)	-60 dB or better
Spurious emissions (with output filter)	-60 dB or better

3BDT 201 MM

Dual Mode Transmitter with Re-Multiplexer Function and Decoder Built-in 200W ps/100W rms

> 3BDT 201 MM

Main Features

- UHF/VHF(III) and MMDS fully agile Dual Mode Transmitter.
- Integrated MPEG2 Decoder.
- Integrated GPS Professional Receiver.
- Integrated SNMP management with events store.
- Integrated GBE interface.
- Output Power remotely adjustable with high dynamics, in step of 0.1 dB.
- Digital linear precorrection.
- Digital non linear precorrection with automatic curves loading for each standard, channel and power levels.
- Wide Range Power Supply 90-264 V AC in fuse-free configuration (SW Standby Switch).
- 12 (with power limitations), 24, 48 V DC Optional.
- Typical MER: > 36 dB at all power levels and in all channels.
- Quick-acting protection circuits against overpower and direct/reflected power and “Soft-start” Circuit.
- Protection against reflected power with automatic fold-back.
- Multi-Mode Operation w/software switch.
- Transport stream de-multiplexing with extraction of a single program.
- Re-multiplexing function with drop-out of services or single components.

La nuova serie "MAGNUM" è formata da una nuova generazione di trasmettitori digitali televisivi ad altissima integrazione per reti SFN e MFN. Un innovativo firmware permette, grazie ad un processore interno a 32 bit, l'elaborazione del segnale ad errore zero.
Questi trasmettitori sono dotati di adattatore SFN integrato e dell'avanzatissima tecnologia SWDT (Software Defined Transmitters) che permette di caricare sullo stesso hardware diversi sistemi di modulazione, digitali e analogici (DVB-T/H, PAL, ASTC, NTSC, QPSK, QAM, FLO, SECAM, ecc...) e di selezionare la modalità di trasmissione mediante una semplice commutazione, con la semplice pressione di un tasto posto sul pannello frontale, in remoto, utilizzando un contatto pulito, tramite comandi SNMP, via TCP/IP utilizzando l'interfaccia web. Sono disponibili interfacce per il controllo remoto degli apparati mediante protocolli seriali o porte TCP/IP.
Il server SMNP integrato consente di effettuare ogni tipo di telecontrollo automatizzato.

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Moreover, the SWDT technology allows selecting transmission modes in variuos ways: locally, by pressing a button on the front panel; remotely, using a clean contact; via SNMP commands, via TCP/IP, using the Web graphics interface; or even via a dedicated command inserted into the transport stream.
Moreover, the built-in SNMP server allows performing all types of automated remote control.

MODEL-SPECIFIC DATA

Model	Output band	Digital output power (rms) without filter	Nominal analog output power (p.s.) with dual mode option
		DVB-T/H	
3BDT 201UB MM	UHF	100 W	200 W
3BDT 201TB MM	VHF (III)	100 W	200 W

Specifications and characteristics are subject to change without notice.

GENERAL

Working Class AB	3BDT 201 MM
Cooling	Forced air
Local control and monitoring	Extensive front panel control
Remote control and monitoring	Local terminal on RS-232 Web based Java interface Telnet access via Ethernet SNMP
Operating temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	90-260 V AC
Dimensions	2 RU (19” rack), 400 mm

3BDT 501 MM

Dual Mode Transmitter with Re-Multiplexer Function and Decoder Built-in 750W ps/200W rms

> 3BDT 501 MM

Main Features

- UHF/VHF(III) and MMDS fully agile Dual Mode Transmitter.
- Integrated MPEG2 Decoder.
- Integrated GPS Professional Receiver.
- Integrated SNMP management with events store.
- Integrated GBE interface.
- Output Power remotely adjustable with high dynamics, in step of 0.1 dB.
- Digital linear precorrection.
- Digital non linear precorrection with automatic curves loading for each standard, channel and power levels.
- Wide Range Power Supply 90-264 V AC in fuse-free configuration (SW Standby Switch).
- 12 (with power limitations), 24, 48 V DC Optional.
- Typical MER: > 36 dB at all power levels and in all channels.
- Quick-acting protection circuits against overpower and direct/reflected power and “Soft-start” Circuit.
- Protection against reflected power with automatic fold-back.
- Multi-Mode Operation w/software switch.
- Transport stream de-multiplexing with extraction of a single program.
- Re-multiplexing function with drop-out of services or single components.

La nuova serie "MAGNUM" è formata da una nuova generazione di trasmettitori digitali televisivi ad altissima integrazione per reti SFN e MFN. Un innovativo firmware permette, grazie ad un processore interno a 32 bit, l'elaborazione del segnale ad errore zero.
Questi trasmettitori sono dotati di adattatore SFN integrato e dell'avanzatissima tecnologia SWDT (Software Defined Transmitters) che permette di caricare sullo stesso hardware diversi sistemi di modulazione, digitali e analogici (DVB-T/H, PAL, ASTC, NTSC, QPSK, QAM, FLO, SECAM, ecc...) e di selezionare la modalità di trasmissione mediante una semplice commutazione, con la semplice pressione di un tasto posto sul pannello frontale, in remoto, utilizzando un contatto pulito, tramite comandi SNMP, via TCP/IP utilizzando l'interfaccia web. Sono disponibili interfacce per il controllo remoto degli apparati mediante protocolli seriali o porte TCP/IP.
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Moreover, the built-in SNMP server allows performing all types of automated remote control.

MODEL-SPECIFIC DATA

Model	Output band	Digital output power (rms) without filter DVB-T/H	Nominal analog output power (p.s.) with dual mode option
3BDT 501UB MM	UHF	200 W	750 W
3BDT 501TB MM	VHF (III)	200 W	750 W

Specifications and characteristics are subject to change without notice.

GENERAL

	3BDT 501 MM
Working Class AB	
Cooling	Forced air
Local control and monitoring	Extensive front panel control
Remote control and monitoring	Local terminal on RS-232 Web based Java interface Telnet access via Ethernet SNMP
Operating temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	90-260 V AC
Dimensions	15 RU (19” rack), 400 mm

3BDT 102 MM

Dual Mode Transmitter with Re-Multiplexer Function and Decoder Built-in 1500W ps/400W rms

> 3BDT 102 MM

Main Features

- UHF/VHF(III) and MMDS fully agile Dual Mode Transmitter.
- Integrated MPEG2 Decoder.
- Integrated GPS Professional Receiver.
- Integrated SNMP management with events store.
- Integrated GBE interface.
- Output Power remotely adjustable with high dynamics, in step of 0.1 dB.
- Digital linear precorrection.
- Digital non linear precorrection with automatic curves loading for each standard, channel and power levels.
- Wide Range Power Supply 90-264 V AC in fuse-free configuration (SW Standby Switch).
- 12 (with power limitations), 24, 48 V DC Optional.
- Typical MER: > 36 dB at all power levels and in all channels.
- Quick-acting protection circuits against overpower and direct/reflected power and “Soft-start” Circuit.
- Protection against reflected power with automatic fold-back.
- Multi-Mode Operation w/software switch.
- Transport stream de-multiplexing with extraction of a single program.
- Re-multiplexing function with drop-out of services or single components.

La nuova serie "MAGNUM" è formata da una nuova generazione di trasmettitori digitali televisivi ad altissima integrazione per reti SFN e MFN. Un innovativo firmware permette, grazie ad un processore interno a 32 bit, l'elaborazione del segnale ad errore zero.
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Il server SMNP integrato consente di effettuare ogni tipo di telecontrollo automatizzato.

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Moreover, the SWDT technology allows selecting transmission modes in variuos ways: locally, by pressing a button on the front panel; remotely, using a clean contact; via SNMP commands, via TCP/IP, using the Web graphics interface; or even via a dedicated command inserted into the transport stream.
Moreover, the built-in SNMP server allows performing all types of automated remote control.

MODEL-SPECIFIC DATA

Model	Output band	Output connector	Working class	Dimensions	Digital output power (rms) without filter (Shoulders -36 dB @ F_0 ± 4.3 MHz)	Nominal analog output power (p.s.)
					DVB-T/H	PAL
3BDT 202UB MM	UHF	7/8	AB	1+5 RU	750 W	3000 W
3BDT 202UM MM	UHF	7/8	AB	30 RU	750 W	3000 W
3BDT 202TB MM	VHF (III)	7/8	AB	1+5 RU	750 W	3000 W
3BDT 202TM MM	VHF (III)	7/8	AB	30RU	750 W	3000 W

BANDL and MMDS also available

Specifications and characteristics are subject to change without notice.

GENERAL

Working Class AB	3BDT 202 MM
Cooling	Forced air
Local control and monitoring	Extensive front panel control
Remote control and monitoring	Local terminal on RS-232 Web based Java interface Telnet access via Ethernet SNMP
Operating temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	90-260 V AC

3BDT 202 MM

Dual Mode Transmitter with Re-Multiplexer Function and Decoder Built-in 3000W ps/750W rms

> 3BDT 202 MM

Main Features

- UHF/VHF(III) and MMDS fully agile Dual Mode Transmitter.
- Integrated MPEG2 Decoder.
- Integrated GPS Professional Receiver.
- Integrated SNMP management with events store.
- Integrated GBE interface.
- Output Power remotely adjustable with high dynamics, in step of 0.1 dB.
- Digital linear precorrection.
- Digital non linear precorrection with automatic curves loading for each standard, channel and power levels.
- Wide Range Power Supply 90-264 V AC in fuse-free configuration (SW Standby Switch).
- 12 (with power limitations), 24, 48 V DC Optional.
- Typical MER: > 36 dB at all power levels and in all channels.
- Quick-acting protection circuits against overpower and direct/reflected power and “Soft-start” Circuit.
- Protection against reflected power with automatic fold-back.
- Multi-Mode Operation w/software switch.
- Transport stream de-multiplexing with extraction of a single program.
- Re-multiplexing function with drop-out of services or single components.

La nuova serie "MAGNUM" è formata da una nuova generazione di trasmettitori digitali televisivi ad altissima integrazione per reti SFN e MFN.
Un innovativo firmware permette, grazie ad un processore interno a 32 bit, l'elaborazione del segnale ad errore zero.
Questi trasmettitori sono dotati di adattatore SFN integrato e dell'avanzatissima tecnologia SWDT (Software Defined Transmitters) che permette di caricare sullo stesso hardware diversi sistemi di modulazione, digitali e analogici (DVB-T/H, PAL, ASTC, NTSC, QPSK, QAM, FLO, SECAM, ecc...) e di selezionare la modalità di trasmissione mediante una semplice commutazione, con la semplice pressione di un tasto posto sul pannello frontale, in remoto, utilizzando un contatto pulito, tramite comandi SNMP, via TCP/IP utilizzando l'interfaccia web. Sono disponibili interfacce per il controllo remoto degli apparati mediante protocolli seriali o porte TCP/IP.
Il server SMNP integrato consente di effettuare ogni tipo di telecontrollo automatizzato.

The new "MAGNUM" series is the latest generation of high-integration digital television transmitters for SFN and MNF networks.
An innovative firmware allows zero error signal processing thanks to an internal 32 bit architecture.
These transmitters feature a built-in SFN adapter and very advanced SWDT (Software Defined Transmitters) technology which allows implementing different modulation patterns - either digital or analog - (DVB-T/H, PAL, ASTC, NTSC, QPSK, QAM, FLO, SECAM, etc...) in the same hardware.
Moreover, the SWDT technology allows selecting transmission modes in variuos ways: locally, by pressing a button on the front panel; remotely, using a clean contact; via SNMP commands, via TCP/IP, using the Web graphics interface; or even via a dedicated command inserted into the transport stream.
Moreover, the built-in SNMP server allows performing all types of automated remote control.

MODEL-SPECIFIC DATA

Model	Output band	Number of amplifiers	Working class	Dimensions	Digital output power (rms) without filter (Shoulders -36 dB @ F_0 ± 4.3 MHz) DVB-T/H	Nominal analog output power (p.s.) PAL
3BDT 502UB MM	UHF	2	AB	30 RU	1500 W	6000 W
3BDT 502UM MM	UHF	4	AB	40 RU	1500 W	6000 W
3BDT 502UB-W MM	UHF	2	AB	40 RU	1500 W	6000 W
3BDT 502TB MM	VHF (III)	2	AB	30 RU	1500 W	6000 W
3BDT 502TM MM	VHF (III)	4	AB	40 RU	1500 W	6000 W
3BDT 502TB-W MM	VHF (III)	2	AB	40 RU	1500 W	6000 W

BANDL and MMDS also available

Specifications and characteristics are subject to change without notice.

GENERAL

	3BDT 502 MM
Working Class AB	
Cooling	Forced air or Liquid Cooled
Local control and monitoring	Extensive front panel control
	Local terminal on RS-232
Remote control and monitoring	Web based Java interface
	Telnet access via Ethernet
	SNMP
Operating temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	380 V AC (3 ph.)

3BDT 502 MM

Dual Mode Transmitter with Re-Multiplexer Function and Decoder Built-in 6000W ps/1500W rms

> 3BDT 502 MM

> 3BDT 502 W MM Liquid Cooled Version with Dual Driver Option

Main Features

- UHF/VHF(III) and MMDS fully agile Dual Mode Transmitter.
- Integrated MPEG2 Decoder.
- Integrated GPS Professional Receiver.
- Integrated SNMP management with events store.
- Integrated GBE interface.
- Output Power remotely adjustable with high dynamics, in step of 0.1 dB.
- Digital linear precorrection.
- Digital non linear precorrection with automatic curves loading for each standard, channel and power levels.
- Wide Range Power Supply 90-264 V AC in fuse-free configuration (SW Standby Switch).
- 12 (with power limitations), 24, 48 V DC Optional.
- Typical MER: > 36 dB at all power levels and in all channels.
- Quick-acting protection circuits against overpower and direct/reflected power and "Soft-start" Circuit.
- Protection against reflected power with automatic fold-back.
- Multi-Mode Operation w/software switch.
- Transport stream de-multiplexing with extraction of a single program.
- Re-multiplexing function with drop-out of services or single components.

La nuova serie "MAGNUM" è formata da una nuova generazione di trasmettitori digitali televisivi ad altissima integrazione per reti SFN e MFN. Un innovativo firmware permette, grazie ad un processore interno a 32 bit, l'elaborazione del segnale ad errore zero.
Questi trasmettitori sono dotati di adattatore SFN integrato e dell'avanzatissima tecnologia SWDT (Software Defined Transmitters) che permette di caricare sullo stesso hardware diversi sistemi di modulazione, digitali e analogici (DVB-T/H, PAL, ASTC, NTSC, QPSK, QAM, FLO, SECAM, ecc...) e di selezionare la modalità di trasmissione mediante una semplice commutazione, con la semplice pressione di un tasto posto sul pannello frontale, in remoto, utilizzando un contatto pulito, tramite comandi SNMP, via TCP/IP utilizzando l'interfaccia web. Sono disponibili interfacce per il controllo remoto degli apparati mediante protocolli seriali o porte TCP/IP.
Il server SMNP integrato consente di effettuare ogni tipo di telecontrollo automatizzato.

The new "MAGNUM" series is the latest generation of high-integration digital television transmitters for SFN and MNF networks.
An innovative firmware allows zero error signal processing thanks to an internal 32 bit architecture.
These transmitters feature a built-in SFN adapter and very advanced SWDT (Software Defined Transmitters) technology which allows implementing different modulation patterns - either digital or analog - (DVB-T/H, PAL, ASTC, NTSC, QPSK, QAM, FLO, SECAM, etc...) in the same hardware.
Moreover, the SWDT technology allows selecting transmission modes in variuos ways: locally, by pressing a button on the front panel; remotely, using a clean contact; via SNMP commands, via TCP/IP, using the Web graphics interface; or even via a dedicated command inserted into the transport stream.
Moreover, the built-in SNMP server allows performing all types of automated remote control.

MODEL-SPECIFIC DATA

Model	Output band	Number of amplifiers	Working class	Dimensions	Digital output power (rms) without filter (Shoulders -36 dB @ F_0 ± 4.3 MHz) DVB-T/H	Nominal analog output power (p.s.) PAL
3BDT 502UB MM	UHF	2	AB	30 RU	1500 W	6000 W
3BDT 502UM MM	UHF	4	AB	40 RU	1500 W	6000 W
3BDT 502UB-W MM	UHF	2	AB	40 RU	1500 W	6000 W
3BDT 502TB MM	VHF (III)	2	AB	30 RU	1500 W	6000 W
3BDT 502TM MM	VHF (III)	4	AB	40 RU	1500 W	6000 W
3BDT 502TB-W MM	VHF (III)	2	AB	40 RU	1500 W	6000 W

BANDL and MMDS also available

Specifications and characteristics are subject to change without notice.

GENERAL

Working Class AB	3B DT 502 ARK-1
Cooling	Forced air or Liquid Cooled
Local control and monitoring	Extensive front panel control
Remote control and monitoring	Local terminal on RS-232 Web based Java interface Telnet access via Ethernet SNMP
Operating temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	380 V AC (3 ph.)

3BDT 532 MM

Dual Mode Transmitter with Re-Multiplexer Function and Decoder Built-in 9000W ps/2250W rms

> 3BDT 532MM

> 3BDT 532 W MM Liquid Cooled Version with Dual Driver Option

Main Features

- UHF/VHF(III) and MMDS fully agile Dual Mode Transmitter.
- Integrated MPEG2 Decoder.
- Integrated GPS Professional Receiver.
- Integrated SNMP management with events store.
- Integrated GBE interface.
- Output Power remotely adjustable with high dynamics, in step of 0.1 dB.
- Digital linear precorrection.
- Digital non linear precorrection with automatic curves loading for each standard, channel and power levels.
- Wide Range Power Supply 90-264 V AC in fuse-free configuration (SW Standby Switch).
- 12 (with power limitations), 24, 48 V DC Optional.
- Typical MER: > 36 dB at all power levels and in all channels.
- Quick-acting protection circuits against overpower and direct/reflected power and “Soft-start” Circuit.
- Protection against reflected power with automatic fold-back.
- Multi-Mode Operation w/software switch.
- Transport stream de-multiplexing with extraction of a single program.
- Re-multiplexing function with drop-out of services or single components.

La nuova serie "MAGNUM" è formata da una nuova generazione di trasmettitori digitali televisivi ad altissima integrazione per reti SFN e MFN. Un innovativo firmware permette, grazie ad un processore interno a 32 bit, l'elaborazione del segnale ad errore zero.
Questi trasmettitori sono dotati di adattatore SFN integrato e dell'avanzatissima tecnologia SWDT (Software Defined Transmitters) che permette di caricare sullo stesso hardware diversi sistemi di modulazione, digitali e analogici (DVB-T/H, PAL, ASTC, NTSC, QPSK, QAM, FLO, SECAM, ecc...) e di selezionare la modalità di trasmissione mediante una semplice commutazione, con la semplice pressione di un tasto posto sul pannello frontale, in remoto, utilizzando un contatto pulito, tramite comandi SNMP, via TCP/IP utilizzando l'interfaccia web. Sono disponibili interfacce per il controllo remoto degli apparati mediante protocolli seriali o porte TCP/IP.
Il server SMNP integrato consente di effettuare ogni tipo di telecontrollo automatizzato.

The new "MAGNUM" series is the latest generation of high-integration digital television transmitters for SFN and MNF networks.
An innovative firmware allows zero error signal processing thanks to an internal 32 bit architecture.
These transmitters feature a built-in SFN adapter and very advanced SWDT (Software Defined Transmitters) technology which allows implementing different modulation patterns - either digital or analog - (DVB-T/H, PAL, ASTC, NTSC, QPSK, QAM, FLO, SECAM, etc...) in the same hardware.
Moreover, the SWDT technology allows selecting transmission modes in variuos ways: locally, by pressing a button on the front panel; remotely, using a clean contact; via SNMP commands, via TCP/IP, using the Web graphics interface; or even via a dedicated command inserted into the transport stream.
Moreover, the built-in SNMP server allows performing all types of automated remote control.

MODEL-SPECIFIC DATA

Model	Output band	Number of amplifiers	Working class	Dimensions	Digital output power (rms) without filter (Shoulders -36 dB @ F_0 ± 4.3 MHz)	Nominal analog output power (p.s.)
					DVB-T/H	PAL
3BDT 532UB MM	UHF	3	AB	40 RU	2250 W	9000 W
3BDT 532UB-W MM	UHF	3	AB	40 RU	2250 W	9000 W
3BDT 532TB MM	VHF (III)	3	AB	40 RU	2250 W	9000 W
3BDT 532TB-W MM	VHF (III)	3	AB	40 RU	2250 W	9000 W

BANDL and MMDS also available

Specifications and characteristics are subject to change without notice.

GENERAL

Working Class AB	3BDT 532 MM
Cooling	Forced air or Liquid Cooled
Local control and monitoring	Extensive front panel control
Remote control and monitoring	Local terminal on RS-232 Web based Java interface Telnet access via Ethernet SNMP
Operating temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	380 V AC (3 ph.)

3BDT 103 MM

Dual Mode Transmitter with Re-Multiplexer Function and Decoder Built-in 12000W ps/3000W rms

> 3BDT 103 MM
with Dual Driver Option

> 3BDT 103 W MM
Liquid Cooled Version with Dual Driver Option

Main Features

- UHF/VHF(III) and MMDS fully agile Dual Mode Transmitter.
- Integrated MPEG2 Decoder.
- Integrated GPS Professional Receiver.
- Integrated SNMP management with events store.
- Integrated GBE interface.
- Output Power remotely adjustable with high dynamics, in step of 0.1 dB.
- Digital linear precorrection.
- Digital non linear precorrection with automatic curves loading for each standard, channel and power levels.
- Wide Range Power Supply 90-264 V AC in fuse-free configuration (SW Standby Switch).
- 12 (with power limitations), 24, 48 V DC Optional.
- Typical MER: > 36 dB at all power levels and in all channels.
- Quick-acting protection circuits against overpower and direct/reflected power and “Soft-start” Circuit.
- Protection against reflected power with automatic fold-back.
- Multi-Mode Operation w/software switch.
- Transport stream de-multiplexing with extraction of a single program.
- Re-multiplexing function with drop-out of services or single components.

La nuova serie "MAGNUM" è formata da una nuova generazione di trasmettitori digitali televisivi ad altissima integrazione per reti SFN e MFN. Un innovativo firmware permette, grazie ad un processore interno a 32 bit, l'elaborazione del segnale ad errore zero.
Questi trasmettitori sono dotati di adattatore SFN integrato e dell'avanzatissima tecnologia SWDT (Software Defined Transmitters) che permette di caricare sullo stesso hardware diversi sistemi di modulazione, digitali e analogici (DVB-T/H, PAL, ASTC, NTSC, QPSK, QAM, FLO, SECAM, ecc...) e di selezionare la modalità di trasmissione mediante una semplice commutazione, con la semplice pressione di un tasto posto sul pannello frontale, in remoto, utilizzando un contatto pulito, tramite comandi SNMP, via TCP/IP utilizzando l'interfaccia web. Sono disponibili interfacce per il controllo remoto degli apparati mediante protocolli seriali o porte TCP/IP.
Il server SMNP integrato consente di effettuare ogni tipo di telecontrollo automatizzato.

The new "MAGNUM" series is the latest generation of high-integration digital television transmitters for SFN and MNF networks.
An innovative firmware allows zero error signal processing thanks to an internal 32 bit architecture.
These transmitters feature a built-in SFN adapter and very advanced SWDT (Software Defined Transmitters) technology which allows implementing different modulation patterns - either digital or analog - (DVB-T/H, PAL, ASTC, NTSC, QPSK, QAM, FLO, SECAM, etc...) in the same hardware.
Moreover, the SWDT technology allows selecting transmission modes in variuos ways: locally, by pressing a button on the front panel; remotely, using a clean contact; via SNMP commands, via TCP/IP, using the Web graphics interface; or even via a dedicated command inserted into the transport stream.
Moreover, the built-in SNMP server allows performing all types of automated remote control.

MODEL-SPECIFIC DATA

Model	Output band	Number of amplifiers	Working class	Dimensions	Digital output power (rms) without filter (Shoulders -36 dB @ F_0 ± 4.3 MHz) DVB-T/H	Nominal analog output power (p.s.) PAL
3BDT 133UM MM	UHF	6	AB	2 X 40 RU	4500 W	18000 W
3BDT 133UM-W MM	UHF	6	AB	2 X 40 RU	4500 W	18000 W
3BDT 133TM MM	VHF (III)	6	AB	2 X 40 RU	4500 W	18000 W
3BDT 133TM-W MM	VHF (III)	6	AB	2 X 40 RU	4500 W	18000 W

BANDL and MMDS also available

Specifications and characteristics are subject to change without notice.

GENERAL

Working Class AB	3BDT 133 MM
Cooling	Forced air or Liquid Cooled
Local control and monitoring	Extensive front panel control
Remote control and monitoring	Local terminal on RS-232 Web based Java interface Telnet access via Ethernet SNMP
Operating temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	380 V AC (3 ph.)

3BDT 133 MM

Dual Mode Transmitter with Re-Multiplexer Function and Decoder Built-in 18000W ps/4500W rms

> 3BDT 133UM MM
with Dual Driver Option

> 3BDT 133UM-W MM
Liquid Cooled Version
with Dual Driver Option

Main Features

- UHF/VHF(III) and MMDS fully agile Dual Mode Transmitter.
- Integrated MPEG2 Decoder.
- Integrated GPS Professional Receiver.
- Integrated SNMP management with events store.
- Integrated GBE interface.
- Output Power remotely adjustable with high dynamics, in step of 0.1 dB.
- Digital linear precorrection.
- Digital non linear precorrection with automatic curves loading for each standard, channel and power levels.
- Wide Range Power Supply 90-264 V AC in fuse-free configuration (SW Standby Switch).
- 12 (with power limitations), 24, 48 V DC Optional.
- Typical MER: > 36 dB at all power levels and in all channels.
- Quick-acting protection circuits against overpower and direct/reflected power and “Soft-start” Circuit.
- Protection against reflected power with automatic fold-back.
- Multi-Mode Operation w/software switch.
- Transport stream de-multiplexing with extraction of a single program.
- Re-multiplexing function with drop-out of services or single components.

La nuova serie "MAGNUM" è formata da una nuova generazione di trasmettitori digitali televisivi ad altissima integrazione per reti SFN e MFN. Un innovativo firmware permette, grazie ad un processore interno a 32 bit, l'elaborazione del segnale ad errore zero.
Questi trasmettitori sono dotati di adattatore SFN integrato e dell'avanzatissima tecnologia SWDT (Software Defined Transmitters) che permette di caricare sullo stesso hardware diversi sistemi di modulazione, digitali e analogici (DVB-T/H, PAL, ASTC, NTSC, QPSK, QAM, FLO, SECAM, ecc...) e di selezionare la modalità di trasmissione mediante una semplice commutazione, con la semplice pressione di un tasto posto sul pannello frontale, in remoto, utilizzando un contatto pulito, tramite comandi SNMP, via TCP/IP utilizzando l'interfaccia web. Sono disponibili interfacce per il controllo remoto degli apparati mediante protocolli seriali o porte TCP/IP.
Il server SMNP integrato consente di effettuare ogni tipo di telecontrollo automatizzato.

The new "MAGNUM" series is the latest generation of high-integration digital television transmitters for SFN and MNF networks.
An innovative firmware allows zero error signal processing thanks to an internal 32 bit architecture.
These transmitters feature a built-in SFN adapter and very advanced SWDT (Software Defined Transmitters) technology which allows implementing different modulation patterns - either digital or analog - (DVB-T/H, PAL, ASTC, NTSC, QPSK, QAM, FLO, SECAM, etc...) in the same hardware.
Moreover, the SWDT technology allows selecting transmission modes in variuos ways: locally, by pressing a button on the front panel; remotely, using a clean contact; via SNMP commands, via TCP/IP, using the Web graphics interface; or even via a dedicated command inserted into the transport stream.
Moreover, the built-in SNMP server allows performing all types of automated remote control.

MODEL-SPECIFIC DATA

Model	Output band	Number of amplifiers	Working class	Dimensions	Digital output power (rms) without filter (Shoulders -36 dB @ F_0 ± 4.3 MHz) DVB-T/H	Nominal analog output power (p.s.) PAL
3BSDT 203UM MM	UHF	8	AB	2 X 40 RU	6000 W	24000 W
3BSDT 203UM-W MM	UHF	8	AB	2 X 40 RU	6000 W	24000 W
3BSDT 203TM MM	VHF (III)	8	AB	2 X 40 RU	6000 W	24000 W
3BSDT 203TM-W MM	VHF (III)	8	AB	2 X 40 RU	6000 W	24000 W

BANDL and MMDS also available

Specifications and characteristics are subject to change without notice.

GENERAL

	3BSDT 203 MM
Working Class AB	
Cooling	Forced air or Liquid Cooled
Local control and monitoring	Extensive front panel control
	Local terminal on RS-232
Remote control and monitoring	Web based Java interface
	Telnet access via Ethernet
	SNMP
Operating temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	380 V AC (3 ph.)

3BDT 203 MM

Dual Mode Transmitter with Re-Multiplexer Function and Decoder Built-in 24000W ps/6000W rms

> 3BDT 203 MM
With Dual Driver Option

> 3BDT 203 W MM
Liquid Cooled Version
With Dual Driver Option

Main Features

- UHF/VHF(III) and MMDS fully agile Dual Mode Transmitter.
- Integrated MPEG2 Decoder.
- Integrated GPS Professional Receiver.
- Integrated SNMP management with events store.
- Integrated GBE interface.
- Output Power remotely adjustable with high dynamics, in step of 0.1 dB.
- Digital linear precorrection.
- Digital non linear precorrection with automatic curves loading for each standard, channel and power levels.
- Wide Range Power Supply 90-264 V AC in fuse-free configuration (SW Standby Switch).
- 12 (with power limitations), 24, 48 V DC Optional.
- Typical MER: > 36 dB at all power levels and in all channels.
- Quick-acting protection circuits against overpower and direct/reflected power and "Soft-start" Circuit.
- Protection against reflected power with automatic fold-back.
- Multi-Mode Operation w/software switch.
- Transport stream de-multiplexing with extraction of a single program.
- Re-multiplexing function with drop-out of services or single components.

La nuova serie "MAGNUM" è formata da una nuova generazione di trasmettitori digitali televisivi ad altissima integrazione per reti SFN e MFN.
Un innovativo firmware permette, grazie ad un processore interno a 32 bit, l'elaborazione del segnale ad errore zero.
Questi trasmettitori sono dotati di adattatore SFN integrato e dell'avanzatissima tecnologia SWDT (Software Defined Transmitters) che permette di caricare sullo stesso hardware diversi sistemi di modulazione, digitali e analogici (DVB-T/H, PAL, ASTC, NTSC, QPSK, QAM, FLO, SECAM, ecc...) e di selezionare la modalità di trasmissione mediante una semplice commutazione, con la semplice pressione di un tasto posto sul pannello frontale, in remoto, utilizzando un contatto pulito, tramite comandi SNMP, via TCP/IP utilizzando l'interfaccia web. Sono disponibili interfacce per il controllo remoto degli apparati mediante protocolli seriali o porte TCP/IP.
Il server SMNP integrato consente di effettuare ogni tipo di telecontrollo automatizzato.

The new "MAGNUM" series is the latest generation of high-integration digital television transmitters for SFN and MNF networks.
An innovative firmware allows zero error signal processing thanks to an internal 32 bit architecture.
These transmitters feature a built-in SFN adapter and very advanced SWDT (Software Defined Transmitters) technology which allows implementing different modulation patterns - either digital or analog - (DVB-T/H, PAL, ASTC, NTSC, QPSK, QAM, FLO, SECAM, etc...) in the same hardware.
Moreover, the SWDT technology allows selecting transmission modes in variuos ways: locally, by pressing a button on the front panel; remotely, using a clean contact; via SNMP commands, via TCP/IP, using the Web graphics interface; or even via a dedicated command inserted into the transport stream.
Moreover, the built-in SNMP server allows performing all types of automated remote control.

MODEL-SPECIFIC DATA

Model	Output band	Number of amplifiers	Working class	Dimensions	Digital output power (rms) without filter (Shoulders -36 dB @ F_0 ± 4.3 MHz) DVB-T/H	Nominal analog output power (p.s.) PAL
3BSDT 203UM MM	UHF	8	AB	2 X 40 RU	6000 W	24000 W
3BSDT 203UM-W MM	UHF	8	AB	2 X 40 RU	6000 W	24000 W
3BSDT 203TM MM	VHF (III)	8	AB	2 X 40 RU	6000 W	24000 W
3BSDT 203TM-W MM	VHF (III)	8	AB	2 X 40 RU	6000 W	24000 W

BANDL and MMDS also available

Specifications and characteristics are subject to change without notice.

GENERAL

	3BSDT 203 MM
Working Class AB	
Cooling	Forced air or Liquid Cooled
Local control and monitoring	Extensive front panel control
	Local terminal on RS-232
Remote control and monitoring	Web based Java interface
	Telnet access via Ethernet
	SNMP
Operating temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	380 V AC (3 ph.)

3BDT ARK-1 Series

Transmitters and Transposers

PAL + DVB

AUTOMATIC DIGITAL/ANALOG	HETERODYNE TRANSPOSER	REGENERATIVE TRANSMITTER	TRANSMITTER	S.F. HETERODYNE TRANSPOSER w ECHO CANCELLER
	RF > IF > RF	RF > ASI > MOD > RF	ASI > MOD > RF	RF > IF > ECHO > RF

DVB-T
DVB-H

PAL

From 2,5W rms up to 18KW rms, from 10W ps up to 60KW ps
Force Air Cooled or Liquid Cooling System

3BDT Series ARK-1 Version

ALL-IN-ONE - Heterodyne Transposer, Regenerative Transmitter, Transmitter, Single Frequency Echo Canceller (option)

3BDT 200 ARK-1

Heterodyne Transposer, Regenerative Transmitter, Transmitter, Single Frequency Echo Canceller (option) 10W ps/2,5W rms, class A

> 3BDT 200 ARK-1

Main Features

- UHF/VHF(III) fully agile Heterodyne Transposer, Regenerative Transmitter, Dual Mode Transmitter and Single frequency Echo Canceller.
- Seamless ASI switching.
- Integrated GPS Professional Receiver.
- Integrated Receiver VHF-UHF..
- Integrated SNMP management with events store.
- Integrated GBE interface.
- 45 dB Integrated Echo cancellation between Input and output.
- Output Power remotely adjustable via MIP or SNMP with high dynamics, in step of 0.1 dB.
- “Soft-start” Circuit.
- Digital linear precorrection.
- Digital non linear precorrection with automatic curves loading for each standard, channel and power levels.
- Wide Range Power Supply 90-264 V AC in fuse-free configuration (SW Standby Switch).
- 12 (with power limitations), 24, 48 V DC Optional.
- Typical MER: > 36 dB at all power levels and in all channels.
- Quick-acting protection circuits against overpowerand direct/reflected power.
- Protection against reflected power with automatic fold-back.
- Multi-Mode Operation w/software switch.
- Optional Digital Automatic Echo Canceller for SFN Gap-Filling

La serie 3BDT è oggi arricchita dalla ARK 3BDT-1, l'All-in-one ripetitore / trasmettitore. In effetti, la ARK-1 è un Heterodyne transposer, un Trasmettitore rigenerativo e un trasmettitore in un unico hardware. Con l'opzione di cancellazione di Echo, perfetta per Singole Frequency Network, l'ARK SDT è la risposta per una mossa facile alla digitalizzazione. Il trasmettitore 3BDT ARK-1 dispone di un built-in SFN adapter e di un avanzata tecnologia SWDT (Software Defined Transmitters) , tipica di questa serie di prodotti, che consente di attuare schemi di modulazione differenti - sia digitale che analogico - (DVB-T / H , PAL, ASTC, NSTC, FLO, ecc) nello stesso hardware. Inoltre, la tecnologia SWDT consente di selezionare le modalità di trasmissione in vari modi: da remoto, utilizzando un contatto pulito; via comandi SNMP; via TCP / IP, utilizzando l'interfaccia web grafica, o anche tramite un comando dedicato inserito nel flusso di trasporto. Un firmware innovativo permette l'elaborazione del segnale di errore pari a zero grazie ad un'architettura interna a 32 bit. Interfacce funzionali sono disponibili per il totale controllo remoto dell'apparato tramite protocolli seriali o porte TCP / IP. Grazie al server Web interno, l'apparecchio può essere facilmente monitorato e configurato tramite una connessione LAN e un browser standard. Inoltre, il server incorporato SNMP permette di eseguire tutti i tipi di sistemi automatizzati di controllo remoto.

The 3BDT series is today enriched by the 3BDT ARK-1, the All-in-one Transposer/Transmitter. In fact, the ARK-1 is an Heterodyne tranSposer, a Regenerative Trasmitter and a transmitter in a single hardware. With the Echo cancellation option, perfect for Single Frequency Network, the SDT ARK is the answer for an easy move to the digitalization. The 3BDT ARK-1 transmitters features a built-in SFN adapter and very advanced SWDT (Software Defined Transmitters) technology, typical of this series of products, which allows implementing different modulation patterns – either digital or analog – (DVB-T/H, PAL, ASTC, NSTC, FLO, etc.) in the same hardware. Moreover, the SWDT technology allows selecting transmission modes in various ways: remotely, using a clean contact; via SNMP commands; via TCP/IP, using the Web gra-phic interface; or even via a dedicated command inserted into the transport stream. An innovative firmware allows zero error signal processing thanks to an internal 32 bit architecture.Functional interfaces are available for total remote control of the apparatus by means of serial protocols or TCP/IP ports. Thanks to the internal Web server the apparatus can be easily monitored and configured using a LAN connection and a standard Web browser. Moreover, the built-in SNMP server allows performing all types of automated remote control.

MODEL-SPECIFIC DATA

Model	Output band	Digital output power (rms) without filter DVB-T/H	Nominal analog output power (p.s.) with dual mode option
3BDT 200UB ARK-1	UHF	2,5 W class A	10 W
3BDT 200TB ARK-1	VHF (III)	2,5 W class A	10 W

Specifications and characteristics are subject to change without notice.

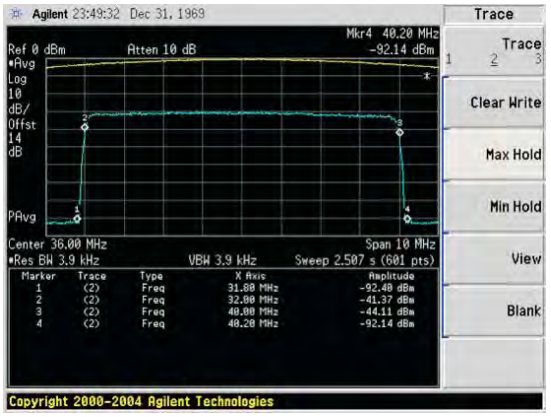
GENERAL

Working Class AB	3BDT 500 ARK-1
Working Class A	SDT 200 ARK-1
Cooling	Forced air
Local control and monitoring	Extensive front panel control Local terminal on RS-232
Remote control and monitoring	Web based Java interface Telnet access via Ethernet SNMP
Operating temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	90-260 V AC
Dimensions	1 RU (19” rack), 400 mm

Front View

Front Panel Connectors

1. RF IN	RF Input Signal from LNB. N (50 Ohm) type connector, female.
2. GPS IN	TNC (75 Ohm) type connector, female.
3. ASI OUT HP	Digital Output High Priority (ASI signal Monitor)
4. ASI OUT LP	Digital Output Low Priority (ASI signal Monitor)
5. ASI IN 1/SMPTE 310/SDI	Digital Input
6. ASI IN 2/SMPTE 310/SDI	Digital Input
7. ASI IN 3/SMPTE 310/SDI	Digital Input
8. ASI IN 2/SMPTE 310/SDI	Digital Input
9. TCP/IP + GBE	Integrated TCP/IP Giga Bit Ethernet interface (also suitable for MPEG over IP feeding).
10. LCD Display	Multimeter 4 x 20
11. Controls	Navigation and operation push-buttons



ECHO CANCELLATION OPTION

Internal Processing Time: 9us

ECHO CANCELLATION

Permitted Echo at input: ≤ +17dB relative to input signal

Echo cancellation between input and output: 45 dB

MAIN TECHNICAL CHARACTERISTICS

GENERAL

Available standards	DVB-T, DVB-H, PAL
Operating frequency range	UHF Band (470 - 862 MHz)
Cooling	Forced Air
Main supply	230VAC
MAX Power consumption	130W

INPUT PARAMETERS

DIGITAL 1 (HP&LP) & DIGITAL 2(HP&LP)

Input Signal	MPEG-2 Transport Stream, ASI format
Input Level	800 mV (±10%)
Data rate	270 MB/s
Data rate error	±3ppm
Input connector	BNC
Input impedance	75Ω

GBE

MPEG over IP (pro mpeg cop 3) Transport Stream input.

Full control and management via JAVA Interface and SNMP protocol.

RF

Input Signal	VHF/UHF
Input connector	N female
Input impedance	50Ω

LNB power supply from transmitter

OUTPUT PARAMETERS

GENERAL

RF OUTPUT Connector	N Female
Impedance	50Ω
Load mismatch	2:1 Max. (with output isolator)
RF monitor connector	SMA
Impedance	50Ω

DVB-H/T MODE

Nominal output power	2,5 W rms
In-Band Flatness	± 0.5dB
Shoulders at F0 ± 4.3 MHz	= -36 dBWith digital pre-correction inserted
Spurious emission (with output filter)	< -60 dBc
Harmonic emission(with output filter)	< -60 dBc

PAL MODE

Nominal output power	10 W ps
In-Band Flatness	± 0.5dB
In-Band intermodulation	= -54 Db With digital pre-correction inserted
Spurious emission (with output filter)	< -60 dBc
Harmonic emission (with output filter)	< -60 dBc

Analog/Digital Television Heterodyne Repeater

•Input/Output
UHF/VHF ITU.470 / DVB-T/H input
> Frequency offset, 1/21 Hz steps.
> Dual conversion

•Monitor input
Squelch on minimum level
> BER/MER monitor (Digital mode Measured by STV)

•Monitor output
ASI TS output
> ASI HP for High Priority and non Hierarchical TS demodulated from input (only for DVB mode)
> ASI LP for Hierarchical Low Priority TS demodulated from input (only for DVB mode)

•Analog/Digital mode
Switch between Analog/Digital mode
> Digital on when STV is locked otherwise Analog
> If no input Analaog or Digital RF Off
> No priority
> Manual switch provided
> Switch programmed on date

•Digital IF filter
Linear precorrection
AM/PM precorrection
Critical mask reduced to 7.9 MHz

•Control interfaces
Gigabit Ethernet connection:
> Java GUI
> SNMP control interface
Alarms to SNMP traps association user defined
RS232 low level textual commands interface
Local Interface based on Display and Buttons Pad for management settings
Digital input/output:
> 4 digital inputs for external commands programmable
> Define commands available for opto
> 4 relays output programmable
> Alarms to Relays association user defined
Device configuration import/export from/to file.

•GPS receiver:
10 MHz / 1 PPS reference
Time / Date
GPS coordinates

•Clock locked to
Internal oscillator
External 10 MHz reference
GPS receiver 10 MHz reference

•Alarms:
Reference clock alarms
RF input alarms
Digital IF filter overflows alarms
UHF converter / amplifier alarms

•Event memory
32 k memory
> Verify update to 256 k
System start logging
System commands from every control interface logging
Alarms logging

•Digital echo canceller
Selectable operation windows

Regenerative Hierarchical

DVB-T/H Modulator

•Input
UHF Analog / Digital input
> UHF channels from 21 (center frequency 474 MHz) to 69 (center frequency 858 MHz).
> Frequency offset, 1/21 Hz steps.
> 2 DVB demodulators for HP an LP Hierarchical TS input
4 ASI TS input
Pro MPEG Cop 3 on Gigabit Ethernet
> 2 UDP port for HP/LP Hierarchical input

•Output
UHF Digital output
> UHF programmable channels from 21 (center frequency 474 MHz) to 69 (center frequency 858 MHz).
> Frequency offset, 1/21 Hz steps.

•Monitor input
> BER/MER monitor (Digital mode Measured by STV)

•Monitor output
ASI TS output
> ASI HP for High Priority and non Hierarchical TS.
> ASI LP for Hierarchical Low Priority TS.
Pro MPEG Cop3 on Gigabit Ethernet

•DVB-T/H modulator
Modulation modes 2k,4k,8k
Constellation QPSK, 16 QAM; 64 QAM
Guard Time from 1/4 to 1/32
FEC from 1/2 up to 7/8
Hierarchical modulation modes
Bandwidth from 5 MHz up to 8 MHz
DVB-H options
Synchronization modes:
> MFN
> SFN
> MFN with MIP parameters
> SFN with local parameters (test mode)
MIP analyzer for HP and LP input
Linear precorrection
AM/PM precorrection

•Control interfaces
Gigabit Ethernet connection:
> Java GUI
> SNMP control interface
Alarms to SNMP traps association user defined
RS232 low level textual commands interface.
Local Interface based on Display and Buttons Pad for management settings.
Device configuration import/export from/to file.
Digital input/output:
> 4 digital inputs for external commands programmable
Define commands available for opto
> 4 relays output programmable
Alarms to Relays association user defined

•GPS receiver:
10 MHz / 1 PPS reference
Time / Date
GPS coordinates

•Clock locked to
Internal oscillator
External 10 MHz reference
GPS receiver 10 MHz reference

•Alarms:
Reference clock alarms:
Input alarms
DVB Rx alarms
SFN alarms:
UHF converter / amplifier alarms:

•Event memory
32 k memory
> Verify update to 256 k
System start logging
System commands from every control interface logging
Alarms logging

3BDT 500 ARK-1

Heterodyne Transposer, Regenerative Transmitter, Transmitter, Single Frequency Echo Canceller (option) 50W ps/10W rms

> 3BDT 500 ARK-1

Main Features

- UHF/VHF(III) fully agile Heterodyne Transposer, Regenerative Transmitter, Dual Mode Transmitter and Single frequency Echo Canceller.
- Seamless ASI switching.
- Integrated GPS Professional Receiver.
- Integrated Receiver VHF-UHF..
- Integrated SNMP management with events store.
- Integrated GBE interface.
- 45 dB Integrated Echo cancellation between Input and output.
- Output Power remotely adjustable via MIP or SNMP with high dynamics, in step of 0.1 dB.
- “Soft-start” Circuit.
- Digital linear precorrection.
- Digital non linear precorrection with automatic curves loading for each standard, channel and power levels.
- Wide Range Power Supply 90-264 V AC in fuse-free configuration (SW Standby Switch).
- 12 (with power limitations), 24, 48 V DC Optional.
- Typical MER: > 36 dB at all power levels and in all channels.
- Quick-acting protection circuits against overpowerand direct/reflected power.
- Protection against reflected power with automatic fold-back.
- Multi-Mode Operation w/software switch.
- Optional Digital Automatic Echo Canceller for SFN Gap-Filling

La serie 3BDT è oggi arricchita dalla ARK 3BDT-1, l'All-in-one ripetitore / trasmettitore. In effetti, la ARK-1 è un Heterodyne transposer, un Trasmettitore rigenerativo e un trasmettitore in un unico hardware. Con l'opzione di cancellazione di Echo, perfetta per Singole Frequency Network, l'ARK SDT è la risposta per una mossa facile alla digitalizzazione. Il trasmettitore 3BDT ARK-1 dispone di un built-in SFN adapter e di un avanzata tecnologia SWDT (Software Defined Transmitters) , tipica di questa serie di prodotti, che consente di attuare schemi di modulazione differenti - sia digitale che analogico - (DVB-T / H , PAL, ASTC, NSTC, FLO, ecc) nello stesso hardware. Inoltre, la tecnologia SWDT consente di selezionare le modalità di trasmissione in vari modi: da remoto, utilizzando un contatto pulito; via comandi SNMP; via TCP / IP, utilizzando l'interfaccia web grafica, o anche tramite un comando dedicato inserito nel flusso di trasporto. Un firmware innovativo permette l'elaborazione del segnale di errore pari a zero grazie ad un'architettura interna a 32 bit. Interfacce funzionali sono disponibili per il totale controllo remoto dell'apparato tramite protocolli seriali o porte TCP / IP. Grazie al server Web interno, l'apparecchio può essere facilmente monitorato e configurato tramite una connessione LAN e un browser standard. Inoltre, il server incorporato SNMP permette di eseguire tutti i tipi di sistemi automatizzati di controllo remoto.

The 3BDT series is today enriched by the 3BDT ARK-1, the All-in-one Transposer/Transmitter. In fact, the ARK-1 is an Heterodyne tranSposer, a Regenerative Trasmitter and a transmitter in a single hardware. With the Echo cancellation option, perfect for Single Frequency Network, the SDT ARK is the answer for an easy move to the digitalization. The 3BDT ARK-1 transmitters features a built-in SFN adapter and very advanced SWDT (Software Defined Transmitters) technology, typical of this series of products, which allows implementing different modulation patterns – either digital or analog – (DVB-T/H, PAL, ASTC, NSTC, FLO, etc.) in the same hardware. Moreover, the SWDT technology allows selecting transmission modes in various ways: remotely, using a clean contact; via SNMP commands; via TCP/IP, using the Web gra-phic interface; or even via a dedicated command inserted into the transport stream. An innovative firmware allows zero error signal processing thanks to an internal 32 bit architecture.Functional interfaces are available for total remote control of the apparatus by means of serial protocols or TCP/IP ports. Thanks to the internal Web server the apparatus can be easily monitored and configured using a LAN connection and a standard Web browser. Moreover, the built-in SNMP server allows performing all types of automated remote control.

MODEL-SPECIFIC DATA

Model	Output band	Digital output power (rms) without filter DVB-T/H	Nominal analog output power (p.s.) with dual mode option
3BDT 500UB ARK-1	UHF	10 W	50 W
3BDT 500TB ARK-1	VHF (III)	10 W	50 W

Specifications and characteristics are subject to change without notice.

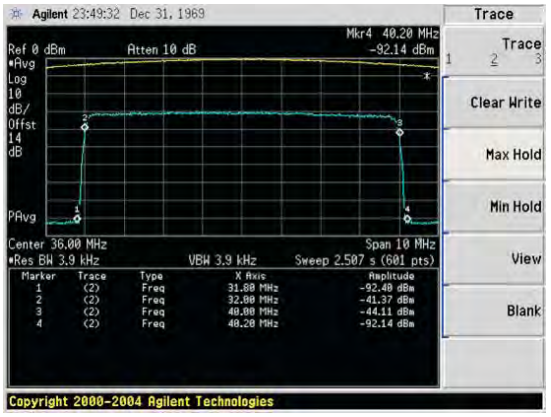
GENERAL

Working Class AB	3B DT 500 ARK-1
Working Class A	3B DT 200 ARK-1
Cooling	Forced air
Local control and monitoring	Extensive front panel control Local terminal on RS-232
Remote control and monitoring	Web based Java interface Telnet access via Ethernet SNMP
Operating temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	90-260 V AC
Dimensions	1 RU (19” rack), 400 mm

Front View

Front Panel Connectors

1. RF IN	RF Input Signal from LNB. N (50 Ohm) type connector, female.
2. GPS IN	TNC (75 Ohm) type connector, female.
3. ASI OUT HP	Digital Output High Priority (ASI signal Monitor)
4. ASI OUT LP	Digital Output Low Priority (ASI signal Monitor)
5. ASI IN 1/SMPTE 310/SDI	Digital Input
6. ASI IN 2/SMPTE 310/SDI	Digital Input
7. ASI IN 3/SMPTE 310/SDI	Digital Input
8. ASI IN 2/SMPTE 310/SDI	Digital Input
9. TCP/IP + GBE	Integrated TCP/IP Giga Bit Ethernet interface (also suitable for MPEG over IP feeding).
10. LCD Display	Multimeter 4 x 20
11. Controls	Navigation and operation push-buttons



ECHO CANCELLATION OPTION

Internal Processing Time: 9us

ECHO CANCELLATION

Permitted Echo at input: ≤ +17 dB relative to input signal

Echo cancellation between input and output: 45 dB

MAIN TECHNICAL CHARACTERISTICS

GENERAL

Available standards	DVB-T, DVB-H, PAL
Operating frequency range	UHF Band (470 - 862 MHz)
Cooling	Forced Air
Main supply	230VAC
MAX Power consumption	130W

INPUT PARAMETERS

DIGITAL 1 (HP&LP) & DIGITAL 2(HP&LP)

Input Signal	MPEG-2 Transport Stream, ASI format
Input Level	800 mV (±10%)
Data rate	270 MB/s
Data rate error	±3ppm
Input connector	BNC
Input impedance	75Ω

GBE

MPEG over IP (pro mpeg cop 3) Transport Stream input.

Full control and management via JAVA Interface and SNMP protocol.

RF

Input Signal	VHF/UHF
Input connector	N female
Input impedance	50 Ω

LNB power supply from transmitter

OUTPUT PARAMETERS

GENERAL

RF OUTPUT Connector	N Female
Impedance	50Ω
Load mismatch	2:1 Max. (with output isolator)
RF monitor connector	SMA
Impedance	50Ω

DVB-H/T MODE

Nominal output power	10 W rms
In-Band Flatness	± 0.5dB
Shoulders at F0 ± 4.3 MHz	= -36 dBWith digital pre-correction inserted
Spurious emission (with output filter)	< -60 dBc
Harmonic emission(with output filter)	< -60 dBc

PAL MODE

Nominal output power	50 W ps
In-Band Flatness	± 0.5dB
In-Band intermodulation	= -54 Db With digital pre-correction inserted
Spurious emission (with output filter)	< -60 dBc
Harmonic emission (with output filter)	< -60 dBc

Analog/Digital Television Heterodyne Repeater

•Input/Output
UHF/VHF ITU.470 / DVB-T/H input
> Frequency offset, 1/21 Hz steps.
> Dual conversion

•Monitor input
Squelch on minimum level
> BER/MER monitor (Digital mode Measured by STV)

•Monitor output
ASI TS output
> ASI HP for High Priority and non Hierarchical TS demodulated from input (only for DVB mode)
> ASI LP for Hierarchical Low Priority TS demodulated from input (only for DVB mode)

•Analog/Digital mode
Switch between Analog/Digital mode
> Digital on when STV is locked otherwise Analog
> If no input Analaog or Digital RF Off
> No priority
> Manual switch provided
> Switch programmed on date

•Digital IF filter
Linear precorrection
AM/PM precorrection
Critical mask reduced to 7.9 MHz

•Control interfaces
Gigabit Ethernet connection:
> Java GUI
> SNMP control interface
Alarms to SNMP traps association user defined
RS232 low level textual commands interface
Local Interface based on Display and Buttons Pad for management settings
Digital input/output:
> 4 digital inputs for external commands programmable
> Define commands available for opto
> 4 relays output programmable
> Alarms to Relays association user defined
Device configuration import/export from/to file.

•GPS receiver:
10 MHz / 1 PPS reference
Time / Date
GPS coordinates

•Clock locked to
Internal oscillator
External 10 MHz reference
GPS receiver 10 MHz reference

•Alarms:
Reference clock alarms
RF input alarms
Digital IF filter overflows alarms
UHF converter / amplifier alarms

•Event memory
32 k memory
> Verify update to 256 k
System start logging
System commands from every control interface logging
Alarms logging

•Digital echo canceller
Selectable operation windows

Regenerative Hierarchical

DVB-T/H Modulator

•Input
UHF Analog / Digital input
> UHF channels from 21 (center frequency 474 MHz) to 69 (center frequency 858 MHz).
> Frequency offset, 1/21 Hz steps.
> 2 DVB demodulators for HP an LP Hierarchical TS input
4 ASI TS input
Pro MPEG Cop 3 on Gigabit Ethernet
> 2 UDP port for HP/LP Hierarchical input

•Output
UHF Digital output
> UHF programmable channels from 21 (center frequency 474 MHz) to 69 (center frequency 858 MHz).
> Frequency offset, 1/21 Hz steps.

•Monitor input
> BER/MER monitor (Digital mode Measured by STV)

•Monitor output
ASI TS output
> ASI HP for High Priority and non Hierarchical TS.
> ASI LP for Hierarchical Low Priority TS.
Pro MPEG Cop3 on Gigabit Ethernet

•DVB-T/H modulator
Modulation modes 2k,4k,8k
Constellation QPSK, 16 QAM; 64 QAM
Guard Time from 1/4 to 1/32
FEC from 1/2 up to 7/8
Hierarchical modulation modes
Bandwidth from 5 MHz up to 8 MHz
DVB-H options
Synchronization modes:
> MFN
> SFN
> MFN with MIP parameters
> SFN with local parameters (test mode)
MIP analyzer for HP and LP input
Linear precorrection
AM/PM precorrection

•Control interfaces
Gigabit Ethernet connection:
> Java GUI
> SNMP control interface
Alarms to SNMP traps association user defined
RS232 low level textual commands interface.
Local Interface based on Display and Buttons Pad for management settings.
Device configuration import/export from/to file.
Digital input/output:
> 4 digital inputs for external commands programmable
Define commands available for opto
> 4 relays output programmable
Alarms to Relays association user defined

•GPS receiver:
10 MHz / 1 PPS reference
Time / Date
GPS coordinates

•Clock locked to
Internal oscillator
External 10 MHz reference
GPS receiver 10 MHz reference

•Alarms:
Reference clock alarms:
Input alarms
DVB Rx alarms
SFN alarms:
UHF converter / amplifier alarms:

•Event memory
32 k memory
> Verify update to 256 k
System start logging
System commands from every control interface logging
Alarms logging

3BDT 201 ARK-1

Heterodyne Transposer, Regenerative Transmitter, Transmitter 200W ps/100W rms

> 3BDT 201 ARK-1

Main Features

- UHF/VHF(III) fully agile Heterodyne Transposer, Regenerative Transmitter, Dual Mode Transmitter.
- Seamless ASI switching.
- Integrated GPS Professional Receiver.
- Integrated Receiver VHF-UHF..
- Integrated SNMP management with events store.
- Integrated GBE interface.
- 45 dB Integrated Echo cancellation between Input and output.
- Output Power remotely adjustable via MIP or SNMP with high dynamics, in step of 0.1 dB.
- “Soft-start” Circuit.
- Digital linear precorrection.
- Digital non linear precorrection with automatic curves loading for each standard, channel and power levels.
- Wide Range Power Supply 90-264 V AC in fuse-free configuration (SW Standby Switch).
- Typical MER: > 36 dB at all power levels and in all channels.
- Quick-acting protection circuits against overpowerand direct/reflected power.
- Protection against reflected power with automatic fold-back.
- Multi-Mode Operation w/software switch.
- Optional Digital Automatic Echo Canceller for SFN Gap-Filling

La serie 3BDT è oggi arricchita dalla ARK 3BDT-1, l'All-in-one ripetitore / trasmettitore. In effetti, la ARK-1 è un Heterodyne transposer, un Trasmettitore rigenerativo e un trasmettitore in un unico hardware. Con l'opzione di cancellazione di Echo, perfetta per Singole Frequency Network, l'ARK SDT è la risposta per una mossa facile alla digitalizzazione. Il trasmettitore 3BDT ARK-1 dispone di un built-in SFN adapter e di un avanzata tecnologia SWDT (Software Defined Transmitters) , tipica di questa serie di prodotti, che consente di attuare schemi di modulazione differenti - sia digitale che analogico - (DVB-T / H , PAL, ASTC, NSTC, FLO, ecc) nello stesso hardware. Inoltre, la tecnologia SWDT consente di selezionare le modalità di trasmissione in vari modi: da remoto, utilizzando un contatto pulito; via comandi SNMP; via TCP / IP, utilizzando l'interfaccia web grafica, o anche tramite un comando dedicato inserito nel flusso di trasporto. Un firmware innovativo permette l'elaborazione del segnale di errore pari a zero grazie ad un'architettura interna a 32 bit. Interfacce funzionali sono disponibili per il totale controllo remoto dell'apparato tramite protocolli seriali o porte TCP / IP. Grazie al server Web interno, l'apparecchio può essere facilmente monitorato e configurato tramite una connessione LAN e un browser standard. Inoltre, il server incorporato SNMP permette di eseguire tutti i tipi di sistemi automatizzati di controllo remoto.

The 3BDT series is today enriched by the 3BDT ARK-1, the All-in-one Transposer/Transmitter. In fact, the ARK-1 is an Heterodyne tranSposer, a Regenerative Trasmitter and a transmitter in a single hardware. With the Echo cancellation option, perfect for Single Frequency Network, the SDT ARK is the answer for an easy move to the digitalization. The 3BDT ARK-1 transmitters features a built-in SFN adapter and very advanced SWDT (Software Defined Transmitters) technology, typical of this series of products, which allows implementing different modulation patterns – either digital or analog – (DVB-T/H, PAL, ASTC, NSTC, FLO, etc.) in the same hardware. Moreover, the SWDT technology allows selecting transmission modes in various ways: remotely, using a clean contact; via SNMP commands; via TCP/IP, using the Web gra-phic interface; or even via a dedicated command inserted into the transport stream. An innovative firmware allows zero error signal processing thanks to an internal 32 bit architecture.Functional interfaces are available for total remote control of the apparatus by means of serial protocols or TCP/IP ports. Thanks to the internal Web server the apparatus can be easily monitored and configured using a LAN connection and a standard Web browser. Moreover, the built-in SNMP server allows performing all types of automated remote control.

MODEL-SPECIFIC DATA

Model	Output band	Digital output power (rms) without filter DVB-T/H	Nominal analog output power (p.s.) with dual mode option
3BDT 201UB ARK-1	UHF	100 W	200 W
3BDT 201TB ARK-1	VHF (III)	100 W	200 W

Specifications and characteristics are subject to change without notice.

GENERAL

Working Class AB	3BDT 201 ARK-1
Cooling	Forced air
Local control and monitoring	Extensive front panel control
Remote control and monitoring	Local terminal on RS-232 Web based Java interface Telnet access via Ethernet SNMP
Operating temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	90-260 V AC
Dimensions	2 RU (19” rack), 400 mm

3BDT 201 ARK-1 NC

Heterodyne Transposer, Regenerative Transmitter, Transmitter, Single Frequency Echo Canceller (option) 50W ps/10W rms

> 3BDT 201 ARK-1 NC

Main Features

- UHF/VHF(III) fully agile Heterodyne Transposer, Regenerative Transmitter, Dual Mode Transmitter and Single frequency Echo Canceller (option).
- Seamless ASI switching.
- Integrated GPS Professional Receiver.
- Integrated Receiver VHF-UHF..
- Integrated SNMP management with events store.
- Integrated GBE interface.
- 45 dB Integrated Echo cancellation between Input and output.
- Output Power remotely adjustable via MIP or SNMP with high dynamics, in step of 0.1 dB.
- “Soft-start” Circuit.
- Digital linear precorrection.
- Digital non linear precorrection with automatic curves loading for each standard, channel and power levels.
- Wide Range Power Supply 90-264 V AC in fuse-free configuration (SW Standby Switch).
- 12 (with power limitations), 24, 48 V DC Optional.
- Typical MER: > 36 dB at all power levels and in all channels.
- Quick-acting protection circuits against overpowerand direct/reflected power.
- Protection against reflected power with automatic fold-back.
- Multi-Mode Operation w/software switch.
- Optional Digital Automatic Echo Canceller for SFN Gap-Filling

La serie 3BDT è oggi arricchita dalla ARK 3BDT-1, l'All-in-one ripetitore / trasmettitore. In effetti, la ARK-1 è un Heterodyne transposer, un Trasmettitore rigenerativo e un trasmettitore in un unico hardware. Con l'opzione di cancellazione di Echo, perfetta per Singole Frequency Network, l'ARK SDT è la risposta per una mossa facile alla digitalizzazione. Il trasmettitore 3BDT ARK-1 dispone di un built-in SFN adapter e di un avanzata tecnologia SWDT (Software Defined Transmitters) , tipica di questa serie di prodotti, che consente di attuare schemi di modulazione differenti - sia digitale che analogico - (DVB-T / H , PAL, ASTC, NSTC, FLO, ecc) nello stesso hardware. Inoltre, la tecnologia SWDT consente di selezionare le modalità di trasmissione in vari modi: da remoto, utilizzando un contatto pulito; via comandi SNMP; via TCP / IP, utilizzando l'interfaccia web grafica, o anche tramite un comando dedicato inserito nel flusso di trasporto. Un firmware innovativo permette l'elaborazione del segnale di errore pari a zero grazie ad un'architettura interna a 32 bit. Interfacce funzionali sono disponibili per il totale controllo remoto dell'apparato tramite protocolli seriali o porte TCP / IP. Grazie al server Web interno, l'apparecchio può essere facilmente monitorato e configurato tramite una connessione LAN e un browser standard. Inoltre, il server incorporato SNMP permette di eseguire tutti i tipi di sistemi automatizzati di controllo remoto.

The 3BDT series is today enriched by the 3BDT ARK-1, the All-in-one Transposer/Transmitter. In fact, the ARK-1 is an Heterodyne tranSposer, a Regenerative Trasmitter and a transmitter in a single hardware. With the Echo cancellation option, perfect for Single Frequency Network, the SDT ARK is the answer for an easy move to the digitalization. The 3BDT ARK-1 transmitters features a built-in SFN adapter and very advanced SWDT (Software Defined Transmitters) technology, typical of this series of products, which allows implementing different modulation patterns – either digital or analog – (DVB-T/H, PAL, ASTC, NSTC, FLO, etc.) in the same hardware. Moreover, the SWDT technology allows selecting transmission modes in various ways: remotely, using a clean contact; via SNMP commands; via TCP/IP, using the Web gra-phic interface; or even via a dedicated command inserted into the transport stream. An innovative firmware allows zero error signal processing thanks to an internal 32 bit architecture.Functional interfaces are available for total remote control of the apparatus by means of serial protocols or TCP/IP ports. Thanks to the internal Web server the apparatus can be easily monitored and configured using a LAN connection and a standard Web browser. Moreover, the built-in SNMP server allows performing all types of automated remote control.

MODEL-SPECIFIC DATA

Model	Output band	Number of amplifiers	Working class	Dimensions	Digital output power (rms) without filter (Shoulders -36 dB @ F_0 ± 4.3 MHz)	Nominal analog output power (p.s.)
					DVB-T/H	PAL
3BDT 201UB ARK-1 NC	UHF	1	AB	15 RU	50 W	200 W
3BDT 201TB ARK-1 NC	VHF (III)	1	AB	15 RU	50 W	200 W

Specifications and characteristics are subject to change without notice.

GENERAL

Working Class AB	3BDT 201 ARK-1 NC
Cooling	Forced air
Local control and monitoring	Extensive front panel control
Remote control and monitoring	Local terminal on RS-232 Web based Java interface Telnet access via Ethernet SNMP
Operating temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	90-260 V AC
Dimensions	15 RU (19” rack), 400 mm

3BDT 501 ARK-1

Heterodyne Transposer, Regenerative Transmitter, Transmitter, Single Frequency Echo Canceller (option) 750W ps/200W rms

> 3BDT 501 ARK-1

Main Features

- UHF/VHF(III) fully agile Heterodyne Transposer, Regenerative Transmitter, Dual Mode Transmitter.
- Seamless ASI switching.
- Integrated GPS Professional Receiver.
- Integrated Receiver VHF-UHF..
- Integrated SNMP management with events store.
- Integrated GBE interface.
- 45 dB Integrated Echo cancellation between Input and output.
- Output Power remotely adjustable via MIP or SNMP with high dynamics, in step of 0.1 dB.
- “Soft-start” Circuit.
- Digital linear precorrection.
- Digital non linear precorrection with automatic curves loading for each standard, channel and power levels.
- Wide Range Power Supply 90-264 V AC in fuse-free configuration (SW Standby Switch).
- Typical MER: > 36 dB at all power levels and in all channels.
- Quick-acting protection circuits against overpowerand direct/reflected power.
- Protection against reflected power with automatic fold-back.
- Multi-Mode Operation w/software switch.
- Optional Digital Automatic Echo Canceller for SFN Gap-Filling

La serie 3BDT è oggi arricchita dalla ARK 3BDT-1, l'All-in-one ripetitore / trasmettitore. In effetti, la ARK-1 è un Heterodyne transposer, un Trasmettitore rigenerativo e un trasmettitore in un unico hardware. Con l'opzione di cancellazione di Echo, perfetta per Singole Frequency Network, l'ARK SDT è la risposta per una mossa facile alla digitalizzazione. Il trasmettitore 3BDT ARK-1 dispone di un built-in SFN adapter e di un avanzata tecnologia SWDT (Software Defined Transmitters) , tipica di questa serie di prodotti, che consente di attuare schemi di modulazione differenti - sia digitale che analogico - (DVB-T / H , PAL, ASTC, NSTC, FLO, ecc) nello stesso hardware. Inoltre, la tecnologia SWDT consente di selezionare le modalità di trasmissione in vari modi: da remoto, utilizzando un contatto pulito; via comandi SNMP; via TCP / IP, utilizzando l'interfaccia web grafica, o anche tramite un comando dedicato inserito nel flusso di trasporto. Un firmware innovativo permette l'elaborazione del segnale di errore pari a zero grazie ad un'architettura interna a 32 bit. Interfacce funzionali sono disponibili per il totale controllo remoto dell'apparato tramite protocolli seriali o porte TCP / IP. Grazie al server Web interno, l'apparecchio può essere facilmente monitorato e configurato tramite una connessione LAN e un browser standard. Inoltre, il server incorporato SNMP permette di eseguire tutti i tipi di sistemi automatizzati di controllo remoto.

The 3BDT series is today enriched by the 3BDT ARK-1, the All-in-one Transposer/Transmitter. In fact, the ARK-1 is an Heterodyne tranSposer, a Regenerative Trasmitter and a transmitter in a single hardware. With the Echo cancellation option, perfect for Single Frequency Network, the SDT ARK is the answer for an easy move to the digitalization. The 3BDT ARK-1 transmitters features a built-in SFN adapter and very advanced SWDT (Software Defined Transmitters) technology, typical of this series of products, which allows implementing different modulation patterns – either digital or analog – (DVB-T/H, PAL, ASTC, NSTC, FLO, etc.) in the same hardware. Moreover, the SWDT technology allows selecting transmission modes in various ways: remotely, using a clean contact; via SNMP commands; via TCP/IP, using the Web gra-phic interface; or even via a dedicated command inserted into the transport stream. An innovative firmware allows zero error signal processing thanks to an internal 32 bit architecture.Functional interfaces are available for total remote control of the apparatus by means of serial protocols or TCP/IP ports. Thanks to the internal Web server the apparatus can be easily monitored and configured using a LAN connection and a standard Web browser. Moreover, the built-in SNMP server allows performing all types of automated remote control.

MODEL-SPECIFIC DATA

Model	Output band	Digital output power (rms) without filter DVB-T/H	Nominal analog output power (p.s.) with dual mode option
3BDT 501UB ARK-1	UHF	200 W	750 W
3BDT 501TB ARK-1	VHF (III)	200 W	750 W

Specifications and characteristics are subject to change without notice.

GENERAL

Working Class AB	3BDT 501 ARK-1
Cooling	Forced air
Local control and monitoring	Extensive front panel control
Remote control and monitoring	Local terminal on RS-232 Web based Java interface Telnet access via Ethernet SNMP
Operating temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	90-260 V AC
Dimensions	15 RU (19” rack), 400 mm

3BDT 102 ARK-1

Heterodyne Transposer, Regenerative Transmitter, Transmitter, Single Frequency Echo Canceller (option) 1500W ps/400W rms

> 3BDT 102 ARK-1

Main Features

- UHF/VHF(III) fully agile Heterodyne Transposer, Regenerative Transmitter, Dual Mode Transmitter.
- Seamless ASI switching.
- Integrated GPS Professional Receiver.
- Integrated Receiver VHF-UHF..
- Integrated SNMP management with events store.
- Integrated GBE interface.
- 45 dB Integrated Echo cancellation between Input and output.
- Output Power remotely adjustable via MIP or SNMP with high dynamics, in step of 0.1 dB.
- "Soft-start" Circuit.
- Digital linear precorrection.
- Digital non linear precorrection with automatic curves loading for each standard, channel and power levels.
- Wide Range Power Supply 90-264 V AC in fuse-free configuration (SW Standby Switch).
- Typical MER: > 36 dB at all power levels and in all channels.
- Quick-acting protection circuits against overpowerand direct/reflected power.
- Protection against reflected power with automatic fold-back.
- Multi-Mode Operation w/software switch.
- Optional Digital Automatic Echo Canceller for SFN Gap-Filling

La serie 3BDT è oggi arricchita dalla ARK 3BDT-1, l'All-in-one ripetitore / trasmettitore. In effetti, la ARK-1 è un Heterodyne transposer, un Trasmettitore rigenerativo e un trasmettitore in un unico hardware. Con l'opzione di cancellazione di Echo, perfetta per Singole Frequency Network, l'ARK SDT è la risposta per una mossa facile alla digitalizzazione. Il trasmettitore 3BDT ARK-1 dispone di un built-in SFN adapter e di un avanzata tecnologia SWDT (Software Defined Transmitters) , tipica di questa serie di prodotti, che consente di attuare schemi di modulazione differenti - sia digitale che analogico - (DVB-T / H , PAL, ASTC, NSTC, FLO, ecc) nello stesso hardware. Inoltre, la tecnologia SWDT consente di selezionare le modalità di trasmissione in vari modi: da remoto, utilizzando un contatto pulito; via comandi SNMP; via TCP / IP, utilizzando l'interfaccia web grafica, o anche tramite un comando dedicato inserito nel flusso di trasporto. Un firmware innovativo permette l'elaborazione del segnale di errore pari a zero grazie ad un'architettura interna a 32 bit. Interfacce funzionali sono disponibili per il totale controllo remoto dell'apparato tramite protocolli seriali o porte TCP / IP. Grazie al server Web interno, l'apparecchio può essere facilmente monitorato e configurato tramite una connessione LAN e un browser standard. Inoltre, il server incorporato SNMP permette di eseguire tutti i tipi di sistemi automatizzati di controllo remoto.

The 3BDT series is today enriched by the 3BDT ARK-1, the All-in-one Transposer/Transmitter. In fact, the ARK-1 is an Heterodyne tranSposer, a Regenerative Trasmitter and a transmitter in a single hardware. With the Echo cancellation option, perfect for Single Frequency Network, the SDT ARK is the answer for an easy move to the digitalization. The 3BDT ARK-1 transmitters features a built-in SFN adapter and very advanced SWDT (Software Defined Transmitters) technology, typical of this series of products, which allows implementing different modulation patterns – either digital or analog – (DVB-T/H, PAL, ASTC, NSTC, FLO, etc.) in the same hardware. Moreover, the SWDT technology allows selecting transmission modes in various ways: remotely, using a clean contact; via SNMP commands; via TCP/IP, using the Web gra-phic interface; or even via a dedicated command inserted into the transport stream. An innovative firmware allows zero error signal processing thanks to an internal 32 bit architecture.Functional interfaces are available for total remote control of the apparatus by means of serial protocols or TCP/IP ports. Thanks to the internal Web server the apparatus can be easily monitored and configured using a LAN connection and a standard Web browser. Moreover, the built-in SNMP server allows performing all types of automated remote control.

MODEL-SPECIFIC DATA

Model	Output band	Output connector	Working class	Dimensions	Digital output power (rms) without filter (Shoulders -36 dB @ F_0 ± 4.3 MHz) DVB-T/H	Nominal analog output power (p.s.) PAL
3B DT 102UB ARK-1	UHF	7/8	AB	1+5 RU	400 W	1500 W
3B DT 102UM ARK-1	UHF	7/8	AB	30 RU	400 W	1500 W
3B DT 102TB ARK-1	VHF (III)	7/8	AB	1+5 RU	400 W	1500 W
3B DT 102TM ARK-1	VHF (III)	7/8	AB	30RU	400 W	1500 W

BANDL and MMDS also available

Specifications and characteristics are subject to change without notice.

GENERAL

Working Class AB	3B DT 102 ARK-1
Cooling	Forced air
Local control and monitoring	Extensive front panel control
Remote control and monitoring	Local terminal on RS-232 Web based Java interface Telnet access via Ethernet SNMP
Operating temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	90-260 V AC

3BDT 202 ARK-1

Heterodyne Transposer, Regenerative Transmitter, Transmitter 3000W ps/750W rms

> 3BDT 202 ARK-1

Main Features

- UHF/VHF(III) fully agile Heterodyne Transposer, Regenerative Transmitter, Dual Mode Transmitter.
- Seamless ASI switching.
- Integrated GPS Professional Receiver.
- Integrated Receiver VHF-UHF..
- Integrated SNMP management with events store.
- Integrated GBE interface.
- 45 dB Integrated Echo cancellation between Input and output.
- Output Power remotely adjustable via MIP or SNMP with high dynamics, in step of 0.1 dB.
- “Soft-start” Circuit.
- Digital linear precorrection.
- Digital non linear precorrection with automatic curves loading for each standard, channel and power levels.
- Wide Range Power Supply 90-264 V AC in fuse-free configuration (SW Standby Switch).
- Typical MER: > 36 dB at all power levels and in all channels.
- Quick-acting protection circuits against overpowerand direct/reflected power.
- Protection against reflected power with automatic fold-back.
- Multi-Mode Operation w/software switch.
- Optional Digital Automatic Echo Canceller for SFN Gap-Filling

La serie 3BDT è oggi arricchita dalla ARK 3BDT-1, l'All-in-one ripetitore / trasmettitore. In effetti, la ARK-1 è un Heterodyne transposer, un Trasmettitore rigenerativo e un trasmettitore in un unico hardware. Con l'opzione di cancellazione di Echo, perfetta per Singole Frequency Network, l'ARK SDT è la risposta per una mossa facile alla digitalizzazione. Il trasmettitore 3BDT ARK-1 dispone di un built-in SFN adapter e di un avanzata tecnologia SWDT (Software Defined Transmitters) , tipica di questa serie di prodotti, che consente di attuare schemi di modulazione differenti - sia digitale che analogico - (DVB-T / H , PAL, ASTC, NSTC, FLO, ecc) nello stesso hardware. Inoltre, la tecnologia SWDT consente di selezionare le modalità di trasmissione in vari modi: da remoto, utilizzando un contatto pulito; via comandi SNMP; via TCP / IP, utilizzando l'interfaccia web grafica, o anche tramite un comando dedicato inserito nel flusso di trasporto. Un firmware innovativo permette l'elaborazione del segnale di errore pari a zero grazie ad un'architettura interna a 32 bit. Interfacce funzionali sono disponibili per il totale controllo remoto dell'apparato tramite protocolli seriali o porte TCP / IP. Grazie al server Web interno, l'apparecchio può essere facilmente monitorato e configurato tramite una connessione LAN e un browser standard. Inoltre, il server incorporato SNMP permette di eseguire tutti i tipi di sistemi automatizzati di controllo remoto.

The 3BDT series is today enriched by the 3BDT ARK-1, the All-in-one Transposer/Transmitter. In fact, the ARK-1 is an Heterodyne tranSposer, a Regenerative Trasmitter and a transmitter in a single hardware. With the Echo cancellation option, perfect for Single Frequency Network, the SDT ARK is the answer for an easy move to the digitalization. The 3BDT ARK-1 transmitters features a built-in SFN adapter and very advanced SWDT (Software Defined Transmitters) technology, typical of this series of products, which allows implementing different modulation patterns – either digital or analog – (DVB-T/H, PAL, ASTC, NSTC, FLO, etc.) in the same hardware. Moreover, the SWDT technology allows selecting transmission modes in various ways: remotely, using a clean contact; via SNMP commands; via TCP/IP, using the Web gra-phic interface; or even via a dedicated command inserted into the transport stream. An innovative firmware allows zero error signal processing thanks to an internal 32 bit architecture.Functional interfaces are available for total remote control of the apparatus by means of serial protocols or TCP/IP ports. Thanks to the internal Web server the apparatus can be easily monitored and configured using a LAN connection and a standard Web browser. Moreover, the built-in SNMP server allows performing all types of automated remote control.

MODEL-SPECIFIC DATA

Model	Output band	Output connector	Working class	Dimensions	Digital output power (rms) without filter (Shoulders -36 dB @ F_0 ± 4.3 MHz) DVB-T/H	Nominal analog output power (p.s.) PAL
3B DT 202UB ARK-1	UHF	7/8	AB	1+5 RU	750 W	3000 W
3B DT 202UM ARK-1	UHF	7/8	AB	30 RU	750 W	3000 W
3B DT 202TB ARK-1	VHF (III)	7/8	AB	1+5 RU	750 W	3000 W
3B DT 202TM ARK-1	VHF (III)	7/8	AB	30RU	750 W	3000 W

BANDL and MMDS also available

Specifications and characteristics are subject to change without notice.

GENERAL

Working Class AB	3B DT 202 ARK-1
Cooling	Forced air
Local control and monitoring	Extensive front panel control
Remote control and monitoring	Local terminal on RS-232 Web based Java interface Telnet access via Ethernet SNMP
Operating temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	90-260 V AC

3BDT 502 ARK-1

Heterodyne Transposer, Regenerative Transmitter, Transmitter 6000W ps/1500W rms

> 3BDT 502 ARK-1
Version with Dual Driver Option

> 3BDT 502 W ARK-1 Liquid Cooled
Version with Dual Driver Option

Main Features

- UHF/VHF(III) fully agile Heterodyne Transposer, Regenerative Transmitter, Dual Mode Transmitter.
- Seamless ASI switching.
- Integrated GPS Professional Receiver.
- Integrated Receiver VHF-UHF..
- Integrated SNMP management with events store.
- Integrated GBE interface.
- 45 dB Integrated Echo cancellation between Input and output.
- Output Power remotely adjustable via MIP or SNMP with high dynamics, in step of 0.1 dB.
- "Soft-start" Circuit.
- Digital linear precorrection.
- Digital non linear precorrection with automatic curves loading for each standard, channel and power levels.
- Wide Range Power Supply 90-264 V AC in fuse-free configuration (SW Standby Switch).
- Typical MER: > 36 dB at all power levels and in all channels.
- Quick-acting protection circuits against overpowerand direct/reflected power.
- Protection against reflected power with automatic fold-back.
- Multi-Mode Operation w/software switch.
- Optional Digital Automatic Echo Canceller for SFN Gap-Filling

La serie 3BDT è oggi arricchita dalla ARK 3BDT-1, l'All-in-one ripetitore / trasmettitore. In effetti, la ARK-1 è un Heterodyne transposer, un Trasmettitore rigenerativo e un trasmettitore in un unico hardware. Con l'opzione di cancellazione di Echo, perfetta per Singole Frequency Network, l'ARK SDT è la risposta per una mossa facile alla digitalizzazione. Il trasmettitore 3BDT ARK-1 dispone di un built-in SFN adapter e di un avanzata tecnologia SWDT (Software Defined Transmitters) , tipica di questa serie di prodotti, che consente di attuare schemi di modulazione differenti - sia digitale che analogico - (DVB-T / H , PAL, ASTC, NSTC, FLO, ecc) nello stesso hardware. Inoltre, la tecnologia SWDT consente di selezionare le modalità di trasmissione in vari modi: da remoto, utilizzando un contatto pulito; via comandi SNMP; via TCP / IP, utilizzando l'interfaccia web grafica, o anche tramite un comando dedicato inserito nel flusso di trasporto. Un firmware innovativo permette l'elaborazione del segnale di errore pari a zero grazie ad un'architettura interna a 32 bit. Interfacce funzionali sono disponibili per il totale controllo remoto dell'apparato tramite protocolli seriali o porte TCP / IP. Grazie al server Web interno, l'apparecchio può essere facilmente monitorato e configurato tramite una connessione LAN e un browser standard. Inoltre, il server incorporato SNMP permette di eseguire tutti i tipi di sistemi automatizzati di controllo remoto.

The 3BDT series is today enriched by the 3BDT ARK-1, the All-in-one Transposer/Transmitter. In fact, the ARK-1 is an Heterodyne tranSposer, a Regenerative Trasmitter and a transmitter in a single hardware. With the Echo cancellation option, perfect for Single Frequency Network, the SDT ARK is the answer for an easy move to the digitalization. The 3BDT ARK-1 transmitters features a built-in SFN adapter and very advanced SWDT (Software Defined Transmitters) technology, typical of this series of products, which allows implementing different modulation patterns – either digital or analog – (DVB-T/H, PAL, ASTC, NSTC, FLO, etc.) in the same hardware. Moreover, the SWDT technology allows selecting transmission modes in various ways: remotely, using a clean contact; via SNMP commands; via TCP/IP, using the Web gra-phic interface; or even via a dedicated command inserted into the transport stream. An innovative firmware allows zero error signal processing thanks to an internal 32 bit architecture.Functional interfaces are available for total remote control of the apparatus by means of serial protocols or TCP/IP ports. Thanks to the internal Web server the apparatus can be easily monitored and configured using a LAN connection and a standard Web browser. Moreover, the built-in SNMP server allows performing all types of automated remote control.

MODEL-SPECIFIC DATA

Model	Output band	Number of amplifiers	Working class	Dimensions	Digital output power (rms) without filter (Shoulders -36 dB @ F_0 ± 4.3 MHz) DVB-T/H	Nominal analog output power (p.s.) PAL
3B DT 502UB ARK-1	UHF	2	AB	30 RU	1500 W	6000 W
3B DT 502UM ARK-1	UHF	4	AB	40 RU	1500 W	6000 W
3BDT 502UB-W ARK-1	UHF	2	AB	40 RU	1500 W	6000 W
3B DT 502TB ARK-1	VHF (III)	2	AB	30 RU	1500 W	6000 W
3B DT 502TM ARK-1	VHF (III)	4	AB	40 RU	1500 W	6000 W
3BDT 502TB-W ARK-1	VHF (III)	2	AB	40 RU	1500 W	6000 W

BANDL and MMDS also available

Specifications and characteristics are subject to change without notice.

GENERAL

Working Class AB	3BDT 502 ARK-1
Cooling	Forced air or Liquid Cooled
Local control and monitoring	Extensive front panel control
Remote control and monitoring	Local terminal on RS-232 Web based Java interface Telnet access via Ethernet SNMP
Operating temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	380 V AC (3 ph.)

3BDT 532 ARK-1

Heterodyne Transposer, Regenerative Transmitter, Transmitter 9000W ps/2250W rms

> 3BDT 532 ARK-1

> 3BDT 532 ARK-1 Liquid Cooled Version with Dual Driver Option

Main Features

- UHF/VHF(III) fully agile Heterodyne Transposer, Regenerative Transmitter, Dual Mode Transmitter.
- Seamless ASI switching.
- Integrated GPS Professional Receiver.
- Integrated Receiver VHF-UHF..
- Integrated SNMP management with events store.
- Integrated GBE interface.
- 45 dB Integrated Echo cancellation between Input and output.
- Output Power remotely adjustable via MIP or SNMP with high dynamics, in step of 0.1 dB.
- "Soft-start" Circuit.
- Digital linear precorrection.
- Digital non linear precorrection with automatic curves loading for each standard, channel and power levels.
- Wide Range Power Supply 90-264 V AC in fuse-free configuration (SW Standby Switch).
- Typical MER: > 36 dB at all power levels and in all channels.
- Quick-acting protection circuits against overpowerand direct/reflected power.
- Protection against reflected power with automatic fold-back.
- Multi-Mode Operation w/software switch.
- Optional Digital Automatic Echo Canceller for SFN Gap-Filling

La serie 3BDT è oggi arricchita dalla ARK 3BDT-1, l'All-in-one ripetitore / trasmettitore. In effetti, la ARK-1 è un Heterodyne transposer, un Trasmettitore rigenerativo e un trasmettitore in un unico hardware. Con l'opzione di cancellazione di Echo, perfetta per Singole Frequency Network, l'ARK SDT è la risposta per una mossa facile alla digitalizzazione. Il trasmettitore 3BDT ARK-1 dispone di un built-in SFN adapter e di un avanzata tecnologia SWDT (Software Defined Transmitters) , tipica di questa serie di prodotti, che consente di attuare schemi di modulazione differenti - sia digitale che analogico - (DVB-T / H , PAL, ASTC, NSTC, FLO, ecc) nello stesso hardware. Inoltre, la tecnologia SWDT consente di selezionare le modalità di trasmissione in vari modi: da remoto, utilizzando un contatto pulito; via comandi SNMP; via TCP / IP, utilizzando l'interfaccia web grafica, o anche tramite un comando dedicato inserito nel flusso di trasporto. Un firmware innovativo permette l'elaborazione del segnale di errore pari a zero grazie ad un'architettura interna a 32 bit. Interfacce funzionali sono disponibili per il totale controllo remoto dell'apparato tramite protocolli seriali o porte TCP / IP. Grazie al server Web interno, l'apparecchio può essere facilmente monitorato e configurato tramite una connessione LAN e un browser standard. Inoltre, il server incorporato SNMP permette di eseguire tutti i tipi di sistemi automatizzati di controllo remoto.

The 3BDT series is today enriched by the 3BDT ARK-1, the All-in-one Transposer/Transmitter. In fact, the ARK-1 is an Heterodyne tranSposer, a Regenerative Trasmitter and a transmitter in a single hardware. With the Echo cancellation option, perfect for Single Frequency Network, the SDT ARK is the answer for an easy move to the digitalization. The 3BDT ARK-1 transmitters features a built-in SFN adapter and very advanced SWDT (Software Defined Transmitters) technology, typical of this series of products, which allows implementing different modulation patterns – either digital or analog – (DVB-T/H, PAL, ASTC, NSTC, FLO, etc.) in the same hardware. Moreover, the SWDT technology allows selecting transmission modes in various ways: remotely, using a clean contact; via SNMP commands; via TCP/IP, using the Web gra-phic interface; or even via a dedicated command inserted into the transport stream. An innovative firmware allows zero error signal processing thanks to an internal 32 bit architecture.Functional interfaces are available for total remote control of the apparatus by means of serial protocols or TCP/IP ports. Thanks to the internal Web server the apparatus can be easily monitored and configured using a LAN connection and a standard Web browser. Moreover, the built-in SNMP server allows performing all types of automated remote control.

MODEL-SPECIFIC DATA

Model	Output band	Number of amplifiers	Working class	Dimensions	Digital output power (rms) without filter (Shoulders -36 dB @ F_0 ± 4.3 MHz)	Nominal analog output power (p.s.)
					DVB-T/H	PAL
3B DT 532UB MM	UHF	3	AB	40 RU	2250 W	9000 W
3BDT 532UB-W MM	UHF	3	AB	40 RU	2250 W	9000 W
3B DT 532TB MM	VHF (III)	3	AB	40 RU	2250 W	9000 W
3BDT 532TB-W MM	VHF (III)	3	AB	40 RU	2250 W	9000 W

BANDL and MMDS also available

Specifications and characteristics are subject to change without notice.

GENERAL

Working Class AB	3BDT 532 MM
Cooling	Forced air or Liquid Cooled
Local control and monitoring	Extensive front panel control
Remote control and monitoring	Local terminal on RS-232 Web based Java interface Telnet access via Ethernet SNMP
Operating temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	380 V AC (3 ph.)

3BDT 103 ARK-1

Heterodyne Transposer, Regenerative Transmitter, Transmitter 12000W ps/3000W rms

> 3BDT 103 ARK-1

> 3BDT 103 W ARK-1 Liquid Cooled Version with Dual Driver Option

Main Features

- UHF/VHF(III) fully agile Heterodyne Transposer, Regenerative Transmitter, Dual Mode Transmitter.
- Seamless ASI switching.
- Integrated GPS Professional Receiver.
- Integrated Receiver VHF-UHF..
- Integrated SNMP management with events store.
- Integrated GBE interface.
- 45 dB Integrated Echo cancellation between Input and output.
- Output Power remotely adjustable via MIP or SNMP with high dynamics, in step of 0.1 dB.
- "Soft-start" Circuit.
- Digital linear precorrection.
- Digital non linear precorrection with automatic curves loading for each standard, channel and power levels.
- Wide Range Power Supply 90-264 V AC in fuse-free configuration (SW Standby Switch).
- Typical MER: > 36 dB at all power levels and in all channels.
- Quick-acting protection circuits against overpowerand direct/reflected power.
- Protection against reflected power with automatic fold-back.
- Multi-Mode Operation w/software switch.
- Optional Digital Automatic Echo Canceller for SFN Gap-Filling

La serie 3BDT è oggi arricchita dalla ARK 3BDT-1, l'All-in-one ripetitore / trasmettitore. In effetti, la ARK-1 è un Heterodyne transposer, un Trasmettitore rigenerativo e un trasmettitore in un unico hardware. Con l'opzione di cancellazione di Echo, perfetta per Singole Frequency Network, l'ARK SDT è la risposta per una mossa facile alla digitalizzazione. Il trasmettitore 3BDT ARK-1 dispone di un built-in SFN adapter e di un avanzata tecnologia SWDT (Software Defined Transmitters) , tipica di questa serie di prodotti, che consente di attuare schemi di modulazione differenti - sia digitale che analogico - (DVB-T / H , PAL, ASTC, NSTC, FLO, ecc) nello stesso hardware. Inoltre, la tecnologia SWDT consente di selezionare le modalità di trasmissione in vari modi: da remoto, utilizzando un contatto pulito; via comandi SNMP; via TCP / IP, utilizzando l'interfaccia web grafica, o anche tramite un comando dedicato inserito nel flusso di trasporto. Un firmware innovativo permette l'elaborazione del segnale di errore pari a zero grazie ad un'architettura interna a 32 bit. Interfacce funzionali sono disponibili per il totale controllo remoto dell'apparato tramite protocolli seriali o porte TCP / IP. Grazie al server Web interno, l'apparecchio può essere facilmente monitorato e configurato tramite una connessione LAN e un browser standard. Inoltre, il server incorporato SNMP permette di eseguire tutti i tipi di sistemi automatizzati di controllo remoto.

The 3BDT series is today enriched by the 3BDT ARK-1, the All-in-one Transposer/Transmitter. In fact, the ARK-1 is an Heterodyne tranSposer, a Regenerative Trasmitter and a transmitter in a single hardware. With the Echo cancellation option, perfect for Single Frequency Network, the SDT ARK is the answer for an easy move to the digitalization. The 3BDT ARK-1 transmitters features a built-in SFN adapter and very advanced SWDT (Software Defined Transmitters) technology, typical of this series of products, which allows implementing different modulation patterns – either digital or analog – (DVB-T/H, PAL, ASTC, NSTC, FLO, etc.) in the same hardware. Moreover, the SWDT technology allows selecting transmission modes in various ways: remotely, using a clean contact; via SNMP commands; via TCP/IP, using the Web gra-phic interface; or even via a dedicated command inserted into the transport stream. An innovative firmware allows zero error signal processing thanks to an internal 32 bit architecture.Functional interfaces are available for total remote control of the apparatus by means of serial protocols or TCP/IP ports. Thanks to the internal Web server the apparatus can be easily monitored and configured using a LAN connection and a standard Web browser. Moreover, the built-in SNMP server allows performing all types of automated remote control.

MODEL-SPECIFIC DATA

Model	Output band	Number of amplifiers	Working class	Dimensions	Digital output power (rms) without filter (Shoulders -36 dB @ F_0 ± 4.3 MHz)	Nominal analog output power (p.s.)
					DVB-T/H	PAL
3B DT 103UM ARK-1	UHF	4	AB	40 RU	3000 W	12000 W
3BDT 103UM-W ARK1	UHF	4	AB	40 RU	3000 W	12000 W
3B DT 103TM ARK-1	VHF (III)	4	AB	40 RU	3000 W	12000 W
3BDT 103TM-W ARK-1	VHF (III)	4	AB	40 RU	3000 W	12000 W

BANDL and MMDS also available

Specifications and characteristics are subject to change without notice.

GENERAL

Working Class AB	3BDT 103 ARK-1
Cooling	Forced air or Liquid Cooled
Local control and monitoring	Extensive front panel control
Remote control and monitoring	Local terminal on RS-232 Web based Java interface Telnet access via Ethernet SNMP
Operating temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	380 V AC (3 ph.)

3BDT 133 ARK-1

Heterodyne Transposer, Regenerative Transmitter, Transmitter 18000W ps/4500W rms

> 3BDT 133UM ARK-1
with Dual Driver Option

> 3BDT 133UM-W ARK-1
Liquid Cooled Version
with Dual Driver Option

Main Features

- UHF/VHF(III) fully agile Heterodyne Transposer, Regenerative Transmitter, Dual Mode Transmitter.
- Seamless ASI switching.
- Integrated GPS Professional Receiver.
- Integrated Receiver VHF-UHF..
- Integrated SNMP management with events store.
- Integrated GBE interface.
- 45 dB Integrated Echo cancellation between Input and output.
- Output Power remotely adjustable via MIP or SNMP with high dynamics, in step of 0.1 dB.
- "Soft-start" Circuit.
- Digital linear precorrection.
- Digital non linear precorrection with automatic curves loading for each standard, channel and power levels.
- Wide Range Power Supply 90-264 V AC in fuse-free configuration (SW Standby Switch).
- Typical MER: > 36 dB at all power levels and in all channels.
- Quick-acting protection circuits against overpowerand direct/reflected power.
- Protection against reflected power with automatic fold-back.
- Multi-Mode Operation w/software switch.
- Optional Digital Automatic Echo Canceller for SFN Gap-Filling

La serie 3BDT è oggi arricchita dalla ARK 3BDT-1, l'All-in-one ripetitore / trasmettitore. In effetti, la ARK-1 è un Heterodyne transposer, un Trasmettitore rigenerativo e un trasmettitore in un unico hardware. Con l'opzione di cancellazione di Echo, perfetta per Singole Frequency Network, l'ARK SDT è la risposta per una mossa facile alla digitalizzazione. Il trasmettitore 3BDT ARK-1 dispone di un built-in SFN adapter e di un avanzata tecnologia SWDT (Software Defined Transmitters) , tipica di questa serie di prodotti, che consente di attuare schemi di modulazione differenti - sia digitale che analogico - (DVB-T / H , PAL, ASTC, NSTC, FLO, ecc) nello stesso hardware. Inoltre, la tecnologia SWDT consente di selezionare le modalità di trasmissione in vari modi: da remoto, utilizzando un contatto pulito; via comandi SNMP; via TCP / IP, utilizzando l'interfaccia web grafica, o anche tramite un comando dedicato inserito nel flusso di trasporto. Un firmware innovativo permette l'elaborazione del segnale di errore pari a zero grazie ad un'architettura interna a 32 bit. Interfacce funzionali sono disponibili per il totale controllo remoto dell'apparato tramite protocolli seriali o porte TCP / IP. Grazie al server Web interno, l'apparecchio può essere facilmente monitorato e configurato tramite una connessione LAN e un browser standard. Inoltre, il server incorporato SNMP permette di eseguire tutti i tipi di sistemi automatizzati di controllo remoto.

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MODEL-SPECIFIC DATA

Model	Output band	Number of amplifiers	Working class	Dimensions	Digital output power (rms) without filter (Shoulders -36 dB @ F_0 ± 4.3 MHz) DVB-T/H	Nominal analog output power (p.s.) PAL
3B DT 133UM ARK-1	UHF	6	AB	2 x 40 RU	4500 W	18000 W
3BDT 133UM-W ARK1	UHF	6	AB	2 x 40 RU	4500 W	18000 W
3B DT 133TM ARK-1	VHF (III)	6	AB	2 x 40 RU	4500 W	18000 W
3BDT 133TM-W ARK-1	VHF (III)	6	AB	2 x 40 RU	4500 W	18000 W

BANDL and MMDS also available

Specifications and characteristics are subject to change without notice.

GENERAL

Working Class AB	3BDT 133 ARK-1
Cooling	Forced air or Liquid Cooled
Local control and monitoring	Extensive front panel control
Remote control and monitoring	Local terminal on RS-232 Web based Java interface Telnet access via Ethernet SNMP
Operating temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	380 V AC (3 ph.)

3BDT 203 ARK-1

Heterodyne Transposer, Regenerative Transmitter, Transmitter 24000W ps/6000W rms

> 3BDT 203 ARK-1
With Dual Driver Option

> 3BDT 203 W ARK-1
Liquid Cooled Version
With Dual Driver Option

Main Features

- UHF/VHF(III) fully agile Heterodyne Transposer, Regenerative Transmitter, Dual Mode Transmitter.
- Seamless ASI switching.
- Integrated GPS Professional Receiver.
- Integrated Receiver VHF-UHF..
- Integrated SNMP management with events store.
- Integrated GBE interface.
- 45 dB Integrated Echo cancellation between Input and output.
- Output Power remotely adjustable via MIP or SNMP with high dynamics, in step of 0.1 dB.
- “Soft-start” Circuit.
- Digital linear precorrection.
- Digital non linear precorrection with automatic curves loading for each standard, channel and power levels.
- Wide Range Power Supply 90-264 V AC in fuse-free configuration (SW Standby Switch).
- Typical MER: > 36 dB at all power levels and in all channels.
- Quick-acting protection circuits against overpowerand direct/reflected power.
- Protection against reflected power with automatic fold-back.
- Multi-Mode Operation w/software switch.
- Optional Digital Automatic Echo Canceller for SFN Gap-Filling

La serie 3BDT è oggi arricchita dalla ARK 3BDT-1, l'All-in-one ripetitore / trasmettitore. In effetti, la ARK-1 è un Heterodyne transposer, un Trasmettitore rigenerativo e un trasmettitore in un unico hardware. Con l'opzione di cancellazione di Echo, perfetta per Singole Frequency Network, l'ARK SDT è la risposta per una mossa facile alla digitalizzazione. Il trasmettitore 3BDT ARK-1 dispone di un built-in SFN adapter e di un avanzata tecnologia SWDT (Software Defined Transmitters) , tipica di questa serie di prodotti, che consente di attuare schemi di modulazione differenti - sia digitale che analogico - (DVB-T / H , PAL, ASTC, NSTC, FLO, ecc) nello stesso hardware. Inoltre, la tecnologia SWDT consente di selezionare le modalità di trasmissione in vari modi: da remoto, utilizzando un contatto pulito; via comandi SNMP; via TCP / IP, utilizzando l'interfaccia web grafica, o anche tramite un comando dedicato inserito nel flusso di trasporto. Un firmware innovativo permette l'elaborazione del segnale di errore pari a zero grazie ad un'architettura interna a 32 bit. Interfacce funzionali sono disponibili per il totale controllo remoto dell'apparato tramite protocolli seriali o porte TCP / IP. Grazie al server Web interno, l'apparecchio può essere facilmente monitorato e configurato tramite una connessione LAN e un browser standard. Inoltre, il server incorporato SNMP permette di eseguire tutti i tipi di sistemi automatizzati di controllo remoto.

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MODEL-SPECIFIC DATA

Model	Output band	Number of amplifiers	Working class	Dimensions	Digital output power (rms) without filter (Shoulders -36 dB @ F_0 ± 4.3 MHz) DVB-T/H	Nominal analog output power (p.s.) PAL
3BDT 203UM ARK-1	UHF	8	AB	2 X 40 RU	6000 W	24000 W
3BDT 203UM-W ARK-1	UHF	8	AB	2 X 40 RU	6000 W	24000 W
3BDT 203TM ARK-1	VHF (III)	8	AB	2 X 40 RU	6000 W	24000 W
3BDT 203TM-W ARK-1	VHF (III)	8	AB	2 X 40 RU	6000 W	24000 W

BANDL and MMDS also available

Specifications and characteristics are subject to change without notice.

GENERAL

Working Class AB	3BDT 203 ARK-1
Cooling	Forced air or Liquid Cooled
Local control and monitoring	Extensive front panel control
Remote control and monitoring	Local terminal on RS-232 Web based Java interface Telnet access via Ethernet SNMP
Operating temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	380 V AC (3 ph.)

3BDT ARK-1 DVB-T2 Series

Latest Generation Digital Transmitter **DVB-T2**

3BDT Series ARK-1 From 2,5W rms up to 6000W rms

3BDT Series ARK-1DVB-T2 Version

Fully ETSI compliant DVB-T2 Transmitter

3BDT 200UB ARK-1

2,5W rms UHF DVB-T2 Digital Transmitter

> 3BDT 200 ARK-1 DVB-T2

Main Features

ARK HP Driver System is a DVB-T2 compliant Television Modulator and Driver for high power exciters.

The system is capable of:

1. Receiving an input MPEG-2 Transport Stream over ASI;
2. Modulating the input signal in compliance with ETSI EN-302 755 (DVB-T2) stan dard;
3. Transmitting DVB-T2 RF output on UHF channels.

The system is composed by two 3BDTx_ARK1 devices:

1. A DVB-T2 compliant Modulator - 3BDTx_ARK1 T2 Modulator - that receives a MPEG-2 TS over ASI, modulates it in compliance with ETSI standard and trans mits the base-band data over a Gigabit Ethernet (GbE) network;
2. A Driver - 3BDTx_ARK1 High Power T2 Driver - suitable to pilot high power sys tems, that receives the base-band data from the GbE port and transmits it on a RF output providing also linear and non-linear pre-correction.

MODULATORE ARK1-T2M

Il modulatore ARK1 T2 è un modulatore DVB-T2 compatibile con ETSI EN-302 755. Il Modulatore DVB-T2 riceve, oltre ASI, un ingresso MPEG-2 Transport Stream, modula il segnale di ingresso in conformità con l'ETSI EN 302 755-standard e trasmette la base-dati su Gigabit Ethernet interface.

Caratteristiche

Basato su un Software Defined Technology (SWDT), Il modulatore 3BDTx_ARK1 T2 permette la definizione di diverse modalità operative sulla stessa piattaforma hardware. Per fini di prova, allo stato dell'arte il 3BDTx_ARK1 T2 può essere un modulatore DVB-T2 o un modulatore DVB-T / H.

Il modulatore DVB-T / H riceve, in ASI un input MPEG-2 Transport Stream, modula il segnale di ingresso in conformità con l'ETSI EN 300 744-standard e trasmette la base-dati su Gigabit Ethernet interface.

MODULATOR ARK1-T2M

ARK1 T2 Modulator is a DVB-T2 Modulator compliant with ETSI EN-302 755. The DVB-T2 Modulator receives, over ASI, an input MPEG-2 Transport Stream, modulates the input signal in compliance with ETSI EN-302 755 standard and transmits the base-band data over Gigabit Ethernet interface.

Option Features

Based on Software Defined Technology (SWDT), 3BDTx_ARK1 T2 Modulator allows the definition of different operative modes on the same hardware platform.

For testing purposes, at the state of the art 3BDTx_ARK1 T2 Modula-tor can be either a DVB-T2 Modulator or a DVB-T/H Modulator.

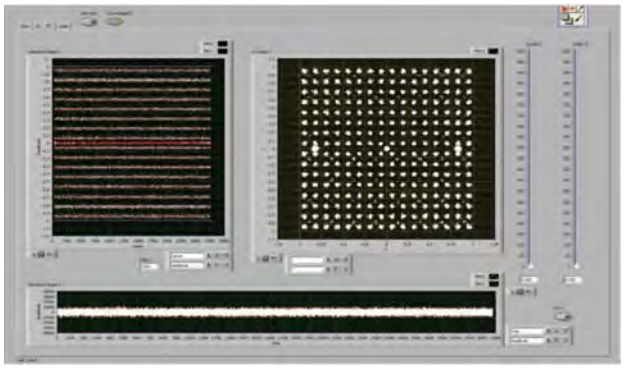
The DVB-T/H Modulator receives, over ASI, an input MPEG-2 Transport Stream, modulates the input signal in compliance with ETSI EN-300 744 standard and transmits the base-band data over Gigabit Ethernet interface.

DRIVER 3BDTx_ARK1 High Power T2

3BDTx_ARK1 High Power T2 Driver is a Multi-standard Television Transmitter.

At the state of the art 3BDTx_ARK1 is:

- DVB-T/H Transmitter compliant with ETSI EN-300 744;



- DVB-T2 Transmitter compliant with ETSI EN-302 755.

The High Power T2 Driver receives the base-band data, modulated by the 3BDTx_ARK1-T2 Modulator, over Gigabit Ethernet interface and re-transmits DVB-T/H and DVB-T2 compliant RF sibnals allowing software setting of output channel and linear and non linear pre-correction.

A brief description of the main features and potentialities follows:
- Agile UHF output Up-converter (from 470 MHz up to 862 MHz).
- Base-band input data over Gigabit Ethernet interface.
- Modulus/Group Delay Software Precorrection.
- AM/PM Software Pre-correction.

DVB-T2, which represents the state-of-the-art in digital terrestrial broadcasting, is a second generation transmission system for digital terrestrial television and it has been ratified just few months ago. The specification introduces the latest modulation and coding techniques to enable highly efficient use of valuable terrestrial spectrum for the delivery of audio, video and data services to fixed, portable and mobile devices.

Building on the foundations of the successful DVB-T system, DVB-T2 guarantees 30% to 50% increase in capacity in equivalent reception conditions. Broadcasters deploying DVB-T2 will be able to roll out new multiplexes that could offer multichannel HDTV services and create innovative new datacasting opportunities.

DVB-T2 uses OFDM (orthogonal frequency division multiplex) modulation to deliver a robust signal and offers a range of different modes making it highly flexible. It employs the same LDPC (Low Density Parity Check) error correcting codes used in DVB-S2 for excellent performance in the presence of high noise levels and interference. A significant number of highly innovative features such as Physical Layer Pipes, support of Multiple-Input-Single-Output (MISO) and Rotated Constellations are also included. DVB-T2 has been defined so that the standard can be enhanced in the future in a backwards compatible manner through the use of Future Extension Frames.

The specification has already been submitted to ETSI (European Telecommunications Standards Institute) for standardisation in the •ETSI EN-300 744, and ETSI EN-300 755.

ALSO AVAILABLE

DEMODULATOR SFT-DEM100

The 3BFT-DEM100 is a standalone executable tool, with a LabVIEW based Graphical User Interface (GUI).
The 3BFT-DEM100 is a DVB-T2 digital demodulator. Its purpose is to demodulate a DVB-T2 Digitalized IF Signal, and to analyze it, giving all the information needed to evaluate the characteristics of that signal, and the performances of the modulator as a consequence.

GRABBER 3BDTx_ARK1 T2

Developed on 3BDTx_ARK1 hardware platform, the T2 Grabber is a device capable of receiving RF signals and of retransmitting them as I/Q data over RTP (Refer to Appendix A).
3BDTx_ARK1 T2 Grabber receives DVB-T2 compliant RF signals on UHF channels and performs an agile down-conversion to 36MHz IF. After an IF Digital Down-conversion, passing through a filter chain, I/Q data are stored into the DDR internal memory.
I/Q data are coded in two 2-bytes numbers. Two consecutive numbers (4 bytes) represent the Real and Imaginary part of a complex number. Each RTP packet carries 256 samples.
Each RTP packet data is addressed into the DDR memory as to make it possible to retransmit lost packets at each resending request.

GENERAL

Working Class A	3BDT 200UB ARK-1
Cooling	Forced air
Local control and monitoring	Extensive front panel control Local terminal on RS-232
Remote control and monitoring	Web based Java interface Telnet access via Ethernet SNMP
Operating temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	90-260 V AC
Dimensions	1+1 RU (19" rack), 400 mm

MODEL-SPECIFIC DATA

Model	Output band	Digital output power (rms) without filter DVB-T/H
3BDT 200UB MM	UHF	10 W

Specifications and characteristics are subject to change without notice.

3BDT 500UB ARK-1

10W rms UHF DVB-T2 Digital Transmitter

> 3BDT 500 ARK-1 DVB-T2

Main Features

ARK HP Driver System is a DVB-T2 compliant Television Modulator and Driver for high power exciters.

The system is capable of:

1. Receiving an input MPEG-2 Transport Stream over ASI;
2. Modulating the input signal in compliance with ETSI EN-302 755 (DVB-T2) stan dard;
3. Transmitting DVB-T2 RF output on UHF channels.

The system is composed by two 3BDTx_ARK1 devices:

1. A DVB-T2 compliant Modulator - 3BDTx_ARK1 T2 Modulator - that receives a MPEG-2 TS over ASI, modulates it in compliance with ETSI standard and trans mits the base-band data over a Gigabit Ethernet (GbE) network;
2. A Driver - 3BDTx_ARK1 High Power T2 Driver - suitable to pilot high power sys tems, that receives the base-band data from the GbE port and transmits it on a RF output providing also linear and non-linear pre-correction.

MODULATORE ARK1-T2M

Il modulatore ARK1 T2 è un modulatore DVB-T2 compatibile con ETSI EN-302 755. Il Modulatore DVB-T2 riceve, oltre ASI, un ingresso MPEG-2 Transport Stream, modula il segnale di ingresso in conformità con l'ETSI EN 302 755-standard e trasmette la base-dati su Gigabit Ethernet interface.

Caratteristiche

Basato su un Software Defined Technology (SWDT), Il modulatore 3BDTx_ARK1 T2 permette la definizione di diverse modalità operative sulla stessa piattaforma hardware. Per fini di prova, allo stato dell'arte il 3BDTx_ARK1 T2 può essere un modulatore DVB-T2 o un modulatore DVB-T / H.

Il modulatore DVB-T / H riceve, in ASI un input MPEG-2 Transport Stream, modula il segnale di ingresso in conformità con l'ETSI EN 300 744-standard e trasmette la base-dati su Gigabit Ethernet interface.

MODULATOR ARK1-T2M

ARK1 T2 Modulator is a DVB-T2 Modulator compliant with ETSI EN-302 755. The DVB-T2 Modulator receives, over ASI, an input MPEG-2 Transport Stream, modulates the input signal in compliance with ETSI EN-302 755 standard and transmits the base-band data over Gigabit Ethernet interface.

Option Features

Based on Software Defined Technology (SWDT), 3BDTx_ARK1 T2 Modulator allows the definition of different operative modes on the same hardware platform.

For testing purposes, at the state of the art 3BDTx_ARK1 T2 Modula-tor can be either a DVB-T2 Modulator or a DVB-T/H Modulator.

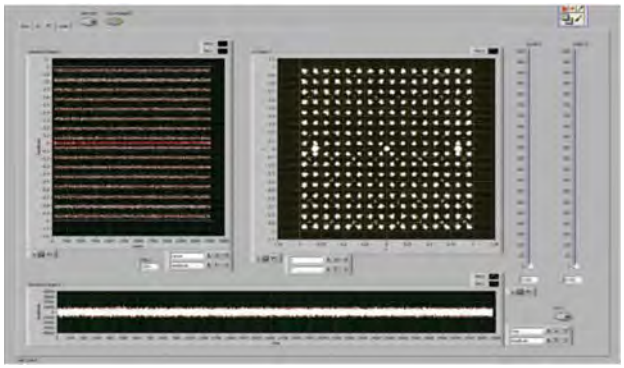
The DVB-T/H Modulator receives, over ASI, an input MPEG-2 Transport Stream, modulates the input signal in compliance with ETSI EN-300 744 standard and transmits the base-band data over Gigabit Ethernet interface.

DRIVER 3BDTx_ARK1 High Power T2

3BDTx_ARK1 High Power T2 Driver is a Multi-standard Television Transmitter.

At the state of the art 3BDTx_ARK1 is:

- DVB-T/H Transmitter compliant with ETSI EN-300 744;



- DVB-T2 Transmitter compliant with ETSI EN-302 755.

The High Power T2 Driver receives the base-band data, modulated by the 3BDTx_ARK1-T2 Modulator, over Gigabit Ethernet interface and re-transmits DVB-T/H and DVB-T2 compliant RF sibnals allowing software setting of output channel and linear and non linear pre-correction.

A brief description of the main features and potentialities follows:
- Agile UHF output Up-converter (from 470 MHz up to 862 MHz).
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Building on the foundations of the successful DVB-T system, DVB-T2 guarantees 30% to 50% increase in capacity in equivalent reception conditions. Broadcasters deploying DVB-T2 will be able to roll out new multiplexes that could offer multichannel HDTV services and create innovative new datacasting opportunities.

DVB-T2 uses OFDM (orthogonal frequency division multiplex) modulation to deliver a robust signal and offers a range of different modes making it highly flexible. It employs the same LDPC (Low Density Parity Check) error correcting codes used in DVB-S2 for excellent performance in the presence of high noise levels and interference. A significant number of highly innovative features such as Physical Layer Pipes, support of Multiple-Input-Single-Output (MISO) and Rotated Constellations are also included. DVB-T2 has been defined so that the standard can be enhanced in the future in a backwards compatible manner through the use of Future Extension Frames.

The specification has already been submitted to ETSI (European Telecommunications Standards Institute) for standardisation in the •ETSI EN-300 744, and ETSI EN-300 755.

ALSO AVAILABLE

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GRABBER 3BDTx_ARK1 T2

Developed on 3BDTx_ARK1 hardware platform, the T2 Grabber is a device capable of receiving RF signals and of retransmitting them as I/Q data over RTP (Refer to Appendix A).
3BDTx_ARK1 T2 Grabber receives DVB-T2 compliant RF signals on UHF channels and performs an agile down-conversion to 36MHz IF. After an IF Digital Down-conversion, passing through a filter chain, I/Q data are stored into the DDR internal memory.
I/Q data are coded in two 2-bytes numbers. Two consecutive numbers (4 bytes) represent the Real and Imaginary part of a complex number. Each RTP packet carries 256 samples.
Each RTP packet data is addressed into the DDR memory as to make it possible to retransmit lost packets at each resending request.

GENERAL

Working Class AB	3B DT 500UB ARK-1
Cooling	Forced air
Local control and monitoring	Extensive front panel control Local terminal on RS-232
Remote control and monitoring	Web based Java interface Telnet access via Ethernet SNMP
Operating temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	90-260 V AC
Dimensions	1+1 RU (19" rack), 400 mm

MODEL-SPECIFIC DATA

Model	Output band	Digital output power (rms) without filter DVB-T/H
3BDT 500UB MM	UHF	10 W

Specifications and characteristics are subject to change without notice.

3BDT 201UB ARK-1

50W rms - UHF - DVB-T2 Digital Transmitter

> 3BDT 201UB ARK-1

Main Features

ARK HP Driver System is a DVB-T2 compliant Television Modulator and Driver for high power exciters.

The system is capable of:

1. Receiving an input MPEG-2 Transport Stream over ASI;
2. Modulating the input signal in compliance with ETSI EN-302 755 (DVB-T2) stan dard;
3. Transmitting DVB-T2 RF output on UHF channels.

The system is composed by two 3BDTx_ARK1 devices:

1. A DVB-T2 compliant Modulator - 3BDTx_ARK1 T2 Modulator - that receives a MPEG-2 TS over ASI, modulates it in compliance with ETSI standard and trans mits the base-band data over a Gigabit Ethernet (GbE) network;
2. A Driver - 3BDTx_ARK1 High Power T2 Driver - suitable to pilot high power sys tems, that receives the base-band data from the GbE port and transmits it on a RF output providing also linear and non-linear pre-correction.

MODULATORE ARK1-T2M

Il modulatore ARK1 T2 è un modulatore DVB-T2 compatibile con ETSI EN-302 755. Il Modulatore DVB-T2 riceve, oltre ASI, un ingresso MPEG-2 Transport Stream, modula il segnale di ingresso in conformità con l'ETSI EN 302 755-standard e trasmette la base-dati su Gigabit Ethernet interface.

Caratteristiche

Basato su un Software Defined Technology (SWDT), Il modulatore 3BDTx_ARK1 T2 permette la definizione di diverse modalità operative sulla stessa piattaforma hardware. Per fini di prova, allo stato dell'arte il 3BDTx_ARK1 T2 può essere un modulatore DVB-T2 o un modulatore DVB-T / H.

Il modulatore DVB-T / H riceve, in ASI un input MPEG-2 Transport Stream, modula il segnale di ingresso in conformità con l'ETSI EN 300 744-standard e trasmette la base-dati su Gigabit Ethernet interface.

MODULATOR ARK1-T2M

ARK1 T2 Modulator is a DVB-T2 Modulator compliant with ETSI EN-302 755. The DVB-T2 Modulator receives, over ASI, an input MPEG-2 Transport Stream, modulates the input signal
in compliance with ETSI EN-302 755 standard and transmits the base-band data over Gigabit Ethernet interface.

Option Features

Based on Software Defined Technology (SWDT), 3BDTx_ARK1 T2 Modulator allows the definition of different operative modes on the same hardware platform.

For testing purposes, at the state of the art 3BDTx_ARK1 T2 Modulator can be either a DVB-T2 Modulator or a DVB-T/H Modulator.

The DVB-T/H Modulator receives, over ASI, an input MPEG-2 Transport Stream, modulates the input signal in compliance with ETSI EN-300 744 standard and transmits the base-band data over Gigabit Ethernet interface.

DRIVER 3BDTx_ARK1 High Power T2

3BDTx_ARK1 High Power T2 Driver is a Multi-standard Television Transmitter.
At the state of the art 3BDTx_ARK1 is:

- DVB-T/H Transmitter compliant with ETSI EN-300 744;
- DVB-T2 Transmitter compliant with ETSI EN-302 755.

The High Power T2 Driver receives the base-band data, modu lated by the 3BDTx_ARK1-T2 Modulator, over Gigabit Ethernet interface and re-transmits DVB-T/H and DVB-T2 compliant RF sibnals allowing software setting of output channel and linear and non linear pre-correction.

A brief description of the main features and potentialities follows:

- Agile UHF output Up-converter (from 470 MHz up to 862 MHz).
- Base-band input data over Gigabit Ethernet interface.
- Modulus/Group Delay Software Precorrection.
- AM/PM Software Pre-correction.

GENERAL

Working Class AB	**3BDT** 201 MM
Cooling	Forced air
Local control and monitoring	Extensive front panel control
	Local terminal on RS-232
Remote control and monitoring	Web based Java interface
	Telnet access via Ethernet
	SNMP
Operating temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	90-260 V AC
Dimensions	2+1 RU (19" rack), 400 mm

MODEL-SPECIFIC DATA FOR UHF VERSION

Model	Output band	Digital output power (rms) Without filter
3BDT		**DVB-T/H/T2**
201UB	UHF	50W

Specifications and characteristics are subject to change without notice.

3BDT 501UB ARK-1

200 W rms - UHF - DVB-T2 Digital Transmitter

> 3BDT 501UB ARK-1

Main Features

ARK HP Driver System is a DVB-T2 compliant Television Modulator and Driver for high power exciters.

The system is capable of:

1. Receiving an input MPEG-2 Transport Stream over ASI;
2. Modulating the input signal in compliance with ETSI EN-302 755 (DVB-T2) stan

3. Transmitting DVB-T2 RF output on UHF channels.

The system is composed by two 3BDTx_ARK1 devices:

1. A DVB-T2 compliant Modulator - 3BDTx_ARK1 T2 Modulator - that receives a MPEG-2 TS over ASI, modulates it in compliance with ETSI standard and trans mits the base-band data over a Gigabit Ethernet (GbE) network;
2. A Driver - 3BDTx_ARK1 High Power T2 Driver - suitable to pilot high power sys tems, that receives the base-band data from the GbE port and transmits it on a RF output providing also linear and non-linear pre-correction.

MODULATORE ARK1-T2M

Il modulatore ARK1 T2 è un modulatore DVB-T2 compatibile con ETSI EN-302 755. Il Modulatore DVB-T2 riceve, oltre ASI, un ingresso MPEG-2 Transport Stream, modula il segnale di ingresso in conformità con l'ETSI EN 302 755-standard e trasmette la base-dati su Gigabit Ethernet interface.

Caratteristiche

Basato su un Software Defined Technology (SWDT), Il modulatore 3BDTx_ARK1 T2 permette la definizione di diverse modalità operative sulla stessa piattaforma hardware. Per fini di prova, allo stato dell'arte il 3BDTx_ARK1 T2 può essere un modulatore DVB-T2 o un modulatore DVB-T / H.

Il modulatore DVB-T / H riceve, in ASI un input MPEG-2 Transport Stream, modula il segnale di ingresso in conformità con l'ETSI EN 300 744-standard e trasmette la base-dati su Gigabit Ethernet interface.

MODULATOR ARK1-T2M

ARK1 T2 Modulator is a DVB-T2 Modulator compliant with ETSI EN-302 755. The DVB-T2 Modulator receives, over ASI, an input MPEG-2 Transport Stream, modulates the input signal
in compliance with ETSI EN-302 755 standard and transmits the base-band data over Gigabit Ethernet interface.

Option Features

Based on Software Defined Technology (SWDT), 3BDTx_ARK1 T2 Modulator allows the definition of different operative modes on the same hardware platform.

For testing purposes, at the state of the art 3BDTx_ARK1 T2 Modulator can be either a DVB-T2 Modulator or a DVB-T/H Modulator.

The DVB-T/H Modulator receives, over ASI, an input MPEG-2 Transport Stream, modulates the input signal in compliance with ETSI EN-300 744 standard and transmits the base-band data over Gigabit Ethernet interface.

DRIVER 3BDTx_ARK1 High Power T2

3BDTx_ARK1 High Power T2 Driver is a Multi-standard Television Transmitter.
At the state of the art 3BDTx_ARK1 is:

- DVB-T/H Transmitter compliant with ETSI EN-300 744;
- DVB-T2 Transmitter compliant with ETSI EN-302 755.

The High Power T2 Driver receives the base-band data, modu lated by the 3BDTx_ARK1-T2 Modulator, over Gigabit Ethernet interface and re-transmits DVB-T/H and DVB-T2 compliant RF sibnals allowing software setting of output channel and linear and non linear pre-correction.

A brief description of the main features and potentialities follows:

- Agile UHF output Up-converter (from 470 MHz up to 862 MHz).
- Base-band input data over Gigabit Ethernet interface.
- Modulus/Group Delay Software Precorrection.
- AM/PM Software Pre-correction.

GENERAL

Working Class AB	**3BDT**501 ARK-1
Cooling	Forced air
Local control and monitoring	Extensive front panel control
Remote control and monitoring	Local terminal on RS-232 Web based Java interface Telnet access via Ethernet SNMP
Operating temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	90-260 V AC
Dimensions	15 RU (19" rack), 400 mm

MODEL-SPECIFIC DATA FOR UHF VERSION

Model	Output band	Digital output power (rms) Without filter
3BDT		**DVB-T/H/T2**
501UB	UHF	200W

Specifications and characteristics are subject to change without notice.

3BDT 102UB ARK-1

400 W rms - UHF - DVB-T2 Digital Transmitter

> 3BDT 102UB ARK-1

Main Features

ARK HP Driver System is a DVB-T2 compliant Television Modulator and Driver for high power exciters.

The system is capable of:

1. Receiving an input MPEG-2 Transport Stream over ASI;
2. Modulating the input signal in compliance with ETSI EN-302 755 (DVB-T2) stan

3. Transmitting DVB-T2 RF output on UHF channels.

The system is composed by two 3BDTx_ARK1 devices:

1. A DVB-T2 compliant Modulator - 3BDTx_ARK1 T2 Modulator - that receives a MPEG-2 TS over ASI, modulates it in compliance with ETSI standard and trans mits the base-band data over a Gigabit Ethernet (GbE) network;
2. A Driver - 3BDTx_ARK1 High Power T2 Driver - suitable to pilot high power sys tems, that receives the base-band data from the GbE port and transmits it on a RF output providing also linear and non-linear pre-correction.

MODULATORE ARK1-T2M

Il modulatore ARK1 T2 è un modulatore DVB-T2 compatibile con ETSI EN-302 755. Il Modulatore DVB-T2 riceve, oltre ASI, un ingresso MPEG-2 Transport Stream, modula il segnale di ingresso in conformità con l'ETSI EN 302 755-standard e trasmette la base-dati su Gigabit Ethernet interface.

Caratteristiche

Basato su un Software Defined Technology (SWDT), Il modulatore 3BDTx_ARK1 T2 permette la definizione di diverse modalità operative sulla stessa piattaforma hardware. Per fini di prova, allo stato dell'arte il 3BDTx_ARK1 T2 può essere un modulatore DVB-T2 o un modulatore DVB-T / H.

Il modulatore DVB-T / H riceve, in ASI un input MPEG-2 Transport Stream, modula il segnale di ingresso in conformità con l'ETSI EN 300 744-standard e trasmette la base-dati su Gigabit Ethernet interface.

MODULATOR ARK1-T2M

ARK1 T2 Modulator is a DVB-T2 Modulator compliant with ETSI EN-302 755. The DVB-T2 Modulator receives, over ASI, an input MPEG-2 Transport Stream, modulates the input signal
in compliance with ETSI EN-302 755 standard and transmits the base-band data over Gigabit Ethernet interface.

Option Features

Based on Software Defined Technology (SWDT), 3BDTx_ARK1 T2 Modulator allows the definition of different operative modes on the same hardware platform.

For testing purposes, at the state of the art 3BDTx_ARK1 T2 Modulator can be either a DVB-T2 Modulator or a DVB-T/H Modulator.

The DVB-T/H Modulator receives, over ASI, an input MPEG-2 Transport Stream, modulates the input signal in compliance with ETSI EN-300 744 standard and transmits the base-band data over Gigabit Ethernet interface.

DRIVER 3BDTx_ARK1 High Power T2

3BDTx_ARK1 High Power T2 Driver is a Multi-standard Television Transmitter.
At the state of the art 3BDTx_ARK1 is:

- DVB-T/H Transmitter compliant with ETSI EN-300 744;
- DVB-T2 Transmitter compliant with ETSI EN-302 755.

The High Power T2 Driver receives the base-band data, modu lated by the 3BDTx_ARK1-T2 Modulator, over Gigabit Ethernet interface and re-transmits DVB-T/H and DVB-T2 compliant RF sibnals allowing software setting of output channel and linear and non linear pre-correction.

A brief description of the main features and potentialities follows:

- Agile UHF output Up-converter (from 470 MHz up to 862 MHz).
- Base-band input data over Gigabit Ethernet interface.
- Modulus/Group Delay Software Precorrection.
- AM/PM Software Pre-correction.

GENERAL

Working Class AB	**3BDT** 102 ARK-1
Cooling	Forced air
Local control and monitoring	Extensive front panel control
	Local terminal on RS-232
Remote control and monitoring	Web based Java interface
	Telnet access via Ethernet
	SNMP
Operating temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	90-260 V AC

MODEL-SPECIFIC DATA FOR UHF VERSION

Model	Output band	Digital output power (rms) Without filter
3BDT		**DVB-T/H/T2**
102UB	UHF	400W

Specifications and characteristics are subject to change without notice.

3BDT 202UB ARK-1

750 W rms - UHF - DVB-T2 Digital Transmitter

> 3BDT 202UB ARK-1

Main Features

ARK HP Driver System is a DVB-T2 compliant Television Modulator and Driver for high power exciters.

The system is capable of:

1. Receiving an input MPEG-2 Transport Stream over ASI;
2. Modulating the input signal in compliance with ETSI EN-302 755 (DVB-T2) stan

3. Transmitting DVB-T2 RF output on UHF channels.

The system is composed by two 3BDTx_ARK1 devices:

1. A DVB-T2 compliant Modulator - 3BDTx_ARK1 T2 Modulator - that receives a MPEG-2 TS over ASI, modulates it in compliance with ETSI standard and trans mits the base-band data over a Gigabit Ethernet (GbE) network;
2. A Driver - 3BDTx_ARK1 High Power T2 Driver - suitable to pilot high power sys tems, that receives the base-band data from the GbE port and transmits it on a RF output providing also linear and non-linear pre-correction.

MODULATORE ARK1-T2M

Il modulatore ARK1 T2 è un modulatore DVB-T2 compatibile con ETSI EN-302 755. Il Modulatore DVB-T2 riceve, oltre ASI, un ingresso MPEG-2 Transport Stream, modula il segnale di ingresso in conformità con l'ETSI EN 302 755-standard e trasmette la base-dati su Gigabit Ethernet interface.

Caratteristiche

Basato su un Software Defined Technology (SWDT), Il modulatore 3BDTx_ARK1 T2 permette la definizione di diverse modalità operative sulla stessa piattaforma hardware. Per fini di prova, allo stato dell'arte il 3BDTx_ARK1 T2 può essere un modulatore DVB-T2 o un modulatore DVB-T / H.

Il modulatore DVB-T / H riceve, in ASI un input MPEG-2 Transport Stream, modula il segnale di ingresso in conformità con l'ETSI EN 300 744-standard e trasmette la base-dati su Gigabit Ethernet interface.

MODULATOR ARK1-T2M

ARK1 T2 Modulator is a DVB-T2 Modulator compliant with ETSI EN-302 755. The DVB-T2 Modulator receives, over ASI, an input MPEG-2 Transport Stream, modulates the input signal

in compliance with ETSI EN-302 755 standard and transmits the base-band data over Gigabit Ethernet interface.

Option Features

Based on Software Defined Technology (SWDT), 3BDTx_ARK1 T2 Modulator allows the definition of different operative modes on the same hardware platform.

For testing purposes, at the state of the art 3BDTx_ARK1 T2 Modulator can be either a DVB-T2 Modulator or a DVB-T/H Modulator.

The DVB-T/H Modulator receives, over ASI, an input MPEG-2 Transport Stream, modulates the input signal in compliance with ETSI EN-300 744 standard and transmits the base-band data over Gigabit Ethernet interface.

DRIVER 3BDTx_ARK1 High Power T2

3BDTx_ARK1 High Power T2 Driver is a Multi-standard Television Transmitter.

At the state of the art 3BDTx_ARK1 is:

- DVB-T/H Transmitter compliant with ETSI EN-300 744;
- DVB-T2 Transmitter compliant with ETSI EN-302 755.

The High Power T2 Driver receives the base-band data, modu lated by the 3BDTx_ARK1-T2 Modulator, over Gigabit Ethernet interface and re-transmits DVB-T/H and DVB-T2 compliant RF sibnals allowing software setting of output channel and linear and non linear pre-correction.

A brief description of the main features and potentialities follows:

- Agile UHF output Up-converter (from 470 MHz up to 862 MHz).
- Base-band input data over Gigabit Ethernet interface.
- Modulus/Group Delay Software Precorrection.
- AM/PM Software Pre-correction.

GENERAL

Working Class AB	**3BDT 202 ARK-1**
Cooling	Forced air
Local control and monitoring	Extensive front panel control
	Local terminal on RS-232
Remote control and monitoring	Web based Java interface
	Telnet access via Ethernet
	SNMP
Operating temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	90-260 V AC

MODEL-SPECIFIC DATA FOR UHF VERSION

Model	Output band	Digital output power (rms) Without filter
3BDT		**DVB-T/H/T2**
202UB	UHF	750W

Specifications and characteristics are subject to change without notice.

3BDT 502UB ARK-1

1500W rms - UHF - DVB-T2 Digital Trasmitter

> 3BDT 502UB ARK-1

> 3BDT 502UB-W ARK-1
Liquid Cooling Version

Main Features

ARK HP Driver System is a DVB-T2 compliant Television Modulator and Driver for high power exciters.

The system is capable of:

1. Receiving an input MPEG-2 Transport Stream over ASI;
2. Modulating the input signal in compliance with ETSI EN-302 755 (DVB-T2) stan

3. Transmitting DVB-T2 RF output on UHF channels.
The system is composed by two 3BDTx_ARK1 devices:

1. A DVB-T2 compliant Modulator - 3BDTx_ARK1 T2 Modulator - that receives a MPEG-2 TS over ASI, modulates it in compliance with ETSI standard and trans mits the base-band data over a Gigabit Ethernet (GbE) network;
2. A Driver - 3BDTx_ARK1 High Power T2 Driver - suitable to pilot high power sys tems, that receives the base-band data from the GbE port and transmits it on a RF output providing also linear and non-linear pre-correction.

MODULATORE ARK1-T2M

Il modulatore ARK1 T2 è un modulatore DVB-T2 compatibile con ETSI EN-302 755. Il Modulatore DVB-T2 riceve, oltre ASI, un ingresso MPEG-2 Transport Stream, modula il segnale di ingresso in conformità con l'ETSI EN 302 755-standard e trasmette la base-dati su Gigabit Ethernet interface.

Caratteristiche

Basato su un Software Defined Technology (SWDT), Il modulatore 3BDTx_ARK1 T2 permette la definizione di diverse modalità operative sulla stessa piattaforma hardware. Per fini di prova, allo stato dell'arte il 3BDTx_ARK1 T2 può essere un modulatore DVB-T2 o un modulatore DVB-T / H.

Il modulatore DVB-T / H riceve, in ASI un input MPEG-2 Transport Stream, modula il segnale di ingresso in conformità con l'ETSI EN 300 744-standard e trasmette la base-dati su Gigabit Ethernet interface.

DRIVER 3BDTx_ARK1 High Power T2

3BDTx_ARK1 High Power T2 Driver is a Multi-standard Television Transmitter.
At the state of the art 3BDTx_ARK1 is:

- DVB-T/H Transmitter compliant with ETSI EN-300 744;
- DVB-T2 Transmitter compliant with ETSI EN-302 755.

GENERAL

Working Class AB	**3BDT 502 ARK-1**
Cooling	Forced air or Liquid Cooled
Local control and monitoring	Extensive front panel control
Remote control and monitoring	Local terminal on RS-232 Web based Java interface Telnet access via Ethernet SNMP
Operating temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	380 V AC (3 ph.)

MODULATOR ARK1-T2M

ARK1 T2 Modulator is a DVB-T2 Modulator compliant with ETSI EN-302 755.
The DVB-T2 Modulator receives, over ASI, an input MPEG-2 Transport Stream, modulates the input signal
in compliance with ETSI EN-302 755 standard and transmits the base-band data over Gigabit Ethernet interface.

Option Features

Based on Software Defined Technology (SWDT), 3BDTx_ARK1 T2 Modulator allows the definition of different operative modes on the same hardware platform.
For testing purposes, at the state of the art 3BDTx_ARK1 T2 Modulator can be either a DVB-T2 Modulator or a DVB-T/H Modulator.
The DVB-T/H Modulator receives, over ASI, an input MPEG-2 Transport Stream, modulates the input signal in compliance with ETSI EN-300 744 standard and transmits the base-band data over Gigabit Ethernet interface.

The High Power T2 Driver receives the base-band data, modu lated by the 3BDTx_ARK1-T2 Modulator, over Gigabit Ethernet interface and re-transmits DVB-T/H and DVB-T2 compliant RF sibnals allowing software setting of output channel and linear and non linear pre-correction.
A brief description of the main features and potentialities follows:

- Agile UHF output Up-converter (from 470 MHz up to 862 MHz).
- Base-band input data over Gigabit Ethernet interface.
- Modulus/Group Delay Software Precorrection.
- AM/PM Software Pre-correction.

MODEL-SPECIFIC DATA FOR UHF VERSION

Model	Output band	Digital output power (rms) Without filter
3BDT		**DVB-T/H/T2**
502UB	UHF	1500W
502UB-W	UHF	1500W

Specifications and characteristics are subject to change without notice.

3BDT 103UB ARK-1

3000W rms - UHF - DVB-T2 Digital Trasmitter

> 3BDT 103UM ARK-1

> 3BDT 103UM-W ARK-1
Liquid Cooling Version

Main Features

ARK HP Driver System is a DVB-T2 compliant Television Modulator and Driver for high power exciters.

The system is capable of:

1. Receiving an input MPEG-2 Transport Stream over ASI;
2. Modulating the input signal in compliance with ETSI EN-302 755 (DVB-T2) stan

3. Transmitting DVB-T2 RF output on UHF channels.
The system is composed by two 3BDTx_ARK1 devices:

1. A DVB-T2 compliant Modulator - 3BDTx_ARK1 T2 Modulator - that receives a MPEG-2 TS over ASI, modulates it in compliance with ETSI standard and trans mits the base-band data over a Gigabit Ethernet (GbE) network;
2. A Driver - 3BDTx_ARK1 High Power T2 Driver - suitable to pilot high power sys tems, that receives the base-band data from the GbE port and transmits it on a RF output providing also linear and non-linear pre-correction.

MODULATORE ARK1-T2M

Il modulatore ARK1 T2 è un modulatore DVB-T2 compatibile con ETSI EN-302 755. Il Modulatore DVB-T2 riceve, oltre ASI, un ingresso MPEG-2 Transport Stream, modula il segnale di ingresso in conformità con l'ETSI EN 302 755-standard e trasmette la base-dati su Gigabit Ethernet interface.

Caratteristiche

Basato su un Software Defined Technology (SWDT), Il modulatore 3BDTx_ARK1 T2 permette la definizione di diverse modalità operative sulla stessa piattaforma hardware. Per fini di prova, allo stato dell'arte il 3BDTx_ARK1 T2 può essere un modulatore DVB-T2 o un modulatore DVB-T / H.

Il modulatore DVB-T / H riceve, in ASI un input MPEG-2 Transport Stream, modula il segnale di ingresso in conformità con l'ETSI EN 300 744-standard e trasmette la base-dati su Gigabit Ethernet interface.

DRIVER 3BDTx_ARK1 High Power T2

3BDTx_ARK1 High Power T2 Driver is a Multi-standard Television Transmitter.
At the state of the art 3BDTx_ARK1 is:

- DVB-T/H Transmitter compliant with ETSI EN-300 744;
- DVB-T2 Transmitter compliant with ETSI EN-302 755.

GENERAL

Working Class AB	**3BDT 103 MM**
Cooling	Forced air or Liquid Cooled
Local control and monitoring	Extensive front panel control
Remote control and monitoring	Local terminal on RS-232 Web based Java interface Telnet access via Ethernet SNMP
Operating temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	380 V AC (3 ph.)

MODULATOR ARK1-T2M

ARK1 T2 Modulator is a DVB-T2 Modulator compliant with ETSI EN-302 755.
The DVB-T2 Modulator receives, over ASI, an input MPEG-2 Transport Stream, modulates the input signal
in compliance with ETSI EN-302 755 standard and transmits the base-band data over Gigabit Ethernet interface.

Option Features

Based on Software Defined Technology (SWDT), 3BDTx_ARK1 T2 Modulator allows the definition of different operative modes on the same hardware platform.
For testing purposes, at the state of the art 3BDTx_ARK1 T2 Modulator can be either a DVB-T2 Modulator or a DVB-T/H Modulator.
The DVB-T/H Modulator receives, over ASI, an input MPEG-2 Transport Stream, modulates the input signal in compliance with ETSI EN-300 744 standard and transmits the base-band data over Gigabit Ethernet interface.

The High Power T2 Driver receives the base-band data, modu lated by the 3BDTx_ARK1-T2 Modulator, over Gigabit Ethernet interface and re-transmits DVB-T/H and DVB-T2 compliant RF sibnals allowing software setting of output channel and linear and non linear pre-correction.
A brief description of the main features and potentialities follows:

- Agile UHF output Up-converter (from 470 MHz up to 862 MHz).
- Base-band input data over Gigabit Ethernet interface.
- Modulus/Group Delay Software Precorrection.
- AM/PM Software Pre-correction.

MODEL-SPECIFIC DATA FOR UHF VERSION

Model	Output band	Digital output power (rms) Without filter
3BDT		**DVB-T/H/T2**
103UB	UHF	3000W

Specifications and characteristics are subject to change without notice.

3BDT 203UB ARK-1

6000W rms - UHF - DVB-T2 Digital Trasmitter

> 3BDT 203UM ARK-1

> 3BDT 203UM-W ARK-1
Liquid Cooling Version

Main Features

ARK HP Driver System is a DVB-T2 compliant Television Modulator and Driver for high power exciters.

The system is capable of:

1. Receiving an input MPEG-2 Transport Stream over ASI;
2. Modulating the input signal in compliance with ETSI EN-302 755 (DVB-T2) stan

3. Transmitting DVB-T2 RF output on UHF channels.
The system is composed by two 3BDTx_ARK1 devices:
1. A DVB-T2 compliant Modulator - 3BDTx_ARK1 T2 Modulator - that receives a MPEG-2 TS over ASI, modulates it in compliance with ETSI standard and trans mits the base-band data over a Gigabit Ethernet (GbE) network;
2. A Driver - 3BDTx_ARK1 High Power T2 Driver - suitable to pilot high power sys tems, that receives the base-band data from the GbE port and transmits it on a RF output providing also linear and non-linear pre-correction.

MODULATORE ARK1-T2M

Il modulatore ARK1 T2 è un modulatore DVB-T2 compatibile con ETSI EN-302 755. Il Modulatore DVB-T2 riceve, oltre ASI, un ingresso MPEG-2 Transport Stream, modula il segnale di ingresso in conformità con l'ETSI EN 302 755-standard e trasmette la base-dati su Gigabit Ethernet interface.

Caratteristiche

Basato su un Software Defined Technology (SWDT), Il modulatore 3BDTx_ARK1 T2 permette la definizione di diverse modalità operative sulla stessa piattaforma hardware. Per fini di prova, allo stato dell'arte il 3BDTx_ARK1 T2 può essere un modulatore DVB-T2 o un modulatore DVB-T / H.

Il modulatore DVB-T / H riceve, in ASI un input MPEG-2 Transport Stream, modula il segnale di ingresso in conformità con l'ETSI EN 300 744-standard e trasmette la base-dati su Gigabit Ethernet interface.

DRIVER 3BDTx_ARK1 High Power T2

3BDTx_ARK1 High Power T2 Driver is a Multi-standard Television Transmitter.
At the state of the art 3BDTx_ARK1 is:

- DVB-T/H Transmitter compliant with ETSI EN-300 744;
- DVB-T2 Transmitter compliant with ETSI EN-302 755.

GENERAL

Working Class AB	**3BDT 203 ARK-1**
Cooling	Forced air or Liquid Cooled
Local control and monitoring	Extensive front panel control
Remote control and monitoring	Local terminal on RS-232 Web based Java interface Telnet access via Ethernet SNMP
Operating temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	380 V AC (3 ph.)

MODULATOR ARK1-T2M

ARK1 T2 Modulator is a DVB-T2 Modulator compliant with ETSI EN-302 755.
The DVB-T2 Modulator receives, over ASI, an input MPEG-2 Transport Stream, modulates the input signal
in compliance with ETSI EN-302 755 standard and transmits the base-band data over Gigabit Ethernet interface.

Option Features

Based on Software Defined Technology (SWDT), 3BDTx_ARK1 T2 Modulator allows the definition of different operative modes on the same hardware platform.
For testing purposes, at the state of the art 3BDTx_ARK1 T2 Modulator can be either a DVB-T2 Modulator or a DVB-T/H Modulator.
The DVB-T/H Modulator receives, over ASI, an input MPEG-2 Transport Stream, modulates the input signal in compliance with ETSI EN-300 744 standard and transmits the base-band data over Gigabit Ethernet interface.

The High Power T2 Driver receives the base-band data, modu lated by the 3BDTx_ARK1-T2 Modulator, over Gigabit Ethernet interface and re-transmits DVB-T/H and DVB-T2 compliant RF sibnals allowing software setting of output channel and linear and non linear pre-correction.
A brief description of the main features and potentialities follows:

- Agile UHF output Up-converter (from 470 MHz up to 862 MHz).
- Base-band input data over Gigabit Ethernet interface.
- Modulus/Group Delay Software Precorrection.
- AM/PM Software Pre-correction.

MODEL-SPECIFIC DATA FOR UHF VERSION

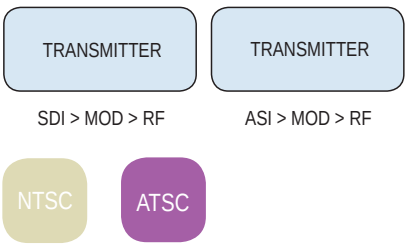
Model	Output band	Digital output power (rms) Without filter
3BDT		**DVB-T/H/T2**
203UB	UHF	6000W

Specifications and characteristics are subject to change without notice.

3BDT ARK-1 ATSC Series

Analog and Digital Transmitter

NTSC + ATSC



From 5W rms up to 24KW rms From 10W ps up to 60KW ps Force air Cooled or Liquid Cooled

3BDT Series NTSC + ATSC Version

Analog and Digital Transmitter

3BDT 200 ARK-1 ATSC

Digital Transmitter 15W ps/8W rms

> 3BDT 200 ARK-1

Main Features

- UHF/VHF fully agile Transmitter
- Integrated GPS Professional Receiver.
- Integrated SNMP management with events store.
- Integrated GBE interface.
- Output Power remotely adjustable via MIP or SNMP with high dynamics, in step of 0.1 dB.
- “Soft-start” Circuit.
- Adaptive digital linear precorrection.
- Digital non linear precorrection with automatic curves loading for each standard, channel and power levels.
- Wide Range Power Supply 90-264 V AC in fuse-free configuration (SW Standby Switch).
- 12 (with power limitations), 24, 48 V DC Optional.
- Typical MER: > 36 dB at all power levels and in all channels.
- Quick-acting protection circuits against overpowerand direct/reflected power.
- Protection against reflected power with automatic fold-back.
- Compact Design: 19” x 1 unit, depth 400 mm

Il 3BDT ARK-1 è un trasmettitore ATSC Digitale dotato di Digital linear e non linear Precorrection. Inoltre, utilizza le più avanzate SWDT (Software Defined Trasmettitori) tecnologia, tipico di questa serie di prodotti, che consente un controllo completo del sistema attraverso vari modi: in remoto, utilizzando un contatto pulito, tramite comandi SNMP, via TCP / IP , utilizzando l'interfaccia grafica Web, o anche tramite un comando dedicato inserito nel flusso di trasporto. Un firmware innovativo permette l'elaborazione di segnali con margine d'errore pari a zero, grazie ad un'architettura interna a 32 bit. Interfacce funzionali sono disponibili per il totale controllo remoto dell'apparato tramite protocolli seriali o porte TCP / IP. Grazie al server Web interno, l'apparato può essere facilmente monitorato e configurato utilizzando una connessione LAN e un Web browser standard. Inoltre, il built-in server SNMP permette di eseguire qualsiasi tipo di automatismo di controllo remoto.

The 3BDT ARK-1 is a ATSC Digital transmitters that features Digital Linear and Not Linear Precorrection. Moreover, it uses the very advanced SWDT® (Software Defined Transmitters) technology, typical of this series of products, which allows a complete control of the system through various ways: remotely, using a clean contact; via SNMP commands; via TCP/IP, using the Web graphic interface; or even via a dedicated command inserted into the transport stream.
An innovative firmware allows zero error signal processing thanks to an internal 32 bit architecture.
Functional interfaces are available for total remote control of the apparatus by means of serial protocols or TCP/IP ports.
Thanks to the internal Web server the apparatus can be easily monitored and configured using a LAN connection and a standard Web browser. Moreover, the built-in SNMP server allows performing all types of automated remote control.

MODEL-SPECIFIC DATA

Model	Output band	Digital output power (rms) without filter ATSC	Nominal analog output power (p.s.) with dual mode option
3BDT 200UB ARK-1	UHF	5W class A	20 W
3BDT 200TB ARK-1	VHF (III)	5W class A	20 W
3BDT 200FB ARK-1	VHF (I)	5W class A	20 W

Specifications and characteristics are subject to change without notice.

GENERAL

Working Class A	3BDT 200 ARK-1
Cooling	Forced air
Local control and monitoring	Extensive front panel control Local terminal on RS-232
Remote control and monitoring	Web based Java interface Telnet access via Ethernet SNMP
Operating temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	90-260 V AC
Dimensions	1 RU (19” rack), 400 mm

Front View


Rear View

Front Panel Connectors

1. RF IN	For adaptive precorrection loop.
2. GPS IN	F (75 Ohm) type connector, female.
3. ASI OUT HP	Not used
4. ASI OUT LP	Not used
5. ASI IN 1/SMPTE 310/SDI	Digital Input
6. ASI IN 2/SMPTE 310/SDI	Digital Input
7. ASI IN 3/SMPTE 310/SDI	Digital Input
8. ASI IN 4/SMPTE 310/SDI	Digital Input
9. TCP/IP + GBE	Integrated TCP/IP Giga Bit Ethernet interface also suitable for MPEG over IP feedng).
10. LCD Display	Multimeter 4 x 20
11. Controls	Navigation and operation push-buttons


Java Interface Pages

MAIN TECHNICAL CHARACTERISTICS

GENERAL

Available standards	ATSC
Operating frequency range	UHF Band (470 - 862 MHz)
Cooling	Forced Air
Main supply	wide range 90-264 VAC
MAX Power consumption	130W

GENERAL

RF OUTPUT Connector	N Female
Impedance	50 Ω
Load mismatch	2:1 Max. (with output isolator)
RF monitor connector	SMA
Impedance	50 Ω

INPUT PARAMETERS

DIGITAL 1 (HP&LP) & DIGITAL 2(HP&LP)

Input Signal	MPEG-2 Transport Stream, ASI format
Input Level	800 mV (±10%)
Data rate	270 MB/s
Data rate error	±3ppm
Input connector	BNC
Input impedance	Ω 75

GBE

MPEG over IP (pro mpeg cop 3) Transport Stream input.
Full control and management via JAVA Interface and SNMP protocol.

RF

Input Signal	VHF/UHF
Input connector	N female
Inputimpedance	Ω 75

LNB power supply from transmitter

OUTPUT PARAMETERS

ATSC MODULATOR

Input	4 x BNC 75 Ω: ASI, SMPTE-310M, SDI for dual mode option
Input data rate	Up to 19.39 Mbits/s
Channel bandwidth	6 MHz
Modulation	8VSB (16VSB optional)
Trellis coding	2/3
Symbol rate	10.762 Msymbol/sec.
Bandwidth efficiency	3 Bits/symbol
Precision offset	Integrated, 1 Hz steps
Frequency precision	1 ppm or internal GPS locked
Frequency reference input	10 MHz, BNC 50 Ω
Time reference input	1 PPS, BNC 50 Ω
Reed-Solomon encoder	207/187/10
SFN function	Included (proprietary)
Test functions	PRBS, CW
PCR restamping	Included for ASI input
Del. Null Packet mode	Included for ASI input

3BDT 500 ARK-1 ATSC

Digital Transmitter 50W ps/15W rms

>3BDT 500 ARK-1

Main Features

- UHF/VHF fully agile Transmitter
- Integrated GPS Professional Receiver.
- Integrated SNMP management with events store.
- Integrated GBE interface.
- Output Power remotely adjustable via MIP or SNMP with high dynamics, in step of 0.1 dB.
- “Soft-start” Circuit.
- Adaptive digital linear precorrection.
- Digital non linear precorrection with automatic curves loading for each standard, channel and power levels.
- Wide Range Power Supply 90-264 V AC in fuse-free configuration (SW Standby Switch).
- 12 (with power limitations), 24, 48 V DC Optional.
- Typical MER: > 36 dB at all power levels and in all channels.
- Quick-acting protection circuits against overpowerand direct/reflected power.
- Protection against reflected power with automatic fold-back.
- Compact Design: 19” x 1 unit, depth 400 mm

Il 3BDT ARK-1 è un trasmettitore ATSC Digitale dotato di Digital linear e non linear Precorrection. Inoltre, utilizza le più avanzate SWDT (Software Defined Trasmettitori) tecnologia, tipico di questa serie di prodotti, che consente un controllo completo del sistema attraverso vari modi: in remoto, utilizzando un contatto pulito, tramite comandi SNMP, via TCP / IP , utilizzando l'interfaccia grafica Web, o anche tramite un comando dedicato inserito nel flusso di trasporto. Un firmware innovativo permette l'elaborazione di segnali con margine d'errore pari a zero, grazie ad un'architettura interna a 32 bit. Interfacce funzionali sono disponibili per il totale controllo remoto dell'apparato tramite protocolli seriali o porte TCP / IP. Grazie al server Web interno, l'apparato può essere facilmente monitorato e configurato utilizzando una connessione LAN e un Web browser standard. Inoltre, il built-in server SNMP permette di eseguire qualsiasi tipo di automatismo di controllo remoto.

The 3BDT ARK-1 is a ATSC Digital transmitters that features Digital Linear and Not Linear Precorrection. Moreover, it uses the very advanced SWDT® (Software Defined Transmitters) technology, typical of this series of products, which allows a complete control of the system through various ways: remotely, using a clean contact; via SNMP commands; via TCP/IP, using the Web graphic interface; or even via a dedicated command inserted into the transport stream.
An innovative firmware allows zero error signal processing thanks to an internal 32 bit architecture.
Functional interfaces are available for total remote control of the apparatus by means of serial protocols or TCP/IP ports.
Thanks to the internal Web server the apparatus can be easily monitored and configured using a LAN connection and a standard Web browser. Moreover, the built-in SNMP server allows performing all types of automated remote control.

MODEL-SPECIFIC DATA

Model	Output band	Digital output power (rms) without filter DVB-T/H	Nominal analog output power (p.s.) with dual mode option
3B DT 500UB ARK-1	UHF	15 W	50 W
3B DT 500TB ARK-1	VHF (III)	15 W	50 W
3B DT 500 FB ARK-1	VHF (I)	15 W	50 W

Specifications and characteristics are subject to change without notice.

GENERAL

	3BDT 500 ARK-1
Working Class AB	
Cooling	Forced air
Local control and monitoring	Extensive front panel control Local terminal on RS-232
Remote control and monitoring	Web based Java interface Telnet access via Ethernet SNMP
Operating temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	90-260 V AC
Dimensions	1 RU (19” rack), 400 mm

Front View

Rear View

Front Panel Connectors

1. RF IN	For adaptive precorrection loop.
2. GPS IN	F (75 Ohm) type connector, female.
3. ASI OUT HP	Not used
4. ASI OUT LP	Not used
5. ASI IN 1/SMPTE 310/SDI	Digital Input
6. ASI IN 2/SMPTE 310/SDI	Digital Input
7. ASI IN 3/SMPTE 310/SDI	Digital Input
8. ASI IN 4/SMPTE 310/SDI	Digital Input
9. TCP/IP + GBE	Integrated TCP/IP Giga Bit Ethernet interface also suitable for MPEG over IP feedng).
10. LCD Display	Multimeter 4 x 20
11. Controls	Navigation and operation push-buttons

Java Interface Pages

MAIN TECHNICAL CHARACTERISTICS

GENERAL

Available standards	ATSC
Operating frequency range	UHF Band (470 - 862 MHz)
Cooling	Forced Air
Main supply	wide range 90-264 VAC
MAX Power consumption	130W

GENERAL

RF OUTPUT Connector	N Female
Impedance	50 Ω
Load mismatch	2:1 Max. (with output isolator)
RF monitor connector	SMA
Impedance	50 Ω

INPUT PARAMETERS

DIGITAL 1 (HP&LP) & DIGITAL 2(HP&LP)

Input Signal	MPEG-2 Transport Stream, ASI format
Input Level	800 mV (±10%)
Data rate	270 MB/s
Data rate error	±3ppm
Input connector	BNC
Input impedance	Ω 75

GBE

MPEG over IP (pro mpeg cop 3) Transport Stream input.
Full control and management via JAVA Interface and SNMP protocol.

RF

Input Signal	VHF/UHF
Input connector	N female
Inputimpedance	Ω 75

LNB power supply from transmitter

OUTPUT PARAMETERS

ATSC MODULATOR

Input	4 x BNC 75 Ω: ASI, SMPTE-310M, SDI for dual mode option
Input data rate	Up to 19.39 Mbits/s
Channel bandwidth	6 MHz
Modulation	8VSB (16VSB optional)
Trellis coding	2/3
Symbol rate	10.762 Msymbol/sec.
Bandwidth efficiency	3 Bits/symbol
Precision offset	Integrated, 1 Hz steps
Frequency precision	1 ppm or internal GPS locked
Frequency reference input	10 MHz, BNC 50 Ω
Time reference input	1 PPS, BNC 50 Ω
Reed-Solomon encoder	207/187/10
SFN function	Included (proprietary)
Test functions	PRBS, CW
PCR restamping	Included for ASI input
Del. Null Packet mode	Included for ASI input

3BDT 201 ARK-1 ATSC

Digital Transmitter 200W ps/125W rms

> 3BDT 201 ARK-1

Main Features

- UHF/VHF fully agile Transmitter
- Integrated GPS Professional Receiver.
- Integrated SNMP management with events store.
- Integrated GBE interface.
- Output Power remotely adjustable via MIP or SNMP with high dynamics, in step of 0.1 dB.
- “Soft-start” Circuit.
- Adaptive digital linear precorrection.
- Digital non linear precorrection with automatic curves loading for each standard, channel and power levels.
- Wide Range Power Supply 90-264 V AC in fuse-free configuration (SW Standby Switch).
- Typical MER: > 36 dB at all power levels and in all channels.
- Quick-acting protection circuits against overpowerand direct/reflected power.
- Protection against reflected power with automatic fold-back.

Il 3BDT ARK-1 è un trasmettitore ATSC Digitale dotato di Digital linear e non linear Precorrection. Inoltre, utilizza le più avanzate SWDT (Software Defined Trasmettitori) tecnologia, tipico di questa serie di prodotti, che consente un controllo completo del sistema attraverso vari modi: in remoto, utilizzando un contatto pulito, tramite comandi SNMP, via TCP / IP , utilizzando l'interfaccia grafica Web, o anche tramite un comando dedicato inserito nel flusso di trasporto. Un firmware innovativo permette l'elaborazione di segnali con margine d'errore pari a zero, grazie ad un'architettura interna a 32 bit. Interfacce funzionali sono disponibili per il totale controllo remoto dell'apparato tramite protocolli seriali o porte TCP / IP. Grazie al server Web interno, l'apparato può essere facilmente monitorato e configurato utilizzando una connessione LAN e un Web browser standard. Inoltre, il built-in server SNMP permette di eseguire qualsiasi tipo di automatismo di controllo remoto.

The 3BDT ARK-1 is a ATSC Digital transmitters that features Digital Linear and Not Linear Precorrection. Moreover, it uses the very advanced SWDT® (Software Defined Transmitters) technology, typical of this series of products, which allows a complete control of the system through various ways: remotely, using a clean contact; via SNMP commands; via TCP/IP, using the Web graphic interface; or even via a dedicated command inserted into the transport stream.
An innovative firmware allows zero error signal processing thanks to an internal 32 bit architecture.
Functional interfaces are available for total remote control of the apparatus by means of serial protocols or TCP/IP ports.
Thanks to the internal Web server the apparatus can be easily monitored and configured using a LAN connection and a standard Web browser. Moreover, the built-in SNMP server allows performing all types of automated remote control.

MODEL-SPECIFIC DATA

Model	Output band	Digital output power (rms) without filter ATSC	Nominal analog output power (p.s.) with dual mode option
3BSDT 201UB ARK-1	UHF	125 W	200 W
3BSDT 201TB ARK-1	VHF (III)	125 W	200 W
3BSDT 201FB ARK-1	VHF (I)	125 W	200 W

Specifications and characteristics are subject to change without notice.

GENERAL

Working Class AB	3BDT 201 ARK-1
Cooling	Forced air
Local control and monitoring	Extensive front panel control
Remote control and monitoring	Local terminal on RS-232 Web based Java interface Telnet access via Ethernet SNMP
Operating temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	90-260 V AC
Dimensions	2 RU (19” rack), 400 mm

3BDT 501UB ARK-1 ATSC

Digital Transmitter 700W ps/250W rms

>3BDT 501UB ARK-1

Main Features

- UHF/VHF fully agile Transmitter
- Integrated GPS Professional Receiver.
- Integrated SNMP management with events store.
- Integrated GBE interface.
- Output Power remotely adjustable via MIP or SNMP with high dynamics, in step of 0.1 dB.
- “Soft-start” Circuit.
- Adaptive digital linear precorrection.
- Digital non linear precorrection with automatic curves loading for each standard, channel and power levels.
- Wide Range Power Supply 90-264 V AC in fuse-free configuration (SW Standby Switch).
- Typical MER: > 36 dB at all power levels and in all channels.
- Quick-acting protection circuits against overpowerand direct/reflected power.
- Protection against reflected power with automatic fold-back.

Il 3BDT ARK-1 è un trasmettitore ATSC Digitale dotato di Digital linear e non linear Precorrection. Inoltre, utilizza le più avanzate SWDT (Software Defined Trasmettitori) tecnologia, tipico di questa serie di prodotti, che consente un controllo completo del sistema attraverso vari modi: in remoto, utilizzando un contatto pulito, tramite comandi SNMP, via TCP / IP , utilizzando l'interfaccia grafica Web, o anche tramite un comando dedicato inserito nel flusso di trasporto. Un firmware innovativo permette l'elaborazione di segnali con margine d'errore pari a zero, grazie ad un'architettura interna a 32 bit. Interfacce funzionali sono disponibili per il totale controllo remoto dell'apparato tramite protocolli seriali o porte TCP / IP. Grazie al server Web interno, l'apparato può essere facilmente monitorato e configurato utilizzando una connessione LAN e un Web browser standard. Inoltre, il built-in server SNMP permette di eseguire qualsiasi tipo di automatismo di controllo remoto.

The 3BDT ARK-1 is a ATSC Digital transmitters that features Digital Linear and Not Linear Precorrection. Moreover, it uses the very advanced SWDT® (Software Defined Transmitters) technology, typical of this series of products, which allows a complete control of the system through various ways: remotely, using a clean contact; via SNMP commands; via TCP/IP, using the Web graphic interface; or even via a dedicated command inserted into the transport stream.
An innovative firmware allows zero error signal processing thanks to an internal 32 bit architecture.
Functional interfaces are available for total remote control of the apparatus by means of serial protocols or TCP/IP ports.
Thanks to the internal Web server the apparatus can be easily monitored and configured using a LAN connection and a standard Web browser. Moreover, the built-in SNMP server allows performing all types of automated remote control.

MODEL-SPECIFIC DATA

Model	Output band	Digital output power (rms) without filter ATSC	Nominal analog output power (p.s.) with dual mode option
3BDT 501UB ARK-1	UHF	250 W	700 W
3BDT 501TB ARK-1	VHF (III)	250 W	700 W
3BDT 501TB ARK-1	VHF (I)	250W	700W

Specifications and characteristics are subject to change without notice.

GENERAL

Working Class AB	3B DT 501 ARK-1
Cooling	Forced air
Local control and monitoring	Extensive front panel control
Remote control and monitoring	Local terminal on RS-232 Web based Java interface Telnet access via Ethernet SNMP
Operating temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	90-260 V AC
Dimensions	3 RU (19” rack), 400 mm

3BDT 501 ARK-1 ATSC

Digital Transmitter 700W ps/250W rms

>3BDT 501 ARK-1

Main Features

- UHF/VHF fully agile Transmitter
- Integrated GPS Professional Receiver.
- Integrated SNMP management with events store.
- Integrated GBE interface.
- Output Power remotely adjustable via MIP or SNMP with high dynamics, in step of 0.1 dB.
- “Soft-start” Circuit.
- Adaptive digital linear precorrection.
- Digital non linear precorrection with automatic curves loading for each standard, channel and power levels.
- Wide Range Power Supply 90-264 V AC in fuse-free configuration (SW Standby Switch).
- Typical MER: > 36 dB at all power levels and in all channels.
- Quick-acting protection circuits against overpowerand direct/reflected power.
- Protection against reflected power with automatic fold-back.

Il 3BDT ARK-1 è un trasmettitore ATSC Digitale dotato di Digital linear e non linear Precorrection. Inoltre, utilizza le più avanzate SWDT (Software Defined Trasmettitori) tecnologia, tipico di questa serie di prodotti, che consente un controllo completo del sistema attraverso vari modi: in remoto, utilizzando un contatto pulito, tramite comandi SNMP, via TCP / IP , utilizzando l'interfaccia grafica Web, o anche tramite un comando dedicato inserito nel flusso di trasporto. Un firmware innovativo permette l'elaborazione di segnali con margine d'errore pari a zero, grazie ad un'architettura interna a 32 bit. Interfacce funzionali sono disponibili per il totale controllo remoto dell'apparato tramite protocolli seriali o porte TCP / IP. Grazie al server Web interno, l'apparato può essere facilmente monitorato e configurato utilizzando una connessione LAN e un Web browser standard. Inoltre, il built-in server SNMP permette di eseguire qualsiasi tipo di automatismo di controllo remoto.

The 3BDT ARK-1 is a ATSC Digital transmitters that features Digital Linear and Not Linear Precorrection. Moreover, it uses the very advanced SWDT® (Software Defined Transmitters) technology, typical of this series of products, which allows a complete control of the system through various ways: remotely, using a clean contact; via SNMP commands; via TCP/IP, using the Web graphic interface; or even via a dedicated command inserted into the transport stream.
An innovative firmware allows zero error signal processing thanks to an internal 32 bit architecture.
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Thanks to the internal Web server the apparatus can be easily monitored and configured using a LAN connection and a standard Web browser. Moreover, the built-in SNMP server allows performing all types of automated remote control.

MODEL-SPECIFIC DATA

Model	Output band	Digital output power (rms) without filter ATSC	Nominal analog output power (p.s.) with dual mode option
3BDT 501UB ARK-1	UHF	250 W	700 W
3BDT 501TB ARK-1	VHF (III)	250 W	700 W
3BDT 501TB ARK-1	VHF (I)	250W	700W

Specifications and characteristics are subject to change without notice.

GENERAL

	3B DT 501 ARK-1
Working Class AB	
Cooling	Forced air
Local control and monitoring	Extensive front panel control
Remote control and monitoring	Local terminal on RS-232 Web based Java interface Telnet access via Ethernet SNMP
Operating temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	90-260 V AC
Dimensions	15 RU (19” rack), 400 mm

3BDT 102 ARK-1 ATSC

Digital Transmitter 1500W ps/500W rms

> 3BDT 102UB ARK-1

Main Features

- UHF/VHF fully agile Transmitter
- Integrated GPS Professional Receiver.
- Integrated SNMP management with events store.
- Integrated GBE interface.
- Output Power remotely adjustable via MIP or SNMP with high dynamics, in step of 0.1 dB.
- “Soft-start” Circuit.
- Adaptive digital linear precorrection.
- Digital non linear precorrection with automatic curves loading for each standard, channel and power levels.
- Wide Range Power Supply 90-264 V AC in fuse-free configuration (SW Standby Switch).
- Typical MER: > 36 dB at all power levels and in all channels.
- Quick-acting protection circuits against overpowerand direct/reflected power.
- Protection against reflected power with automatic fold-back.

Il 3BDT ARK-1 è un trasmettitore ATSC Digitale dotato di Digital linear e non linear Precorrection. Inoltre, utilizza le più avanzate SWDT (Software Defined Trasmettitori) tecnologia, tipico di questa serie di prodotti, che consente un controllo completo del sistema attraverso vari modi: in remoto, utilizzando un contatto pulito, tramite comandi SNMP, via TCP / IP , utilizzando l'interfaccia grafica Web, o anche tramite un comando dedicato inserito nel flusso di trasporto. Un firmware innovativo permette l'elaborazione di segnali con margine d'errore pari a zero, grazie ad un'architettura interna a 32 bit. Interfacce funzionali sono disponibili per il totale controllo remoto dell'apparato tramite protocolli seriali o porte TCP / IP. Grazie al server Web interno, l'apparato può essere facilmente monitorato e configurato utilizzando una connessione LAN e un Web browser standard. Inoltre, il built-in server SNMP permette di eseguire qualsiasi tipo di automatismo di controllo remoto.

The 3BDT ARK-1 is a ATSC Digital transmitters that features Digital Linear and Not Linear Precorrection. Moreover, it uses the very advanced SWDT® (Software Defined Transmitters) technology, typical of this series of products, which allows a complete control of the system through various ways: remotely, using a clean contact; via SNMP commands; via TCP/IP, using the Web graphic interface; or even via a dedicated command inserted into the transport stream.
An innovative firmware allows zero error signal processing thanks to an internal 32 bit architecture.
Functional interfaces are available for total remote control of the apparatus by means of serial protocols or TCP/IP ports.
Thanks to the internal Web server the apparatus can be easily monitored and configured using a LAN connection and a standard Web browser. Moreover, the built-in SNMP server allows performing all types of automated remote control.

MODEL-SPECIFIC DATA

Model	Output band	Output connector	Working class	Dimensions	Digital output power (rms) without filter (Shoulders -36 dB @ F_0 ± 4.3 MHz) ATSC	Nominal analog output power (p.s.) NTSC
3BDT 102UB ARK-1	UHF	7/8	AB	1+5 RU	500 W	1500 W
3BDT 102UM ARK-1	UHF	7/8	AB	30 RU	500 W	1500 W
3BDT 102TB ARK-1	VHF (III)	7/8	AB	1+5 RU	500 W	1500 W
3BDT 102TM ARK-1	VHF (III)	7/8	AB	30RU	500 W	1500 W
3BDT 102FB ARK-1	VHF (I)	7/8	AB	1+5 RU	500 W	1500 W
3BDT 102FM ARK-1	VHF (I)	7/8	AB	30RU	500 W	1500 W

Specifications and characteristics are subject to change without notice.

GENERAL

	3BDT 102 ARK-1
Working Class AB	
Cooling	Forced air
Local control and monitoring	Extensive front panel control
	Local terminal on RS-232
Remote control and monitoring	Web based Java interface
	Telnet access via Ethernet
	SNMP
Operating temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	90-260 V AC

3BDT 202 ARK-1 ATSC

Digital Transmitter 3000W ps/1000W rms

> 3BDT 202UB ARK-1

Main Features

- UHF/VHF fully agile Transmitter
- Integrated GPS Professional Receiver.
- Integrated SNMP management with events store.
- Integrated GBE interface.
- Output Power remotely adjustable via MIP or SNMP with high dynamics, in step of 0.1 dB.
- “Soft-start” Circuit.
- Adaptive digital linear precorrection.
- Digital non linear precorrection with automatic curves loading for each standard, channel and power levels.
- Wide Range Power Supply 90-264 V AC in fuse-free configuration (SW Standby Switch).
- Typical MER: > 36 dB at all power levels and in all channels.
- Quick-acting protection circuits against overpowerand direct/reflected power.
- Protection against reflected power with automatic fold-back.

Il 3BDT ARK-1 è un trasmettitore ATSC Digitale dotato di Digital linear e non linear Precorrection. Inoltre, utilizza le più avanzate SWDT (Software Defined Trasmettitori) tecnologia, tipico di questa serie di prodotti, che consente un controllo completo del sistema attraverso vari modi: in remoto, utilizzando un contatto pulito, tramite comandi SNMP, via TCP / IP , utilizzando l'interfaccia grafica Web, o anche tramite un comando dedicato inserito nel flusso di trasporto. Un firmware innovativo permette l'elaborazione di segnali con margine d'errore pari a zero, grazie ad un'architettura interna a 32 bit. Interfacce funzionali sono disponibili per il totale controllo remoto dell'apparato tramite protocolli seriali o porte TCP / IP. Grazie al server Web interno, l'apparato può essere facilmente monitorato e configurato utilizzando una connessione LAN e un Web browser standard. Inoltre, il built-in server SNMP permette di eseguire qualsiasi tipo di automatismo di controllo remoto.

The 3BDT ARK-1 is a ATSC Digital transmitters that features Digital Linear and Not Linear Precorrection. Moreover, it uses the very advanced SWDT® (Software Defined Transmitters) technology, typical of this series of products, which allows a complete control of the system through various ways: remotely, using a clean contact; via SNMP commands; via TCP/IP, using the Web graphic interface; or even via a dedicated command inserted into the transport stream.
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Functional interfaces are available for total remote control of the apparatus by means of serial protocols or TCP/IP ports.
Thanks to the internal Web server the apparatus can be easily monitored and configured using a LAN connection and a standard Web browser. Moreover, the built-in SNMP server allows performing all types of automated remote control.

MODEL-SPECIFIC DATA

Model	Output band	Output connector	Working class	Dimensions	Digital output power (rms) without filter (Shoulders -36 dB @ F_0 ± 4.3 MHz)	Nominal analog output power (p.s.)
					ATSC	NTSC
3BDT 202UB ARK-1	UHF	7/8	AB	1+5 RU	1000 W	3000 W
3BDT 202UM ARK-1	UHF	7/8	AB	30 RU	1000 W	3000 W
3BDT 202TB ARK-1	VHF (III)	7/8	AB	1+5 RU	1000 W	3000 W
3BDT 202TM ARK-1	VHF (III)	7/8	AB	30RU	1000 W	3000 W
3BDT 202FB ARK-1	VHF (I)	7/8	AB	1+5 RU	1000 W	3000 W
3BDT 202FM ARK-1	VHF (I)	7/8	AB	30RU	1000 W	3000 W

Specifications and characteristics are subject to change without notice.

GENERAL

Working Class AB	3BDT 202 ARK-1
Cooling	Forced air
Local control and monitoring	Extensive front panel control
	Local terminal on RS-232
Remote control and monitoring	Web based Java interface
	Telnet access via Ethernet
	SNMP
Operating temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	90-260 V AC

3BDT 502 ARK-1 ATSC

Digital Transmitter 6000W ps/2000W rms

> 3BDT 502UB ARK-1
Version With Dual Driver

> 3BDT 502UB-W ARK-1
Liquid Cooled Version With Dual Driver

Main Features

- UHF/VHF fully agile Transmitter
- Integrated GPS Professional Receiver.
- Integrated SNMP management with events store.
- Integrated GBE interface.
- Output Power remotely adjustable via MIP or SNMP with high dynamics, in step of 0.1 dB.
- "Soft-start" Circuit.
- Adaptive digital linear precorrection.
- Digital non linear precorrection with automatic curves loading for each standard, channel and power levels.
- Wide Range Power Supply 90-264 V AC in fuse-free configuration (SW Standby Switch).
- Typical MER: > 36 dB at all power levels and in all channels.
- Quick-acting protection circuits against overpowerand direct/reflected power.
- Protection against reflected power with automatic fold-back.

Il 3BDT ARK-1 è un trasmettitore ATSC Digitale dotato di Digital linear e non linear Precorrection. Inoltre, utilizza le più avanzate SWDT (Software Defined Trasmettitori) tecnologia, tipico di questa serie di prodotti, che consente un controllo completo del sistema attraverso vari modi: in remoto, utilizzando un contatto pulito, tramite comandi SNMP, via TCP / IP , utilizzando l'interfaccia grafica Web, o anche tramite un comando dedicato inserito nel flusso di trasporto. Un firmware innovativo permette l'elaborazione di segnali con margine d'errore pari a zero, grazie ad un'architettura interna a 32 bit. Interfacce funzionali sono disponibili per il totale controllo remoto dell'apparato tramite protocolli seriali o porte TCP / IP. Grazie al server Web interno, l'apparato può essere facilmente monitorato e configurato utilizzando una connessione LAN e un Web browser standard. Inoltre, il built-in server SNMP permette di eseguire qualsiasi tipo di automatismo di controllo remoto.

The 3BDT ARK-1 is a ATSC Digital transmitters that features Digital Linear and Not Linear Precorrection. Moreover, it uses the very advanced SWDT® (Software Defined Transmitters) technology, typical of this series of products, which allows a complete control of the system through various ways: remotely, using a clean contact; via SNMP commands; via TCP/IP, using the Web graphic interface; or even via a dedicated command inserted into the transport stream.
An innovative firmware allows zero error signal processing thanks to an internal 32 bit architecture.
Functional interfaces are available for total remote control of the apparatus by means of serial protocols or TCP/IP ports.
Thanks to the internal Web server the apparatus can be easily monitored and configured using a LAN connection and a standard Web browser. Moreover, the built-in SNMP server allows performing all types of automated remote control.

MODEL-SPECIFIC DATA

Model	Output band	Number of amplifiers	Working class	Dimensions	Digital output power (rms) without filter (Shoulders -36 dB @ F_0 ± 4.3 MHz) DVB-T/H	Nominal analog output power (p.s.) PAL
3BDT 502UB ARK-1	UHF	2	AB	30 RU	1500 W	6000 W
3BDT 502UM ARK-1	UHF	4	AB	40 RU	1500 W	6000 W
3BDT 502UB-W ARK-1	UHF	2	AB	40 RU	1500 W	6000 W
3BDT 502TB ARK-1	VHF (III)	2	AB	30 RU	1500 W	6000 W
3BDT 502TM ARK-1	VHF (III)	4	AB	40 RU	1500 W	6000 W
3BDT 502TB-W ARK-1	VHF (III)	2	AB	40 RU	1500 W	6000 W

BANDL and MMDS also available

Specifications and characteristics are subject to change without notice.

GENERAL

Working Class AB	3BDT 502 ARK-1
Cooling	Forced air or Liquid Cooled
Local control and monitoring	Extensive front panel control
Remote control and monitoring	Local terminal on RS-232 Web based Java interface Telnet access via Ethernet SNMP
Operating temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	220 V AC (3 ph.)

3BDT 532 ARK-1 ATSC

Digital Transmitter 9000W ps/3000W rms

> 3BDT 532UB ARK-1
Version With Dual Driver

> 3BDT 532UB-W ARK-1
Liquid Cooled Version With Dual Driver

Main Features

- UHF/VHF fully agile Transmitter
- Integrated GPS Professional Receiver.
- Integrated SNMP management with events store.
- Integrated GBE interface.
- Output Power remotely adjustable via MIP or SNMP with high dynamics, in step of 0.1 dB.
- "Soft-start" Circuit.
- Adaptive digital linear precorrection.
- Digital non linear precorrection with automatic curves loading for each standard, channel and power levels.
- Wide Range Power Supply 90-264 V AC in fuse-free configuration (SW Standby Switch).
- Typical MER: > 36 dB at all power levels and in all channels.
- Quick-acting protection circuits against overpowerand direct/reflected power.
- Protection against reflected power with automatic fold-back.

Il 3BDT ARK-1 è un trasmettitore ATSC Digitale dotato di Digital linear e non linear Precorrection. Inoltre, utilizza le più avanzate SWDT (Software Defined Trasmettitori) tecnologia, tipico di questa serie di prodotti, che consente un controllo completo del sistema attraverso vari modi: in remoto, utilizzando un contatto pulito, tramite comandi SNMP, via TCP / IP , utilizzando l'interfaccia grafica Web, o anche tramite un comando dedicato inserito nel flusso di trasporto. Un firmware innovativo permette l'elaborazione di segnali con margine d'errore pari a zero, grazie ad un'architettura interna a 32 bit. Interfacce funzionali sono disponibili per il totale controllo remoto dell'apparato tramite protocolli seriali o porte TCP / IP. Grazie al server Web interno, l'apparato può essere facilmente monitorato e configurato utilizzando una connessione LAN e un Web browser standard. Inoltre, il built-in server SNMP permette di eseguire qualsiasi tipo di automatismo di controllo remoto.

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Functional interfaces are available for total remote control of the apparatus by means of serial protocols or TCP/IP ports.
Thanks to the internal Web server the apparatus can be easily monitored and configured using a LAN connection and a standard Web browser. Moreover, the built-in SNMP server allows performing all types of automated remote control.

MODEL-SPECIFIC DATA

Model	Output band	Numbers of amplifierr	Working class	Dimensions	Digital output power (rms) without filter (Shoulders -36 dB @ F_0 ± 4.3 MHz) ATSC	Nominal analog output power (p.s.) NTSC
3BDT 532UB ARK-1	UHF	3	AB	40 RU	3000 W	9000 W
3BDT 532UM ARK-1	UHF	3	AB	40 RU	3000 W	9000 W
3BDT 532UB-W ARK-1	UHF	3	AB	40 RU	3000 W	9000 W
3BDT 532TB ARK-1	VHF (III)	3	AB	40 RU	3000 W	9000 W
3BDT 532TM ARK-1	VHF (III)	3	AB	40 RU	3000 W	9000 W
3BDT 532TB-W ARK-1	VHF (III)	3	AB	40 RU	3000 W	9000 W
3BDT 532FB ARK-1	VHF (I)	3	AB	40 RU	3000 W	9000 W
3BDT 532FM ARK-1	VHF (I)	3	AB	40 RU	3000 W	9000 W
3BDT 532FB-W ARK-1	VHF (I)	3	AB	40 RU	3000 W	9000 W

Specifications and characteristics are subject to change without notice.

GENERAL

	3BDT 532 ARK-1
Working Class AB	
Cooling	Forced air or Liquid Cooled
Local control and monitoring	Extensive front panel control
	Local terminal on RS-232
Remote control and monitoring	Web based Java interface
	Telnet access via Ethernet
	SNMP
Operating temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	220 V AC (3 ph.)

3BDT 103 ARK-1 ATSC

Digital Transmitter 12000W ps/4000W rms

> 3BDT 103UM ARK-1
Version With Dual Driver

> 3BDT 103UM-W ARK-1
Liquid Cooled Version With Dual Driver

Main Features

- UHF/VHF fully agile Transmitter
- Integrated GPS Professional Receiver.
- Integrated SNMP management with events store.
- Integrated GBE interface.
- Output Power remotely adjustable via MIP or SNMP with high dynamics, in step of 0.1 dB.
- "Soft-start" Circuit.
- Adaptive digital linear precorrection.
- Digital non linear precorrection with automatic curves loading for each standard, channel and power levels.
- Wide Range Power Supply 90-264 V AC in fuse-free configuration (SW Standby Switch).
- Typical MER: > 36 dB at all power levels and in all channels.
- Quick-acting protection circuits against overpowerand direct/reflected power.
- Protection against reflected power with automatic fold-back.

Il 3BDT ARK-1 è un trasmettitore ATSC Digitale dotato di Digital linear e non linear Precorrection. Inoltre, utilizza le più avanzate SWDT (Software Defined Trasmettitori) tecnologia, tipico di questa serie di prodotti, che consente un controllo completo del sistema attraverso vari modi: in remoto, utilizzando un contatto pulito, tramite comandi SNMP, via TCP / IP , utilizzando l'interfaccia grafica Web, o anche tramite un comando dedicato inserito nel flusso di trasporto. Un firmware innovativo permette l'elaborazione di segnali con margine d'errore pari a zero, grazie ad un'architettura interna a 32 bit. Interfacce funzionali sono disponibili per il totale controllo remoto dell'apparato tramite protocolli seriali o porte TCP / IP. Grazie al server Web interno, l'apparato può essere facilmente monitorato e configurato utilizzando una connessione LAN e un Web browser standard. Inoltre, il built-in server SNMP permette di eseguire qualsiasi tipo di automatismo di controllo remoto.

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Functional interfaces are available for total remote control of the apparatus by means of serial protocols or TCP/IP ports.
Thanks to the internal Web server the apparatus can be easily monitored and configured using a LAN connection and a standard Web browser. Moreover, the built-in SNMP server allows performing all types of automated remote control.

MODEL-SPECIFIC DATA

Model	Output band	Numbers of amplifierr	Working class	Dimensions	Digital output power (rms) without filter (Shoulders -36 dB @ F_0 ± 4,3 MHz)	Nominal analog output power (p.s.)
					ATSC	NTSC
3B DT 103UM ARK-1	UHF	4	AB	40 RU	4000 W	12000 W
3B DT 103UM-W ARK-1	UHF	4	AB	40 RU	4000 W	12000 W
3B DT 103TM ARK-1	VHF (III)	4	AB	40 RU	4000 W	12000 W
3B DT 103TM-W ARK-1	VHF (III)	4	AB	40 RU	4000 W	12000 W
3B DT 103FM ARK-1	VHF (I)	4	AB	40 RU	4000 W	12000 W
3B DT 103FM-W ARK-1	VHF (I)	4	AB	40 RU	4000 W	12000 W

Specifications and characteristics are subject to change without notice.

GENERAL

Working Class AB	3B DT 103 ARK-1
Cooling	Forced air or Liquid Cooled
Local control and monitoring	Extensive front panel control
Remote control and monitoring	Local terminal on RS-232 Web based Java interface Telnet access via Ethernet SNMP
Operating temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	220 V AC (3 ph.)

3BDT 203 ARK-1 ATSC

Digital Transmitter 24000W ps/8000W rms

Main Features

- UHF/VHF fully agile Transmitter
- Integrated GPS Professional Receiver.
- Integrated SNMP management with events store.
- Integrated GBE interface.
- Output Power remotely adjustable via MIP or SNMP with high dynamics, in step of 0.1 dB.
- “Soft-start” Circuit.
- Adaptive digital linear precorrection.
- Digital non linear precorrection with automatic curves loading for each standard, channel and power levels.
- Wide Range Power Supply 90-264 V AC in fuse-free configuration (SW Standby Switch).
- Typical MER: > 36 dB at all power levels and in all channels.
- Quick-acting protection circuits against overpowerand direct/reflected power.
- Protection against reflected power with automatic fold-back.

> 3BDT 203UM ARK-1
Version With Dual Driver

> 3BDT 203UM-W ARK-1
Liquid Cooled Version With Dual Driver

Il 3BDT ARK-1 è un trasmettitore ATSC Digitale dotato di Digital linear e non linear Precorrection. Inoltre, utilizza le più avanzate SWDT (Software Defined Trasmettitori) tecnologia, tipico di questa serie di prodotti, che consente un controllo completo del sistema attraverso vari modi: in remoto, utilizzando un contatto pulito, tramite comandi SNMP, via TCP / IP , utilizzando l'interfaccia grafica Web, o anche tramite un comando dedicato inserito nel flusso di trasporto. Un firmware innovativo permette l'elaborazione di segnali con margine d'errore pari a zero, grazie ad un'architettura interna a 32 bit. Interfacce funzionali sono disponibili per il totale controllo remoto dell'apparato tramite protocolli seriali o porte TCP / IP. Grazie al server Web interno, l'apparato può essere facilmente monitorato e configurato utilizzando una connessione LAN e un Web browser standard. Inoltre, il built-in server SNMP permette di eseguire qualsiasi tipo di automatismo di controllo remoto.

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Thanks to the internal Web server the apparatus can be easily monitored and configured using a LAN connection and a standard Web browser. Moreover, the built-in SNMP server allows performing all types of automated remote control.

MODEL-SPECIFIC DATA

Model	Output band	Numbers of amplifierr	Working class	Dimensions	Digital output power (rms) without filter (Shoulders -36 dB @ F_0 ± 4.3 MHz) ATSC	Nominal analog output power (p.s.) NTSC
3B DT 203UM ARK-1	UHF	8	AB	2 X 40 RU	8000 W	24000 W
3B DT 203UM-W ARK-1	UHF	8	AB	2 X 40 RU	8000 W	24000 W
3B DT 203TM ARK-1	VHF (III)	8	AB	2 X 40 RU	8000 W	24000 W
3B DT 203TM-W ARK-1	VHF (III)	8	AB	2 X 40 RU	8000 W	24000 W
3B DT 203FM ARK-1	VHF (I)	8	AB	2 X 40 RU	8000 W	24000 W
3B DT 203FM-W ARK-1	VHF (I)	8	AB	2 X 40 RU	8000 W	24000 W

Specifications and characteristics are subject to change without notice.

GENERAL

	3B DT 203 ARK-1
Working Class AB	
Cooling	Forced air or Liquid Cooled
Local control and monitoring	Extensive front panel control
Remote control and monitoring	Local terminal on RS-232 Web based Java interface Telnet access via Ethernet SNMP
Operating temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	220 V AC (3 ph.)

3BDT 133 ARK-1 ATSC

Digital Transmitter 18000W ps/6000W rms

> 3BDT 133UM ARK-1
Version With Dual Driver

> 3BDT 133UM-W ARK-1
Liquid Cooled Version With Dual Driver

Main Features

- UHF/VHF fully agile Transmitter
- Integrated GPS Professional Receiver.
- Integrated SNMP management with events store.
- Integrated GBE interface.
- Output Power remotely adjustable via MIP or SNMP with high dynamics, in step of 0.1 dB.
- “Soft-start” Circuit.
- Adaptive digital linear precorrection.
- Digital non linear precorrection with automatic curves loading for each standard, channel and power levels.
- Wide Range Power Supply 90-264 V AC in fuse-free configuration (SW Standby Switch).
- Typical MER: > 36 dB at all power levels and in all channels.
- Quick-acting protection circuits against overpowerand direct/reflected power.
- Protection against reflected power with automatic fold-back.

Il 3BDT ARK-1 è un trasmettitore ATSC Digitale dotato di Digital linear e non linear Precorrection. Inoltre, utilizza le più avanzate SWDT (Software Defined Trasmettitori) tecnologia, tipico di questa serie di prodotti, che consente un controllo completo del sistema attraverso vari modi: in remoto, utilizzando un contatto pulito, tramite comandi SNMP, via TCP / IP , utilizzando l'interfaccia grafica Web, o anche tramite un comando dedicato inserito nel flusso di trasporto. Un firmware innovativo permette l'elaborazione di segnali con margine d'errore pari a zero, grazie ad un'architettura interna a 32 bit. Interfacce funzionali sono disponibili per il totale controllo remoto dell'apparato tramite protocolli seriali o porte TCP / IP. Grazie al server Web interno, l'apparato può essere facilmente monitorato e configurato utilizzando una connessione LAN e un Web browser standard. Inoltre, il built-in server SNMP permette di eseguire qualsiasi tipo di automatismo di controllo remoto.

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Thanks to the internal Web server the apparatus can be easily monitored and configured using a LAN connection and a standard Web browser. Moreover, the built-in SNMP server allows performing all types of automated remote control.

MODEL-SPECIFIC DATA

Model	Output band	Numbers of amplifierr	Working class	Dimensions	Digital output power (rms) without filter (Shoulders -36 dB @ F_0 ± 4.3 MHz) ATSC	Nominal analog output power (p.s.) NTSC
3B DT 133UM ARK-1	UHF	6	AB	2 X 40 RU	6000 W	18000 W
3B DT 133UM-W ARK-1	UHF	6	AB	2 X 40 RU	6000 W	18000 W
3B DT 133TM ARK-1	VHF (III)	6	AB	2 X 40 RU	6000 W	18000 W
3B DT 133TM-W ARK-1	VHF (III)	6	AB	2 X 40 RU	6000 W	18000 W
3B DT 133FM ARK-1	VHF (I)	6	AB	2 X 40 RU	6000 W	18000 W
3B DT 133FM-W ARK-1	VHF (I)	6	AB	2 X 40 RU	6000 W	18000 W

Specifications and characteristics are subject to change without notice.

GENERAL

Working Class AB	3B DT 133 ARK-1
Cooling	Forced air or Liquid Cooled
Local control and monitoring	Extensive front panel control
Remote control and monitoring	Local terminal on RS-232 Web based Java interface Telnet access via Ethernet SNMP
Operating temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	220 V AC (3 ph.)

3BMCT Solutions

TRANSMITTER

ASI > MOD > RF

DVB-T
DVB-H

PAL

Multichannel sulitions
Up to 7+1 Channel Transmitters and Gap Filler

3BMCT

Multichannel Transmitter (up to 7+1 channels)

> 3BMCT 050UB 7+1

> Available also in 1+1 cofiguration in a single rack unit.

Main Features

- 7 + 1 Multichannel Transmitters with internal automatic changeover
- Multi-standard (DVB-T/H and ITU.470 PAL) modulator with integrated satellite receiver, common interface de-scrambler and MPEG-2 / H264 - AVC decoder.
- OUTPUT:
  - Multiple RF channels: up to 7 channels can be frequency multiplexed to output
  - 1 W rms output nominal power in DVB-T/H standard
  - 5 W ps output nominal power in PAL standard
- MANAGEMENT: N+1 redundancy system with up to 7 main devices and 1 reserve.

The multichannel system provides up to eight physical slots.
Devices 1 to 7 are the main modulators, each of them is-config ured with different parameters in order to transmit either DVB-T or ITU PAL modulation, with different parameters and also dif ferent output channels.
Device 0 is the reserve, used for redundacy in case of failure of one of the main transmitters.

The role of each device inside the system is defined by its posi tion in the chassis.
Each device has in memory a mapping of all the settings of each possible position. This way, any device can perform the same functionalities as any other in the same Multichannel sys tem. This ensure better spare part management and logistics.

Each device uses a keyword (magic number) that enables the device to work in the system. On new blades, this keyword has a default invalid value that is set to valid only after a proper configuration of the device itslef is performed.

A new device inserted in the system must be configured before to activate, by performing the following operations:

- Download the system devices configuration. This operation polls the other system devices and transfer the configuration of all the system devices (including the configuration of the former device present in this slot) in the EEPROM memory.
- If a device was previously present and configured in this slot perform a Load command to run the correct configuration downloaded on EEPROM.
- If a new configuration is needed, configure the device settings (by manual configuration or by file loading via GUI)
- Save the configuration. By performing this command the con figuration is saved inside the device EEPROM and transferred to the memory of all the others devices of the system.
- The last operation also write the correct magic number in memeory and activates the device.

Performing a memory reset command before moving a device to a different system is mandatory to avoid uncorrect and potentially destructive configurations.

N+1 REDUNDANCY

The system is composed by N (up to 7) Multichannel elements and 1 reserve. Each device stores its own currently running set of parameters, used to define e.g. modulation mode, output channel, input satellite settings and modulation. It also stores all the other devices configurations.

One device is used as reserve: it stores all the other devices configurations in order to provide redundancy in case of failure of one of the main modulators.
The reserve device normally is in stand-by mode waiting to be enabled from a failure signal from one of the main modulators.

MANAGEMENT

The System makes use of a shared serial bus where every unit has its unique address.
There is a central serial proxy which manages the communica tion with each board. All the board, in their default state, are in listening mode.
A dedicated command tells to all the boards which is the unit to which the central node needs to communicate.The selected unit performs the necessary configuration communications. When the communication ends all the boards enter again the 'listening' mode.

ALARM MANAGEMENT

Hereafter follows a list of alarms:

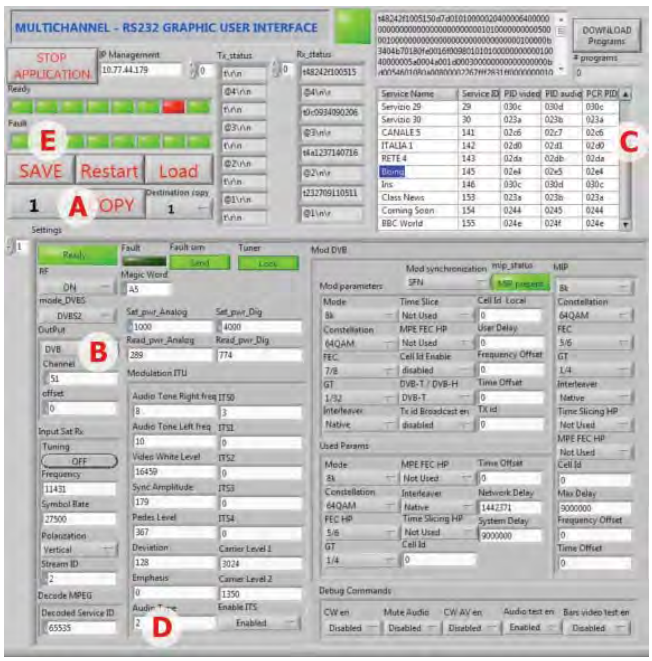
- Satellite input not locked - The satellite input signal did not lock.
- Satellite input high BER - A BER higher than a programmed threshold was measured in the satellite input signal.
- Satellite input low S/N - A S/N lower than a programmed threshold was measured in the satellite input signal.
- No input TS - a valid TS was not found at the descrmabled input of the modulator.
- De-scrambling error - the receiver returned error while de scrambling.
- Input service not found - the service selected is not valid or no more present in the input TS.
- Failed device enabling - the device has an incorrect keyword and needs to be re-configured before being enabled.
- 10 MHz clock alarm - the 10 MHz failed to lock to the exter nal 10 MHz.
- 1 PPS alarm - 1 PPS external signal was missing.
- System delay alarm - the system cannot lock its internal reference timing to the STS received from MIP and cannot perform a correct SFN transmission.
- No MIP alarm - a valid MIP packet was not found in the input TS.

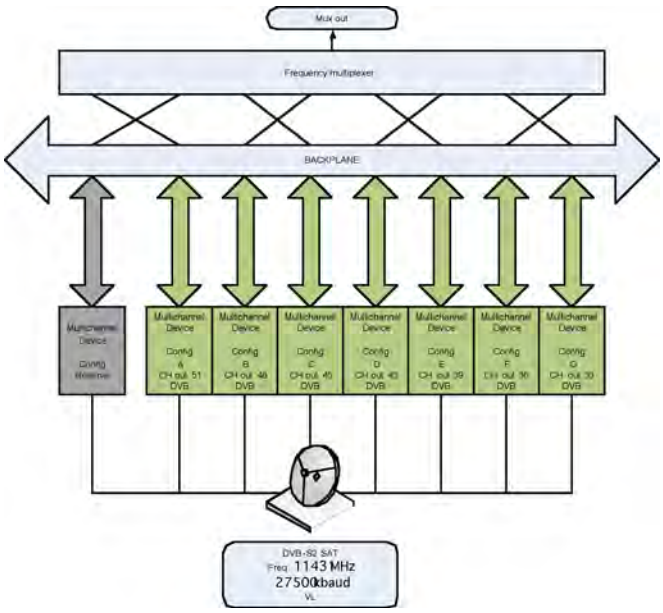
Graphic User Interface

A central management interface is dedicated to the configuration and monitoring of the System. Enter the IP address of the System in order to connect it.
To configure the units:

- Select from the upper left button the unit to be configured (label A).
- Select the appropriate mode, PAL or DVB, for the unit (label B).
- In case of PAL mode, select with a double click the program to be converted from MPEG2 o PAL from the upper right section (label C)
- Note that the program is selected and correctly reported in lower left corner (label D)
- Save the settings (label E)

When saving, the configuraion of the board is sent to all the others. Repeat the same for all the primary N boards.



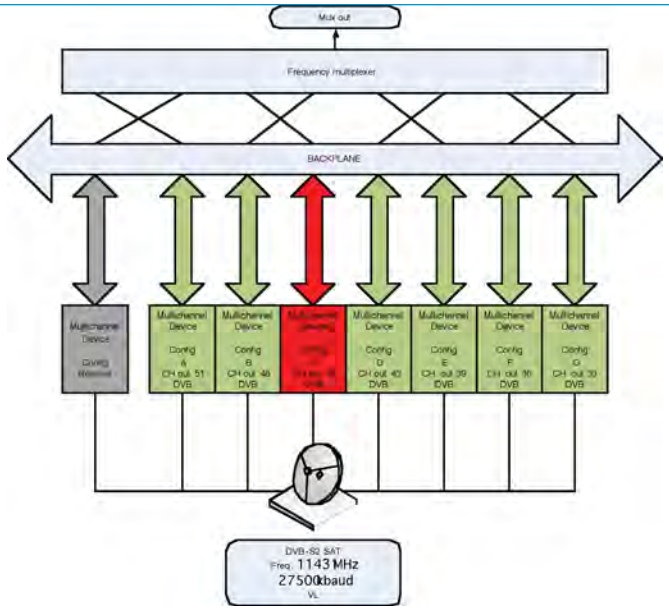


Example topology: 7 channels + 1 reserve. Failure on device n.3

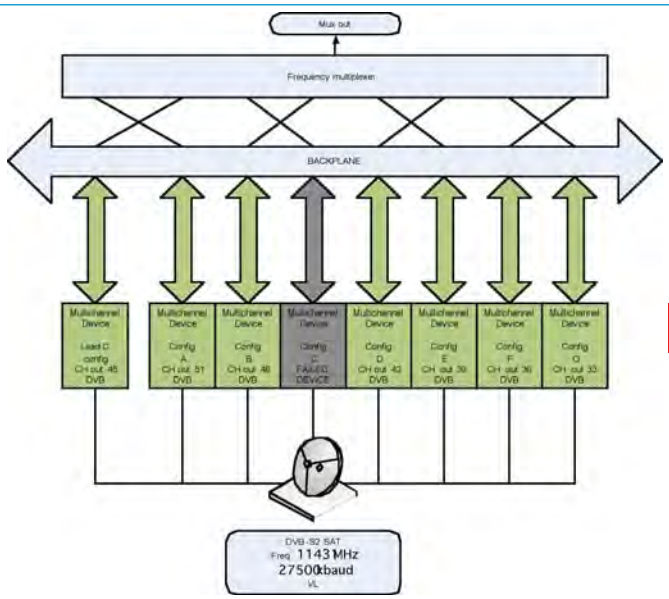
> Seven transmitters are transmitting on the following channels using DVB-T modulation:
A: CH 51, B: CH 48, C: CH 45, D: CH 42,
E: CH 39, F: CH 36,G: CH 33

> The satellite input is set with the following parameters:
- Bouquet: Mediaset 2
- Satellite: HotBird 13° E
- Standard: DVB-S2
- Frequency: 11431 MHz
- Simbol Rate: 27500 kbaud
- Polarization: Vertical
- Input stream id: Not Set

The reserve device is in stand-by waiting for the failure of one of the main trans mitters.



> Multichannel device C fails due to an hardware problem.
> A Fail alarm is raised on the backplane line on which the device is connected



The reserve device load the parameters of the failed device and starts to transmit acting as the Multichannel C.

Headend Solutions

DVB-T
DVB-H

PAL

Encoders, Decoders, Seamless Switching, SFN Re-Multiplexer, MFP Multiplexer

3BXBT 200

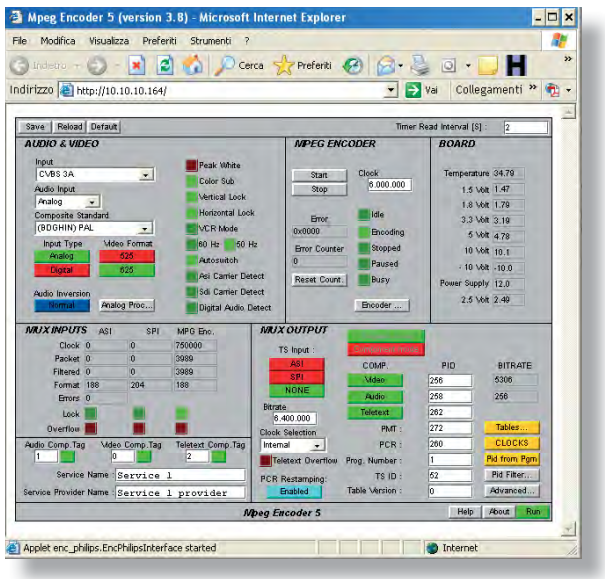
MPEG2 4:2:0 professional encoder with integrated multiplexer, 1 Video + 2 Audio, analog and digital input, TS output

> 3BXBT 200

Main Features

- C Broadcast quality encoding of both PAL and NTSC signals.
- Analogue and digital inputs.
- Integrated noise reducer.
- PID filtering function.
- PCR restamping.
- Management of SI / PSIP tables.
- Teletext signal support (ETS 300 706).
- “Low-delay” mode.
- Integrated multiplexer for encoder cascading.
- Three multiplexing modalities:
  Stand alone: generates a TS containing a single program with locally produced components.
  Program mode: adds a locally produced program to the TS at the input.
  Component mode: adds locally encoded audio, video and teletext to a program in the TS in transit, for use in MHP so as to add audio/visual components in a pre-generated program with MHP contributions.
- Graphic management interface via Web.

The models in this series allow a high-quality compression of video and audio signals and have been designed for applica tions of distribution or contribution guaranteeing state of the art performance.
At input, the encoders accept both digital and analogue signals in different formats and standards. Models with 4:2:2 or 4:2:0 encoding profiles are available.
A built-in multiplexer allows encoders cascading so as to opti mize, or in certain cases avoid, the use of external multiplexers.
A Java interface enables complete remote control and monito ring of the equipment through a standard web browser while an internal bus communicates with the intuitive local control panel or with serial ports mounted at the rear side.
Signal processing and filtering functions before and after en coding, the complete possibilities in configuration and the easy management of these encoders guarantee a significant flexibi lity in their use in various applications to meet the highest de mands for quality and efficiency among broadcasters.



> Main Java Interface Page

MPEG-2-ENCODERS

VIDEO ENCODING	
Analog input	2 x Composite, 1 V p.p., BNC 75 Ω (RGB, Y/C, YUV optional)
Digital input	SDI (with audio embedded)
Video standards	PAL / NTSC
Vertical resolution	625 (PAL), 525 (NTSC), 602 (mod. XBT 100 only)
Horizontal resolution	720 (mod. XBT 100) 720, 480, 352 (mod. XBT 200)
AUDIO ENCODING	
Analog input	2 x mini-XLR, 600 Ω, balanced
Digital input	AES/EBU SDI (embedded with video)
Audio mode	Stereo, mono, joint stereo, dual sound
Encoding rate	Up to 384 kbps
Sampling rates	32 kHz, 44.1 kHz, 48 kHz
PROCESSING	
Video encoding formats	D1, 1/2 D1 2/3 D1 SIF
Audio encoding format	MPEG-1, Layer 2 MPEG-2 (mod. XBT 200 only) AC-3 (mod. XBT 200 only)
Multiplexing capability	Built-in multiplexer for encoder cascading
Pre-processing	Digital noise reduction
VBI processing	Teletext ETS 300 706 (mod. XBT 200 only)
OUTPUTS	
Number of outputs	2 x ASI + 1 x LVDS
ASI output connector	BNC
ASI output impedance	75 Ω
LVDS output connector	Sub-D 25
LVDS output impedance	100 Ω
Output TS bit rate	Up to 108 Mbits/s (Max encoding bit rate: 25 Mbits/s)
TRANSPORT STREAM PROCESSING	
PID filtering SI / PSIP table PCR Restamping Low delay mode (mod. XBT 100 only)	
GENERAL	
Local control and monitoring	Extensive front panel control Local terminal on RS-232
Remote control and monitoring	Web based Java interface Telnet access via Ethernet
Operating temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Power supply	90 to 264 V AC, 12 V DC
Dimensions	1 RU (19" rack)

2 CHANNELS AUDIO ENCODER

Analog input	2 x mini-XLR, 600 Ω, balanced
Digital input	SPDIF
Audio mode	Stereo, mono, joint stereo, dual sound
Encoding rate	Up to 384 kbps
Sampling rates	32 kHz, 44.1 kHz, 48 kHz
Multiplexing capability	Built-in multiplexer for encoder cascading
OUTPUTS	
Output interfaces	ASI + LVDS
ASI output connector	BNC
ASI output impedance	75 Ω
LVDS output connector	Sub-D 25
LVDS output impedance	100 Ω
GENERAL	
Local control and monitoring	Extensive front panel control Local terminal on RS-232
Remote control and monitoring	Web based Java interface Telnet access via Ethernet
Operating temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Power supply	90 to 264 V AC, 12 V DC
Dimensions	1 RU (19" rack)

3BXBT 704

DVB-T receiver with decoder

> 3BXBT 704

Main Features

INPUTS
- Compliant DVB-T RF input
- MPEG-2 Digital TS compliant ASI input
- PAL RF (N connector)

OUTPUTS
- DVB-T Compliant RF input
- MPEG-2 Digital TS compliant ASI OUT
- channels Two (L/R) balanced analog audio output.
- Doubled SDI interface for digital video with embedded audio.

3BXBT 704 is a DVB receiver with decoder functionality, spe cially designed for the switchover transition period.
It works in both analog and digital conditions (both RF and ASI Inputs).

In analogue condition: it receives an RF input signal and deliv ers it throught its ouptus connectors. It is a bypass for the RF analog signal, suitable for the pre-switchover phase.

In digital condition: it receives an RF digital input signal and de codes the contents. It extracts a program from the bouquet and delivers it into an ASI output signal. This ASI can be perfectly managed by a SDT Transmitter Series, which converts the ASI signal into an RF analogue output signal. This signal feeds a transposer.

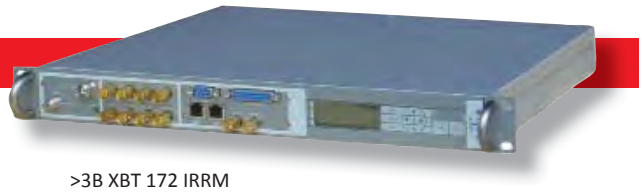
Features: program recognising function.

Outputs from multiplexers are:
- External GPS 10 MHz reference input.
- Doubled ASI interface for TS bypass output
- Parallel decoding of the two input stream
- X port connector for low level software interface
- Local User Interface with buttons pad and LCD display
- Digital MPEG-2 TS compliant ASI input
- Doubled analog CVBS video output
- S/P Dif digital audio output.
- Events logging for board's history recording
- Remote upgrade of firmware and software

Bypass Status (ON/OFF) Selectable by local or remote:
- DVB-T compliant demodulator.
- Input frequency range: B III / IV - V
- Channel bandwidth: 6 MHz, 7 MHz, 8 MHz
- Demodulatore 2K and 8K COFDM.
- Modi di modulazione: QPSK, 16-QAM, 64-QAM
- FEC modes: 1/2, 2/3, 3/4, 5/6, 7/8.
- Guard interval modes: 1/32, 1/16, 1/8, 1/4.
- Fully automatic Transmission Parameters detection.
- 1 ASI input interface.
- 2 ASI output interface.
- 1 SPI Output interface.
- RS232 interface
- Ethernet interface.

3BXBT 172 IRRM

Seamless Multi-Input Switcher



>3B XBT 172 IRRM

Main Features

Inputs automatically selection
The IRRM manages redundancy of three logic inputs with the following priority:

- Input 1
- Input 2
- Input 3

Each logic input can be associated to one of the physical input available (ASI1, ASI2, Tuner -DVB-S/S2-, GbE2). The IRRM 172 switches automatically to the next logic inputs when the actual selected one is invalid.

Synchronization
The IRRM 172 needs the 10MHz synchronization with the TS input source device and with the following network device to guarantee a data single bitrate reference.
The 10MHz synchronization is possible thanks to the selection of GPS or external source as frequency reference.
The 10MHz outputs permits to use a device as frequency reference source for the network following device.

The IRRM 172 is designed mainly to manage TS redun dancy in SFN-DVB system. It guarantees the seamless switching between three different inputs.

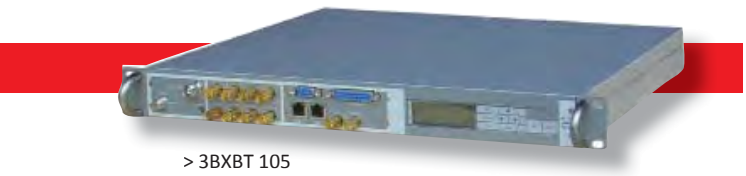
At the start up the first valid input detected is used as output source. The input is considered valid if its TS is SFN adapted with correct MIP and mega frame structures (according to TS 101 191 and ETSI EN 300744).
When the input selected is not considered valid, an automatic switching to the following valid input is acted.

Output	TS
ASI 1 OUT	Available
ASI 2 OUT	Available
ASI 3 OUT	Available
ASI 4 OUT	Available
GbE 1 (used for managing)	
GbE 2	Available

Input	TS
ASI 1	Supported
ASI 2	Supported
Tuner	Supported
GbE 1 (used for managing)	
GbE 2	Supported

3BXBT 105

Re-Multiplexer with SFN Adapter (for regionalization content)



> 3BXBT 105

Main Features

Remote control interfaces
RS-232
- Dedicated DB9 connector
- Data only
- Also available on remote control DB25 connector
- 230kbit

Relays
- 4 relays for alarm/info
- NO & NC contacts at connector
- Available on remote control DB25 connector

Opto couplers
- 4 opto couplers for command
- Internal floating current generator
- Common anode
- 2 mA max on current

Functions
- Default: 1 relay alarm/ok
- Option “N1”: use relay and opto for SSBT N+1 system
- Option “ALG”: use relay and opto according RAI specs

3BXBT 105 IRRM is an Integrated Satellite Receiver, Synchronous Remultiplexer and SFN adapter allowing the regionalization of TS content received and SFN synchronization.

IRRM105 multiplexer performs the following basic functions:
- GPS receiver capable of synchronizing internal time generators
- Auto-PID filtering for Services regionalization
- Auto-restamping of SI for Services regionalization
- Megaframe Information Packets generation synchronized by MFP system
- PID re-mapping on each logical input
- Network adaptation to the exact bit rate according to DVB-T/H RF parameters with PCR re-stamping

Inputs to multiplexers are:
- ASI transport streams
- 1 RF connector for DVB-S / S2 reciver
- 1 RTP clients for RTP/DP encapsulated Transport Streams

Outputs from multiplexers are:
- ASI transport streams
- 1 RTP/DP Server carrying encapsulated Transport stream
- IGMP generation

As any multiplexer of the IRRM family, it has built-in:
- web server to dispatch a Java applet for interactive management
- java applet tested on most popular browser
- java applet downloadable for local execution
- SNMP server for remote control internal file system accessible via TCP/IP and TFTP protocols for easy remote upgrade
- ultra fast storage are for event system storage
- telnet server for access via character based terminals
- Geographical coordinates available
- Battery powered local time clock automatically synchronized to UTC
- 8 trap address for automatic alarm/monitoring

Physical
- 1U rack frame
- Size: (W) 484 mm x (H) 45 mm x (D) 346 mm
- Weight: 4 kg

Power supply
- 90-270 VAC PFC corrected power supply
- Nominal power 38 VA
- Power factor: 0.95
- Max inrush current 15A
- M6 screw for extra ground connection
- Power cord:
  - Default – Italy
  - Option “UK” – UK standard
  - Option “DIN” – Germany and central Europe DIN connector
  - Option “US” – US standard

ASI Inputs
- EN 500083-9 compliant
- BNC connectors 75 ohm
- Maximum bit rate 155 Mbit

RF Input
- DVB-S / DVB-S2 compliant
- F type female connector 75 ohm
- Input frequency 950-2150 MHz
- Ethernet connection
- 10/100/1000 Mbit Ethernet connector
- 1 IP address for web server, management, SNMP server, Telnet, TFTP and remote update
- 2 IP address/port for RTP/UDP servers
- 2 IP address/port for RTP/UDP clients
- RTP protocol: ProMpeg cop3 with no FEC packet processing/generation, selectable 90KHz/27MHz timestamps

GPS input
- TNC connector 50 ohm
- Phantom power 3 Volt 50 mA short circuit protected
- GPS L1
- 12 channel simultaneous operation
- 45 s typical cold start TTFF
- 38 s typical warm start TTFF
- 5 s typical hot start TTFF
- <0.5 s reacquisition
- Sensitivity Acquisition/Tracking -185dBW / -185dBW
- 30ns rms accuracy, <10ns resolution

ASI output
- EN 500083-9 compliant
- BNC connectors 75 ohm
- Maximum bit rate 155 Mbit

Front Panel
- 4x20 alpha display
- 8 button navigation
- Basic setup and status

Reference inputs
- 10MHz
  - SMB connector
  - 1Vpp sine
  - 50 ohm terminated
  - AC coupled
  - option “HIZ” available
- 1 sec PPS
  - SMB connector
  - 0.4 VIL
  - 1.7 VIH
  - Dc coupled
  - 50 ohm terminated
  - option “HIZ” available

Reference outputs
- 10MHz
  - SMB connector
  - 1Vpp sine
  - 50 ohm
  - DC coupled
- 1 sec PPS
  - SMB connector
  - 0.2 VOL @ 64 mA IOL
  - 2.2 VOH @ 64 mA IOH
  - Dc coupled
  - 50 ohm capable

Software
- Java applet requires Java 6 Version 13 or more recent
- Java applet tested on Safar, Internet Explorer, Mozilla
- Browser will download automatically suitable version of Java if connected to internet

AVAILABLE OPTIONS

- “UK” – UK standard power cord
- “DIN” – Germany and central Europe DIN connector
- “US” – US standard power cord
- “HIZ” - 10MHz option “HIZ” available
- “HIZ” - 1 sec PPS option “HIZ” available
- “N1” - use relay and opto for SSBT N+1 system
- “ALG” - use relay and opto according RAI specs

3BXBT 525

DVB TS SFN Multiplexer

> 3BXBT 525

Main Features

Remote control interfaces
RS-232
- Dedicated DB9 connector
- Data only
- Also available on remote control DB25 connector
- 230kbit

Relays
- 4 relays for alarm/info
- NO & NC contacts at connector
- Available on remote control DB25 connector

Opto couplers
- 4 opto couplers for command
- Internal floating current generator
- Common anode
- 2 mA max on current

Functions
- Default: 1 relay alarm/ok
- Option “N1”: use relay and opto for SSBT N+1 system
- Option “ALG”: use relay and opto according RAI specs

3BXBT525 SFN Multiplexer is a dual multiplexer and a dual synchronous SFN adapter allowing easy creation of DVB-T/H SFN systems.

- 3BXBT525 MFP Multiplexer performs the following basic functions:
- GPS receiver capable of synchronizing internal time generators
- Megaframe Information Packets generation (2x – one for High Priority, other for Low priority) with internal carousel of functions
- Software interface for external carousel of MIP functions
- 16 Carousel of PSI/SI tables with variable bit rate(2x – one for High Priority, other for Low priority)
- Software interface to external PSI/SI tables generators
- Storage of internal carousels content
- Multiplexing (2x – one for High Priority, other for Low priority) of
  - Multiplex Information Packets
  - 4 transport streams selected between 10 physical inputs with PCR re-stamping
  - PSI/SI packets from carousels
- PID filtering and re-mapping on each logical input (4x2 - four for High Priority, other for Low priority)
- Network adaptation to the exact bit rate (2x – one for High Priority, other for Low priority) according to DVB-T/H RF parameters with PCR re-stamping
- Graphical display of input TS data based on SI/PSI analysis
- Option “8IN”: Multiplexing of 8 logical inputs in a single output TS instead of 4 for 2 channels

Inputs to multiplexers are
- 8 ASI transport streams
- 1 SPI connector for multiplexer extension
- 2 RTP clients for RTP/UDP encapsulated Transport Streams on 2 different ports of a single IP address.

Outputs from multiplexers are
- 4 ASI transport streams carrying 2 the High Priority transport stream and 2 the Low Priority transport stream
- 2 RTP/UDP Server carrying encapsulated Transport stream for high and Low priority on 2 different IP address
- IGMP generation
- SPI output for system extension

As any multiplexer of the 3BXBT family, it has built-in:

- web server to dispatch a Java applet for interactive management
- Java applet tested on most popular browser
- Java applet downloadable for local execution
- SNMP server for remote control
- internal file system accessible via TCP/IP and TFTP protocols for easy remote upgrade
- ultra fast storage are for event system storage
- telnet server for access via character based terminals
- Geographical coordinates available
- Battery powered local time clock automatically synchronized to UTC
- 8 trap address for automatic alarm/monitoring

Physical
- 1U rack frame
- Size: (W) 484 mm x (H) 45 mm x (D) 346 mm
- Weight: 4 kg

Power supply
- 90-270 VAC PFC corrected power supply
- Nominal power 38 VA
- Power factor: 0.95
- Max inrush current 15A
- M6 screw for extra ground connection
- Power cord:
  - Default – Italy
  - Option “UK” – UK standard
  - Option “DIN” – Germany and central Europe DIN connector
  - Option “US” – US standard

ASI Inputs
- EN 500083-9 compliant
- BNC connectors 75 ohm
- Maximum bit rate 155 Mbit

SPI Input
- EN 500083-9 compliant
- DB25 female connector
- Maximum bit rate 27 Mbytes

Ethernet connection
- 10/100/1000 Mbit Ethernet connector
- 1 IP address for web server, management, SNMP server, Telnet, TFTP and remote update
- 2 IP address/port for RTP/UDP servers
- 2 IP address/port for RTP/UDP clients
- RTP protocol: ProMpeg cop3 with no FEC packet processing/generation, selectable 90KHz/27MHz timestamps

GPS input
- TNC connector 50 ohm
- Phantom power 3 Volt 50 mA short circuit protected
- GPS L1
- 12 channel simultaneous operation
- 45 s typical cold start TTFF
- 38 s typical warm start TTFF
- 5 s typical hot start TTFF
- <0.5 s reacquisition
- Sensitivity Acquisition/Tracking -185dBW / -185dBW
- 30ns rms accuracy, <10ns resolution

ASI output
- EN 500083-9 compliant
- BNC connectors 75 ohm
- Maximum bit rate 155 Mbit

SPI output
- EN 500083-9 compliant
- DB25 female connector
- Maximum bit rate 27 Mbytes

Front Panel
- 4x20 alpha display
- 8 button navigation
- Basic setup and status

Reference inputs
- 10MHz
  - SMB connector
  - 1Vpp sine
  - 50 ohm terminated
  - AC coupled
  - option “HIZ” available
- 1 sec PPS
  - SMB connector
  - 0.4 VIL
  - 1.7 VIH
  - Dc coupled
  - 50 ohm terminated
  - option “HIZ” available

Reference outputs
- 10MHz
  - SMB connector
  - 1Vpp sine
  - 50 ohm
  - DC coupled
- 1 sec PPS
  - SMB connector
  - 0.2 VOL @ 64 mA IOL
  - 2.2 VOH @ 64 mA IOH
  - Dc coupled
  - 50 ohm capable

Software
- Java applet requires Java 6 Version 13 or more recent
- Java applet tested on Safar, Internet Explorer, Mozilla
- Browser will download automatically suitable version of Java if connected to internet
- SNMP is version 2 compliant
- MIB files included in CD

AVAILABLE OPTIONS

- “8IN” - Multiplexing of 8 logical inputs in a single output TS instead of 4 for 2 channels
- “UK” – UK standard power cord
- “DIN” – Germany and central Europe DIN connector
- “US” – US standard power cord
- “HIZ” - 10MHz option “HIZ” available
- “HIZ” - 1 sec PPS option “HIZ” available
- “N1” - use relay and opto for SSBT N+1 system
- “ALG” - use relay and opto according RAI specs

3BXBT 538

MFP Multiplexer (Metric Feed Packets)

> 3BXBT 538

Main Features

Remote control interfaces
RS-232
- Dedicated DB9 connector
- Data only
- Also available on remote control DB25 connector
- 230kbit

Relays
- 4 relays for alarm/info
- NO & NC contacts at connector
- Available on remote control DB25 connector

Opto couplers
- 4 opto couplers for command
- Internal floating current generator
- Common anode
- 2 mA max on current

Functions
- Default: 1 relay alarm/ok
- Option “N1”: use relay and opto for SSBT N+1 system

3BXBT538 MFP Multiplexer is the head end main building block of the powerful SSBT regionalization system.

3BXBT538 MFP Multiplexer performs the following basic functions:
- GPS receiver capable of synchronizing internal time generators
- Metric Feed Packets generation
- Multiplexing of Metric Feed Packets and 4 transport streams se lected between 10 physical inputs with PCR re-stamping
- Perform network adaptation to the final Fat Pipe output transport stream bit rate

Inputs to multiplexer are:
- 8 ASI transport streams
- 1 SPI connector for multiplexer extension
- 2 RTP clients for RTP/UDP encapsulated Transport Streams on 2 different ports of a single IP address.

Outputs from multiplexer are:
- 4 ASI transport streams carrying all the same MFP transport stream
- 1 RTP/UDP Server carrying encapsulated Transport stream
- SPI output for system extension
- As any multiplexer of the XBT family, it has built-in:
- Web server to dispatch a Java applet for interactive man agement
- Java applet tested on most popular browser
- Java applet downloadable for local execution
- SNMP server for remote control
- Internal file system accessible via TCP/IP and TFTP proto cols for easy remote upgrade
- Ultra fast storage are for event system storage
- Telnet server for access via character based terminals
- Geographical coordinates available
- Battery powered local time clock automatically synchronized to UTC
- 8 trap address for automatic alarm/monitoring

Physical
- 1U rack frame
- Size: (W) 484 mm x (H) 45 mm x (D) 346 mm
- Weight: 4 kg

Power supply
- 90-270 VAC PFC corrected power supply
- Nominal power 38 VA
- Power factor: 0.95
- Max inrush current 15A
- M6 screw for extra ground connection
- Power cord:
  - Default – Italy
  - Option “UK” – UK standard
  - Option “DIN” – Germany and central Europe DIN connector
  - Option “US” – US standard

ASI Inputs
- EN 500083-9 compliant
- BNC connectors 75 ohm
- Maximum bit rate 155 Mbit

SPI Input
- EN 500083-9 compliant
- DB25 female connector
- Maximum bit rate 27 Mbytes

Ethernet connection
- 10/100/1000 Mbit Ethernet connector
- 1 IP address for web server, management, SNMP server, Telnet, TFTP and remote update
- 1 IP address for RTP/UDP server
- 1 IP address for RTP/UDP client
- RTP protocol: ProMpeg cop3 with no FEC packet processing/generation

GPS input
- TNC connector 50 ohm
- Phantom power 3 Volt 50 mA short circuit protected
- GPS L1
- 12 channel simultaneous operation
- 45 s typical cold start TTFF
- 38 s typical warm start TTFF
- 5 s typical hot start TTFF
- <0.5 s reacquisition
- Sensitivity Acquisition/Tracking -185dBW / -185dBW
- 30ns rms accuracy, <10ns resolution

ASI output
- EN 500083-9 compliant
- BNC connectors 75 ohm
- Maximum bit rate as per DVB-T standard

SPI output
- EN 500083-9 compliant
- DB25 female connector
- Maximum bit rate as per DVB-T standard

Front Panel
- 4x20 alpha display
- 8 button navigation
- Basic setup and status

Reference inputs
- 10MHz
  - SMB connector
  - 1Vpp sine
  - 50 ohm terminated
  - AC coupled
  - option “HIZ” available
- 1 sec PPS
  - SMB connector
  - 0.4 VIL
  - 1.7 VIH
  - Dc coupled
  - 50 ohm terminated
  - option “HIZ” available

Reference outputs
- 10MHz
  - SMB connector
  - 1Vpp sine
  - 50 ohm
  - DC coupled
- 1 sec PPS
  - SMB connector
  - 0.2 VOL @ 64 mA IOL
  - 2.2 VOH @ 64 mA IOH
  - Dc coupled
  - 50 ohm capable

Software
- Java applet requires Java 6 Version 13 or more recent
- Java applet tested on Safar, Internet Explorer, Mozilla
- Browser will download automatically suitable version of Java if connected to internet
- SNMP is version 2 compliant
- MIB files included in CD

AVAILABLE OPTIONS

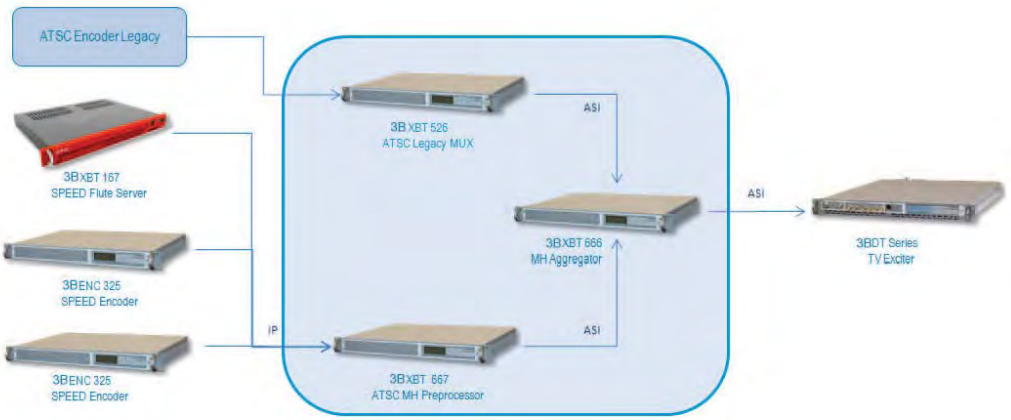
- “UK” – UK standard power cord
- “DIN” – Germany and central Europe DIN connector
- “US” – US standard power cord
- “HIZ” - 10MHz option “HIZ” available
- “HIZ” - 1 sec PPS option “HIZ” available
- “N1” - use relay and opto for SSBT N+1 system

Series ATSC-MH Headend

Digital Headend for Legacy and Mobile DTV

ATSC-MH

ATSC
M-H



Complete headend solutions for legacy and mobile DTV

3BXBT 167

ATSC-MH Flute Server Platform

>3BXBT 167

Main Features

- Fully compliant DVB-IP/OMA-BCAST and ATSC-MH compliant
- Multi session support
- Multi ESG support
- ESG compression
- XML, DVB-IPDC and OMA-BCAST file input
- DVB-IDC XML fragment support
- DVB-IPDC ESG container support
- Flute Output
- OMA-BCAST SGDD support
- OMA-BCAST SGDU support
- Embedded Linux O.S.
- NTP client

3BXBT167 flute server is the powerful SSBT service guide generator for ATSC MH solution.

Physical

- 1U rack frame

Size :

- W:19,01”
- H: 1,7”
- D: 13,622”
- Weight: 5 kg

Power supply

- 110-240V 5A 50/60Hz
- 250 W max
- Max inrush current 5A
- Power cord
- US standard

Ethernet connection

- 10/100/1000 Mbit Ethernet connector

Front Panel connectors

- 2x USB connectors
- 1 RS232 connector

Back Panel connectors

- 3x USB connectors
- 1 VGA connector
- 1 HDMI connector
- 1 audio connector

3BXBT 526

ATSC Multiplexer

> 3BXBT 526

Main Features

- Network adaptation at exact 19.39 Mbps in 6 Mhz channel.
- Output interleaved Transport stream formed by multiplexed Transport stream and a MH transport stream with predefined PIDTable PSI insertion
- 16 Carousel of PSI/SI tables with variable bit rate
- Storage of internal carousels content
- Graphical display of input TS data based on SI/PSI analysis

3BXBT526 ATSC Multiplexer is a 3BSBT ATSC multiplexer compliant to ATSC A/53 and A/65 standard .

Inputs to multiplexer are:
- 8 ASI or 8 SSI transport streams
- 1 SPI connector for multiplexer extension
- 2 RTP clients for RTP/UDP encapsulated Transport Streams on 2 different ports of a single IP address.

Outputs from multiplexer are:
- 4 ASI transport streams carrying all the same transport stream out
- 1 RTP/UDP Server carrying encapsulated Transport stream
- SPI output for system extension

As any multiplexer of the XBT family, it has built-in:
- Web server to dispatch a Java applet for interactive manage ment
- Java applet tested on most popular browser
- Java applet downloadable for local execution
- SNMP server for remote control
- GPS receiver capable of synchronizing internal time genera tors
- Internal file system accessible via TCP/IP and TFTP protocols for easy remote upgrade
- Telnet server for access via character based terminals
- Geographical coordinates available
- Battery powered local time clock automatically synchronized to UTC
- 8 trap address for automatic alarm/monitoring

Physical
- 1U rack frame

Size :
- W:19,05”
- H: 1,7”
- D: 13,62”
- Weight: 4 kg

Power supply
- 90-270 VAC PFC corrected power supply
- Nominal power 38 VA
- Power factor: 0.95
- Max inrush current 15A
- M6 screw for extra ground connection
- Power cord
  - Default – Italy
  - Option “UK” – UK standard
  - Option “DIN” – Germany and central Europe DIN connector
  - Option “US” – US standard

ASI Inputs
- EN 500083-9 compliant
- BNC connectors 75 ohm
- Maximum bit rate 155 Mbit

SSI Inputs
- EN 500083-9 compliant
- BNC connectors 75 ohm
- Nominal bit rate 19.38 Mbits

SPI input
- EN 500083-9 compliant
- DB25 female connector
- Maximum bit rate 27 Mbytes

Ethernet connection
- 10/100/1000 Mbit Ethernet connector
- 1 IP address for web server, management, SNMP server, Telnet, TFTP and remote update
- 1 IP address for RTP/UDP server
- 1 IP address for RTP/UDP client
- RTP protocol: ProMpeg cop3 with no FEC packet processing/generation

GPS input
- TNC connector 50 ohm
- Phantom power 3 Volt 50 mA short circuit protected
- GPS L1
- 12 channel simultaneous operation
- 45 s typical cold start TTFF
- 38 s typical warm start TTFF
- 5 s typical hot start TTFF
- <0.5 s reacquisition
- Sensitivity Acquisition/Tracking -185dBW / -185dBW
- 30ns rms accuracy, <10ns resolution

ASI output
- EN 500083-9 compliant
- BNC connectors 75 ohm
- Maximum bit rate as per DVB-T standard

SPI output
- EN 500083-9 compliant
- DB25 female connector
- Maximum bit rate as per DVB-T standard

Front Panel
- 4x20 alpha display
- button navigation
- Basic setup and status

Reference inputs
- 10MHz
  - SMB connector
  - 1Vpp sine
  - 50 ohm terminated
  - AC coupled
  - option “HIZ” available
- 1 sec PPS
  - SMB connector
  - 0.4 VIL
  - 1.7 VIH
  - Dc coupled
  - 50 ohm terminated
  - option “HIZ” available

Reference outputs
- 10MHz
- SMB connector
  - 1Vpp sine
  - 50 ohm
  - DC coupled
- 1 sec PPS
- SMB connector
  - 0.2 VOL @ 64 mA IOL
  - 2.2 VOH @ 64 mA IOH
  - Dc coupled
  - 50 ohm capable

Remote control interfaces
- RS-232
  - Dedicated DB9 connector
  - Data only
  - Also available on remote control DB25 connector
  - 230kbit
- Relays
  - 4 relays for alarm/info
  - NO & NC contacts at connector
  - Available on remote control DB25 connector
  - Opto couplers
  - 4 opto couplers for command
  - Internal floating current generator
  - Common anode
  - 2 mA max on current
- Functions
  - Default: 1 relay alarm/ok
  - Option “N1”: use relay and opto for SSBT N+1 system

Software
- Java applet requires Java 6 Version 13 or more recent
- Java applet tested on Safar, Internet Explorer, Mozilla
- Browser will download automatically suitable version of Java if connected to internet
- SNMP is version 2 compliant

3BXBT 666

ATSC-MH Aggregator Multiplexer

> 3BXBT 666

Main Features

- Interleave transport stream A that carry the Legacy ATSC and transport stream B that carry the ATSC MH
- 2 logical input TS channel selected from 11 input physical TS channel

3BXBT666 - MH aggregator Multiplexer perform the aggregation of 2 different transport stream.

Inputs to multiplexer are:
- 8 ASI transport streams
- 1 SPI connector for multiplexer extension
- 2 RTP clients for RTP/UDP encapsulated Transport Streams on 2 different ports of a single IP address.

Outputs from multiplexer are:
- 4 ASI transport streams carrying all the same MH transport stream
- 1 RTP/UDP Server carrying encapsulated Transport stream
- SPI output for system extension

As any multiplexer of the XBT family, it has built-in:
- web server to dispatch a Java applet for interactive manage - ment
- Java applet tested on most popular browser
- Java applet downloadable for local execution
- SNMP server for remote control
- internal file system accessible via TCP/IP and TFTP protocols for easy remote upgrade
- telnet server for access via character based terminals
- GPS receiver capable of synchronizing internal time genera tors -
- Geographical coordinates available
- Battery powered local time clock automatically synchronized to UTC
- 8 trap address for automatic alarm/monitoring

Physical
- 1U rack frame
- Size :
  - W:19,05”
  - H: 1,7”
  - D: 13,62”
- Weight: 4 kg

Power supply
- 90-270 VAC PFC corrected power supply
- Nominal power 38 VA
- Power factor: 0.95
- Max inrush current 15A
- M6 screw for extra ground connection
- Power cord
  - Default – Italy
  - Option “UK” – UK standard
  - Option “DIN” – Germany and central Europe DIN con nector
  - Option “US” – US standard

ASI Inputs
- EN 500083-9 compliant
- BNC connectors 75 ohm
- Maximum bit rate 155 Mbit

Ethernet connection
- 10/100/1000 Mbit Ethernet connector
- 1 IP address for web server, management, SNMP server, Telnet, TFTP and remote update

GPS input
- TNC connector 50 ohm
- Phantom power 3 Volt 50 mA short circuit protected
- GPS L1
- 12 channel simultaneous operation
- 45 s typical cold start TTFF
- 38 s typical warm start TTFF
- 5 s typical hot start TTFF
- <0.5 s reacquisition
- Sensitivity Acquisition/Tracking -185dBW / -185dBW
- 30ns rms accuracy, <10ns resolution

ASI output
- EN 500083-9 compliant
- BNC connectors 75 ohm
- Maximum bit rate as per DVB-T standard

Front Panel
- 4x20 alpha display
- 8 button navigation
- Basic setup and status

Reference inputs
- 10MHz
  - SMB connector
  - 1Vpp sine
  - 50 ohm terminated
  - AC coupled
  - option “HIZ” available
- 1 sec PPS
  - SMB connector
  - 0.4 VIL
  - 1.7 VIH
  - Dc coupled
  - 50 ohm terminated
  - option “HIZ” available

Reference outputs
- 10MHz
  - SMB connector
  - 1Vpp sine
  - 50 ohm
  - DC coupled
- 1 sec PPS
  - SMB connector
  - 0.2 VOL @ 64 mA IOL
  - 2.2 VOH @ 64 mA IOH
  - Dc coupled
  - 50 ohm capable

Remote control interfaces
- RS-232
  - Dedicated DB9 connector
  - Data only
  - Also available on remote control DB25 connector
  - 230kbit
- Relays
  - 4 relays for alarm/info
  - NO & NC contacts at connector
  - Available on remote control DB25 connector
- Opto couplers
  - 4 opto couplers for command
  - Internal floating current generator
  - Common anode
  - 2 mA max on current
- Functions
  - Default: 1 relay alarm/ok
  - Option “N1”: use relay and opto for SSBT N+1 system

Software
- Java applet requires Java 6 Version 13 or more recent
- Java applet tested on Safar, Internet Explorer, Mozilla
- Browser will download automatically suitable version of Java if connected to internet
- SNMP is version 2 compliant
- MIB files included in CD

3BXBT 667

ATSC-MH Preprocessor

> 3BXBT 667

Main Features

- Dedicated gigabit port for ATSC-MH services
- Real time multiplex of mobile A/V, data and ESG
- Information editing function of FIC, TPC, Signaling section (SNMT, GAT, SLT, CIT and RRT)
- Internal generation of SSC IP packet for each ensemble for each parade
- Perform single/multiple ensemble
- Perform up to 8 parade
- Insert of synchronization for XBT 666 (ATSC-MH aggregator)
- Support all modes in the ATSC A153 standard

3BXBT667 - Multiplexer is the 3BSBT ATSC-MH preprocessor com pliant to ATSC A/153 standard

Inputs to multiplexer are:
- 1 gigabit port for multicast address input
- 1 gigabit port for management control

Outputs from multiplexer are:
- 4 ASI transport streams carrying all the same MH transport stream
- 1 RTP/UDP Server carrying encapsulated Transport stream

As any multiplexer of the XBT family, it has built-in:
- web server to dispatch a Java applet for interactive manage ment
- Java applet tested on most popular browser
- Java applet downloadable for local execution
- SNMP server for remote control
- internal file system accessible via TCP/IP and TFTP protocols for easy remote upgrade
- telnet server for access via character based terminals
- GPS receiver capable of synchronizing internal time genera tors
- Geographical coordinates available
- Battery powered local time clock automatically synchronized to UTC
- 8 trap address for automatic alarm/monitoring

Physical
- 1U rack frame
- Size :
  - W:19,05”
  - H: 1,7”
  - D: 13,62”
- Weight: 4 kg

Power supply
- 90-270 VAC PFC corrected power supply
- Nominal power 38 VA
- Power factor: 0.95
- Max inrush current 15A
- M6 screw for extra ground connection
- Power cord
- Default – Italy

- Option “UK” – UK standard
- Option “DIN” – Germany and central Europe DIN connector
- Option “US” – US standard

Ethernet connection

- 10/100/1000 Mbit Ethernet connector
- 1 IP address for web server, management, SNMP server, Telnet, TFTP and remote update
- Up to 12 IP multicast address for MH client service

GPS input

- TNC connector 50 ohm
- Phantom power 3 Volt 50 mA short circuit protected
- GPS L1
- 12 channel simultaneous operation
- 45 s typical cold start TTFF
- 38 s typical warm start TTFF
- 5 s typical hot start TTFF
- <0.5 s reacquisition
- Sensitivity Acquisition/Tracking -185dBW / -185dBW
- 30ns rms accuracy, <10ns resolution

ASI output

- EN 500083-9 compliant
- BNC connectors 75 ohm
- Maximum bit rate as per DVB-T standard

Front Panel

- 4x20 alpha display
- 8 button navigation
- Basic setup and status

Reference inputs

- 10MHz
  - SMB connector
  - 1Vpp sine
  - 50 ohm terminated
  - AC coupled
  - option “HIZ” available
- 1 sec PPS
  - SMB connector
  - 0.4 VIL
  - 1.7 VIH
  - Dc coupled
  - 50 ohm terminated
  - option “HIZ” available

Reference outputs

- 10MHz
  - SMB connector
  - 1Vpp sine
  - 50 ohm
  - DC coupled
- 1 sec PPS
  - SMB connector
  - 0.2 VOL @ 64 mA IOL
  - 2.2 VOH @ 64 mA IOH
  - Dc coupled
  - 50 ohm capable

Remote control interfaces

- RS-232
  - Dedicated DB9 connector
  - Data only
  - Also available on remote control DB25 connector
  - 230kbit
- Relays
  - 4 relays for alarm/info
  - NO & NC contacts at connector
  - Available on remote control DB25 connector
- Opto couplers
  - 4 opto couplers for command
  - Internal floating current generator
  - Common anode
  - 2 mA max on current
- Functions
  - Default: 1 relay alarm/ok
  - Option “N1”: use relay and opto for SSBT N+1 system

Software

- Java applet requires Java 6 Version 13 or more recent
- Java applet tested on Safar, Internet Explorer, Mozilla
- Browser will download automatically suitable version of Java if connected to internet
- SNMP is version 2 compliant
- MIB files included

3BENC 325

Multi-Standard Low Definition H.264 Encoder suitable for Mobile applications

> 3BENC 325

Main Features

- ASI or Multicast IP output
- Full support on ATSC MH
- Full support on ISDBT
- Full support on DVBH
- Close caption for ATSC MH
- NTP carried in the RTP flow for ATSC MH
- SIP table, service filtering and remappuing.

3BENC 325 is a Multi-standard Low Definition H.264 encoder suitable for mobile applications.

Inputs to encoder are:
- RGB
- Component video
- Composite Video
- Left/Right Audio
- SDI video with embedded audio and metadata

Outputs from encoder are:
- 1 ASI transport streams
- 1 A/V on Ethernet port

The ENC325 has built-in:
- web server to dispatch a Java applet for interactive management
- Java applet tested on most popular browser
- Java applet downloadable for local execution
- SNMP server for remote control
- internal file system accessible via TCP/IP and TFTP protocols for easy remote upgrade
- ultra fast storage are for event system storage
- telnet server for access via character based terminals
- Geographical coordinates available
- Battery powered local time clock automatically synchronized to UTC
- 8 trap address for automatic alarm/monitoring

Physical
- 1U rack frame
- Size :
  - W:19,05”
  - H: 1,7”
  - D: 13,62”
- Weight: 4 kg

Power supply
- 90-270 VAC PFC corrected power supply
- Nominal power 38 VA
- Power factor: 0.95
- Max inrush current 15A
- M6 screw for extra ground connection
- Power cord

- Default – Italy
- Option “UK” – UK standard
- Option “DIN” – Germany and central Europe DIN connector
- Option “US” – US standard

SDI Input
- EN 500083-9 compliant
- BNC connectors 75 ohm

Ethernet connection
- 10/100/1000 Mbit Ethernet connector
- 1 IP address for web server, management, SNMP server, Telnet, TFTP and remote update
- 1 IP address for RTP/UDP server
- 1 IP address for RTP/UDP client
- RTP protocol: ProMpeg cop3 with no FEC packet processing/generation

ASI output
- EN 500083-9 compliant
- BNC connectors 75 ohm
- Maximum bit rate as per DVB-T standard

Front Panel
- 4x20 alpha display
- 8 button navigation
- Basic setup and status

Reference inputs
- 10MHz
  - SMB connector
  - 1Vpp sine
  - 50 ohm terminated
  - AC coupled
  - option “HIZ” available
- 1 sec PPS
  - SMB connector
  - 0.4 VIL
  - 1.7 VIH
  - Dc coupled
  - 50 ohm terminated
  - option “HIZ” available

Reference outputs
- 10MHz
  - SMB connector
  - 1Vpp sine
  - 50 ohm
  - DC coupled
- 1 sec PPS
  - SMB connector
  - 0.2 VOL @ 64 mA IOL
  - 2.2 VOH @ 64 mA IOH
  - Dc coupled
  - 50 ohm capable

Remote control interfaces
- RS-232
  - Dedicated DB9 connector
  - Data only
  - Also available on remote control DB25 connector
  - 230kbit
- Relays
  - 4 relays for alarm/info
  - NO & NC contacts at connector
  - Available on remote control DB25 connector
- Opto couplers
  - 4 opto couplers for command
  - Internal floating current generator
  - Common anode
  - 2 mA max on current
- Functions
  - Default: 1 relay alarm/ok
  - Option “N1”: use relay and opto for SSBT N+1 system

Software
- Java applet requires Java 6 Version 13 or more recent
- Java applet tested on Safar, Internet Explorer, Mozilla
- Browser will download automatically suitable version of Java if connected to internet
- SNMP is version 2 compliant
- MIB files included in CD

Remote Wireless Control

Remote wireless controls, GTO

3BMONZA

Remote Wireless Control for Transmitters

> 3BMonza

Main Features

- Compatibility with PC Card 2G/3G for wireless network access
- Supported standards: GSM e W-CDMA
- Failover and Failback check up between GSM/UMTS
- Integrated Firewalling functions:
  - gateway anti-virus
  - anti-spyware IPS
- Included Software for network management and reporting
- Wizards configurations

Charactistics

- Link solution for sites where a wired data connection is not available
- Dial up connection for secure access
- Wireless connection with GPRS/EDGE/UMTS wireless standards
- Security guaranteed by VPN over Dynamic IP
- Integrated Firewalling functions
- Power Supply: AC 220 Volt with Battery back-up
- Power Supply: DC -48 Volt in compliance with standards used by telecom operators

Technical specifications:

- Gode supported Unrestricted
- Statefull Packet Throughput 90+ Mbps
- Connections 10,000
- Policies 250
- VPN
- 3DES Throughput 30+ Mbps
- AES Throughput 30+ Mbps
- Site to Site VPN 10 tunnels max
- Remote Access VPN

GTO

General Tool for Operations

General Tool for Operations (GTO) is a new generation OSS for managing the entire end-to-end network and playouts constituted by heterogeneous devices and services.

GTO offers a comprehensive software solution for diagnostics, monitoring and controlling every part of the head end in the most efficient, cost effective possible way.

Flexible license model - The GTO Enterprise version

The GTO Enterprise version is a client-server application. The GTO management platform provides server functionality. The GTO clients provide client functionality.

The GTO Enterprise version has those following actions:
- Configure system composed by unlimited entities (services, relations and devices)
- Setting SNMP and JMX object values
- Synchronize configured system (client-server and server-client)
- Import and Export configured system
- Handle devices events (alarms, network problem, etc)
- Tuning monitoring engine options
- Monitoring entities
- Create synoptic view on configured system
- Use Synoptic view as main navigation panel
- Customizable business rules
- Storable devices values
- Flexible

Also available;

Flexible license model - The GTO Stand-alone version

The GTO Stand-alone version is free of charge, it is designed to manage only few devices.

Using The GTO stand-alone version user can do those following actions:
- Configure a base system composed by almost 10 devices
- Setting SNMP and JMX object values
- Tuning monitoring engine options
- Monitoring devices

Flexible license model - The GTO Stand-alone version

The GTO Stand-alone version is free of charge, it is designed to manage only few devices.

Using The GTO stand-alone version user can do those following actions:
- Configure a base system composed by almost 10 devices
- Setting SNMP and JMX object values
- Tuning monitoring engine options
- Monitoring devices

Accessories

Synchronization System

Automatic Changeover (1+1, N+1)
Single or Dual GPS Receiver

3BCS 500

Automatic Changeover Unit (1+1)

> 3BCS 500

Main Features

- Double power supply;
- Single pole, double trough (double depending on configuration);
- Double pole, double trough;
- Transmitter and Transposer managing capabilities;
- Local and Remote Full Control;
- Analog and Digital management

The 3BCS 500 used in transmitter applications switches the Audio/ Video signals and IF/RF from one driver to the other one. Some of them, as indicated in the previous table, use an internal coaxial bi-stable and motorized relays (SPINNER or RADIALL) depending on the output power. Some others drive an external high power coaxial, bi-stable and motorized Relays.

The 3BCS 500 used in transposer applications switches the RF si gnal from one driver to the other one. Also in this case, some of them, as indicated in the previous table, use an internal coaxial bi-stable and motorized relays (SPINNER or RADIALL) depending on the output power. Some others drive an external high power coaxial, bi-stable and motorized Relays.

The 3BCS 500 front panel of the transmitter application have two audio inputs: 1 main and 1 spare; four video inputs (video + SDI or ASI): main and spare; one audio output; two video outputs (video + SDI or ASI). Few configurations have a graphic panel (with led) that show the relays status.

The 3BCS 500 front panel of the transposer application have two RF (N connector) output to the drivers and one input for the signal coming from the antenna. Few configurations have a graphic panel (with led) that show the relays status.

If 3BCS 500 unit is used with 3B elettronica Series transmitters and transposers a direct interconnection is made by means of DB-25 con nectors on the back panels of the equipment. This connection carries alarm and control signals and allows “safety” function to switch-down the transmitters during the switching. If the unit is used with equip ment of different brands it is possible to switch-down the driver or the modulator using the two SMA connector located on the rear panel.

The 3BCS 500 is designed with a modular approach in a 19” , 2U stan dard RACK and the modularity refers to the plug-in units equipped with coaxial relays both for TRANSPOSERS and TRANSMITTERS. The 3BCS 500 is equipped with two power supplies and a battery. So it can manages the alarms (via SNMP) also in case of failures

MODEL-SPECIFIC DATA

Model	Description
3BCS 500	Automatic Changeover for Transmitters and Microwave Links with integrated 3 port relay
3BCS 500M	Automatic Changeover for Transmitters and Microwave Links with integrated 4 port relay and dummy load
3BCS 500X	Automatic Changeover for Transmitters and Microwave Links with synoptic front panel, suitable for external relay
3BCS OPTION 1	Relay for connection type 7/16 (included mounting kit and dummy load)
3BCS OPTION 2	Relay for connection type 7/8 (included mounting kit and dummy load)
3BCS OPTION 3	Relay for connection type 1⅝ 5/8 (included mounting kit and dummy load)
3BCS OPTION 4	Relay for connection type 3⅛ 1/8 (included mounting kit and dummy load)
3BCS 350	Metering Board for Dual Drive Configuration with integrated 3 port relay
3BCS 350S	Metering Board for Dual Drive Configuration with integrated 4 port relay

Specifications and characteristics are subject to change without notice.

3BCS 900

Automatic Changeover Unit (N+1)

> 3BCS 710

Main Features

- From 1 to 8 programs/channels + one back-up.
- Local/remote control.
- Automatic/manual mode.
- USB, RS-232, RS-485, LAN, SNMP management interface, parallel contacts.
- Management of switching delay.
- Memorization of events and alarms.
- Incorporated Real Time Clock.
- Priority management.
- Threshold levels and number of retries may be adjusted by user.
- Operative frequency: DC to1 GHz.
- Compact size: 3 RU (19")

The 3BCS 710 model is an automatic change-over unit that con trols and operates television transmitters and transposers, both analogue and digital, as well as microwave links, with configu-rations ranging from 1+1 to 8+1.
All dialogues with controlled units take place through the ARM-type ultimate generation microprocessor.
System management using 3BCS 710 is made extremely simple thanks to multiple local or remote interfaces (RS-232, RS-485, parallel contacts, SNMP, USB and LAN)

The user may select either the manual or automatic mode and on/off or switching functions may be activated remotely.

REAR VIEW GUESTS COAXIAL RELAYS and DB25 PORTS

AUTOMATIC N+1 CHANGE-OVER UNIT mod. 3BCS 710

INPUTS	
Operating frequency range	DC to 1 GHz
Input impedance	50 Ω
Insertion loss	< 0.8 dB
Return loss	< -20 dB
Isolation between channels	> 80 dB
Switch type	D.P. - D.T. microstrip
Input connector	N, female
OUTPUTS	
Operating frequency range	DC to 1 GHz
Max. operating power	Up to 200 W p.s. with internal relais
Output impedance	50 Ω
Insertion loss	< 0.2 dB
Return loss	< -26 dB
Isolation between channels	> 80 dB
Switch type	D.P. - D.T. coaxial
Input connector	N, female (other on request)
GENERAL	
Number of programs and/or channels	Up to 8 (Main) + 1 (reserve)
Control	Local and remote
Operations	Automatic or manual
Management interfaces	RS 232, RS 485, LAN, USB, opto-isolated parallel contacts, local push-buttons
Monitoring interfaces	Web based Java interface Front panel display
Management and settings	Priority Switching delay Timeout Events memory Date/time Equipment address Number of controlled equipments RF IN/OUT thresholds Number of retries Alarms Configuration change
Operating temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Main supply	90 to 264 V AC / 24 V DC
Power consumption	< 10 W
Dimensions	3 or 6 RU (19" rack)
Weight	< 5 kg

3BCS 110 / SCS 120D

GPS Receiver, 8 x 1PPS / 5 or 10MHz Outputs - stand-alone unit (3BCS 110)
Dual Redundant GPS Receiver, 8 x 1PPS / 5 or 10MHz Outputs Stand-alone unit Seamlessn (3BCS 120D)

> 3BCS 120D

Main Features

GPS RECEIVER

- 12 parallel channels.
- C/A code 1,023 MHz chip rate.
- Carrier Aided Tracking.
- Precision in position: 25 m (SA absent), 100 m (SA spec. UD DoD)
- Suitable for use with active antennas.
- LAN TCP/IP
- RS485, RS232 Communication

PROTOCOLS

- Power Supply in redundant configuration.

The systems in this series represent the ideal solution to pro blems of synchronization for distribution networks of broadca sting signals.
They make it possible to obtain a high-precision frequency source wherever there is an available GPS signal.
The GPS receivers, design in “Carrier Aided Tracking” techno logy with 12 parallel channels, are available in single versions or redundant versions with automatic seamless switch-over, which provides a commutation without interruption.
Distributors are available, moreover, for frequency reference signals as well as for timing-reference signals.

The discontinuity of the presence of the reference signal does not jeopardize operation of the equipment, thanks to the substantial stability of the oscillator.
The sturdiness of the system in case of reference signal lack was obtained by comparing the local source frequency with-the re ference signal frequency and correcting the possible drift of the local frequency of the integrated oscillator.

GPS receiver rear view
(version with GPS Input on the front-panel)

GPS receiver rear view

GPS PRECISION TIMING SOURCE

FREQUENCY REFERENCE	
Number of outputs	10 x BNC, 50 Ω
Output signal	5 or 10 MHz, sinewave, 1 V p.p.
Short term stability	Better than $5x10^{-12}$ (1 sec.)
Frequency accuracy	Better than $3x10^{-12}$ (24 hours continuous power up and GPS)
Holdover drift	$\pm5x10^{-10}$/day
Phase noise @ 100 Hz	Better than -145 dBc/Hz
Phase noise @ 10 kHz	Better than -155 dBc/Hz
Cold startup	Less than 20 min.
TIMING REFERENCE	
Number of outputs	10 x BNC, 50 Ω
Output signal	1 PPS, 5 V CMOS, square wave
Timing accuracy	±100 ns peak (24 hours continuous power up and GPS)
Holdover drift	±5 µs (5 hours without GPS)
GENERAL	
GPS antenna input connector	N female, 50 Ω
Switchover function (redundant models only)	Auto
Operating temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Power supply	90 to 264 V AC, 24/48 V DC
Dimensions	1 RU (19” rack)

Agile Series

Analog and Digital Low Cost TV Transmitters and Transposer

3BCE and 3BDBE Series

Analog and Digital Low Cost Agile TV Transmitters and Transposers

> 3BCE and 3BDBE Series

Main Features

- Convectional or forced air cooling.
- AGC and ALC controls.
- Excellent noise figure.
- Interchangable module for fast configuration in transmitter or transposer versions.
- Linearity precorrection.
- Agile programming of channel from front panel.
- Compliant with ETS 300 744 (DVB-T) and A53 (ATSC) specifications.
- All uniform, hierarchical and non-hierarchical 2k, 4k, and 8k DVB-T and DVB-H modes (DBE).
- Integrated SFN adapter (DBE).
- Automatic network delay compensation (SFN).
- Virtual Elastic Store.
- MIP decoder for automatic configuration.
- Automatic precision offset (DBE series).
- Excellent eye aperture.
- Guard interval up to 1/32.
- BER = 0.
- Multifunction digital display.
- SAW vestigial filter.
- Multi-standard modulator (SCE series).

The distinguishing features of the transmitters and transposers in the 3BCE and 3BDBE series are the excellent performance capability and the quality/price ratio that characterize them. They consist of an up-converter and the subsequent amplification stages to which are added a modulator board (analogue or digital) and a down-converter which are interchangeable so as to make it possible to transform an analogue or digital transmitter into a transposer in very little time.

The units in this series are fully agile, meaning that it is possible to change the transmission or reception channel directly from the front panel without the necessity of performing any sort of calibration operation. The substantial dynamic capability of the AGC and ALC circuits guarantees high output level stability even in the presence of considerable variations in the input signal.
The transmitters and transposers of the 3BCE and 3BDBE series are very light and compact and are available in analogue versions from 1 to 200 W p.s. output power with or digital modulations and outputs from 0.25 to 50 W.

In the digital versions the modulators are equipped with multiple inputs and automatic switch-over so as to guarantee the continuity of service even in cases of primary input signal lack.

The unit's operating parameters are displayed on the front panel by means of a internal serial connection or in the case of digital units, by means of a TCP/IP interface and internal Web server in Java technology.

> 3BCE 201UT

MODEL-SPECIFIC DATA DIGITAL VERSION

Model	Output band	Working class	Dimensions	Digital output power (rms) without filter (Shoulders -36 dB @ F_0 ± 4.3 MHz)
3BDBE 010-T	50/860 MHz	A	1 RU	0.5 W (VHF) 0.25 W (UHF)
3BDBE 050U-T	UHF	A	1 RU	1.5 W
3B DBE 100U-D	UHF	AB	1 RU	2.5 W
3B DBE 201U-D	UHF	AB	3 RU	50 W
3B DBE 201T-D	VHF III	AB	3 RU	50 W
3B DBE 201F-D	VHF I	AB	3 RU	50 W

MODEL-SPECIFIC DATA ANALOG VERSION

Model	Output band	Working class	Dimensions	Nominal analog output power (p.s.)
3BCE 020-T or -R	50/860 MHz	A	1 RU	2 W (VHF) 1 W (UHF)
3B CE 50U-T or -R	UHF	A	1 RU	4W
3B CE 100U-T or -R	UHF	AB	1 RU	10 W
3B CE 201U-T or -R	UHF	AB	3 RU	200 W
3B CE 201T-T or -R	VHF III	AB	3 RU	200 W
3B CE 201F-T or -R	VHF I	AB	3 RU	200 W

Specifications and characteristics are subject to change without notice.

ANALOG TRANSMITTER VERSION

VIDEO PARAMETERS	
Input impedance	75 Ω
Input level	1 V p.p. ±3 dB
2T K factor	< 2%
Amplitude / frequency response	±0.8 dB (throughout the vision band)
Differential gain	< 5%
Differential phase	< 5°
Chroma / luma delay	±35 ns
Vestigial side-band filter	SAW for all standards
Sync pulse compression	< 3%
S/N ratio (weighted)	> 55 dB
ICPM	< 5°
Luminance non linearity	< 5%
AUDIO PARAMETERS	
Input impedance (balanced)	600 Ω or > 5 kΩ, selectable
Input level	0 dBm ±6 dB
Carrier level	-10 dB (adjustable)
Modulation capability	±120 kHz
Frequency response (30 Hz to 15 kHz)	±0.5 dB
T.H.D. (30 Hz to 15 kHz)	< 0.5%
Pre-emphasis	50 µs or 75 µs or flat
S/N ratio (un-weighted)	> 60 dB

ANALOG TRANSPOSER VERSION

Input frequency bands	VHF I, VHF III, UHF (agile)
Input impedance	50 Ω
Input matching	> 20 dB
Input level amplitude	-30 to -75 dBm
Noise figure	< 8 dB

GENERAL

Available standards	B, D, G, H, I, K, M, N
Colour system	PAL, NTSC, SECAM
Output connector	N female
Output impedance	50 Ω
Protections (SCE 201 only)	Overpower VSWR Overvoltage Overcurrent Overtemperature
Frequency stability	1 ppm
External reference frequency input	5 MHz or 10 MHz
Offset steps	9 positions (stored at factory according to customer's request)
I.M.D. at rated output power	better than -55 dBc (-60 dBc typical)
Harmonics (with output filte r)	-60 dB or better
Spurious emissions (with output filter)	-60 dB or better
External control and monitoring interfaces	logic and analog signal outputs, enable input, RS 485 TCP/IP (optional) SNMP (optional)
Cooling	Convectional or forced air (according to the model)
Operating temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	SCE 020, SCE 050 and SCE 100: 90 to 264 V AC, 48 V DC SCE 201: 90-135 V AC or 185-264 V AC

DIGITAL TRANSMITTER VERSION

COFDM MODULATOR (DVB-T / DVB-H)	
Serial data input	4 x ASI, BNC 75 Ω
Parallel data input	LVDS, Sub-D 25, 100 Ω
Input signal	MPEG2 transport stream
Input data rate	3.73 to 31.67 Mbits/s (according to selected BW and mode)
Modulation	QPSK, 16QAM, 64QAM
Bandwidth	5, 6, 7 or 8 MHz
Transport packet length	188 bytes - 204 bytes (SPI)
IFFT	2k, 4k and 8k
Guard intervals	1/4, 1/8, 1/16, 1/32
Code rates	1/2, 2/3, 3/4, 5/6, 7/8
Precision offset	Integrated (Exact 1 Hz steps @ all BW)
Frequency reference input	10 MHz, BNC 50 Ω
Time reference input	1 PPS, BNC 50 Ω
SFN function	Integrated
Network delay compensation	Manual or automatic
Hierarchical mode	All modes supported
BER	Zero over five hours period before RS decoding, typical
MER	> 47 dB typ.
Eye aperture on vector constellation w/o I.F. filter	> 32 dB
Virtual elastic store function to prevent data overflow	Integrated
Spectrum inversion	Supported
Test functions	Carrier packet removal, CW, PRBS
PCR restamping	Included
Del. Null Packet mode	Included
ATSC MODULATOR	
Serial data input	4 x BNC 75 Ω: ASI, SMPTE-310M (according to customer's request)
Parallel data input	LVDS, Sub-D 25, 100 Ω
Input data rate	Up to 19.39 Mbits/s
Channel bandwidth	6 MHz
Modulation	8VSB (16VSB optional)
Trellis coding	2/3
Symbol rate	10.762 Msymbol/sec.
Bandwidth efficiency	3 Bits/symbol
Digital/analog converter	14 bits
Precision offset	Integrated, 1 Hz steps
Frequency reference input	10 MHz, BNC 50 Ω
Time reference input	1 PPS, BNC 50 Ω
Reed-Solomon encoder	207/187/10
SFN function	Included (proprietary)
Digital pre-correction	Included
Test functions	PRBS, CW
PCR restamping	Included for ASI input
Del. Null Packet mode	Included for ASI input
GENERAL	
Output connector	N female
Output impedance	50 Ω
Protections (DBE 201 only)	Overpower VSWR Overvoltage Overcurrent Overtemperature
Frequency stability	1 ppm or locked to external reference
Harmonics (with output filter)	-60 dB or better
Spurious emissions (with output filter)	-60 dB or better
External control and monitoring interfaces	logic and analog signal outputs, enable input, RS 485 TCP/IP (optional) with web based Java interface and Telnet access via Ethernet SNMP (optional)
Cooling	Convectional or forced air (according to the model)
Operating temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Mains power supply	DBE 020, DBE 050 and DBE 100: 90 to 264 V AC, 48 V DC DBE 201: 90-135 V AC or 185-264 V AC

Digital Microwave Link

Digital Microwave Link

Frequency: from 1,4 to 24 GHz
Outoput power: from 7 to 50dB (depending on frequency)

> 3BDCB 8514

Main Features

- Modular construction.
- Convectional cooling.
- AGC and ALC controls.
- Available in mono or bidirectional version.
- Excellent noise figure.
- Complies with ETS 300 421 (DVB-S) and ETS 300 429 (DVB-C) speci fications.
- Double ASI inputs with integrated automatic switch-over.
- Payload up to 60 Mbits/s (DVB-S) and 155 Mbits/s (DVB-C).
- Integrated network adapter.
- Double and independent output.
- Programming of local oscillator from front panel.
- Multifunction digital display.
- Low power consumption.
- Mains or battery-fed power supply.

This series of microwave links have been designed according to cutting-edge concepts and technologies for the transmission of high-quality digital signals.
The system allows the transmission and reception of a stream of 34 Mbits/s (up to 155 Mbits/s optional) in both point-to-point applications and multi-hop connections.
The excellent spectral purity and extremely low noise of conver sion oscillators allows optimal BER levels and the use of QPSK or QAM modulations.
The modulators and demodulators include an internal network adapter in order to permit a direct connection to digital transmit ters or other serial units thanks to its ASI interfaces.
These microwave links are available in different frequency rang es from 1.4 to 24 GHz with different output powers both in the internal versions and those with external RF heads. In the latter case, the external head is connected to the internal console by means of a coaxial cable through which pass both the I.F. signal and the power supply.
For particularly difficult connections, a series of external solid-state amplifiers, including high-power ones, is also available.

MODEL-SPECIFIC DATA

Model	Output frequency band	Available digital output power (dBm, rms) (regrowth -40 dB)
3BDCB 1438	1.4 - 3.8 GHz	28, 33, 38, 41, 44, 47, 50
3BDCB 3872	3.8 - 7.2 GHz	24, 34, 37, 40, 43, 46
3BDCB 7285	7.2 - 8.5 GHz	24, 35, 38, 41, 44
3BDCB 8514	8.5 - 14.5 GHz	24, 31, 34, 37, 40, 43
3BDCB 1719	17 - 19 GHz	7, 11, 21
3BDCB 2123	21 - 23.6 GHz	11, 14, 20

Other features and frequencies available on request.
Specifications and characteristics are subject to change without notice.

TRANSMITTER

Frequency stability	±5 ppm
Return loss	> 23 dB
Spurious emissions	< -65 dB

RECEIVER

Noise figure	< 5 dB
Frequency stability	±5 ppm
Return loss	> 23 dB
A.G.C. dynamic	> 50 dB
Receiver threshold	Better than -80 dBm

INTERMEDIATE FREQUENCY

I.F. frequency	70 MHz (115 or 140 MHz optional)
I.F. output level	-15 dBm rms, 75 Ω
I.F. input level	-15 dBm rms, 75 Ω
Return loss	> 23 dB
I.F. bandwidth	From 1 to 40 MHz (according to mod/dem settings)

QPSK MODULATOR

Modulation	QPSK (DVB-S compliant)
Inputs	2 x ASI, BNC, 75 Ω or 1 x LVDS, Sub-D 25, 100 Ω
Payload	Up to 34 Mbits/s (DCB 80x series) Up to 60 Mbits/s (DCB 81x series)
Network adapter	Internal
Code rates (FEC)	1/2, 2/3, 3/4, 5/6, 7/8
Roll-off	0.35
Bandwidth	1.75 to 28 MHz, software selectable (DCB 80x series) 1 to 40 MHz, software selectable (DCB 81x series)
Genlock mode	DCB 81x series only
Null packet insertion and deletion	DCB 81x series only
Error packet insertion	DCB 81x series only
Number of outputs	2 independent, BNC, 75 Ω
Control and monitoring	Extensive front panel control Local terminal on RS-232
Remote control and monitoring (optional)	Web based Java interface Telnet access via Ethernet

QAM MODULATOR

Modulation	16, 32, 64, 128, 256 QAM (DVB-C compliant)
Inputs	2 x ASI, BNC, 75 Ω or 1 x LVDS, Sub-D 25, 100 Ω 2 x G703 (optional)
Payload	Up to 34 Mbits/s, standard Up to 155 Mbits/s, optional
Network adapter	Internal
Roll-off	0.15 - 0.35 (selectable)
Bandwidth	Up to 8 MHz, standard Up to 28 MHz, optional
Number of outputs	2 independent, BNC, 75 Ω
Control and monitoring	Extensive front panel control Local terminal on RS-232
Remote control and monitoring	Web based Java interface Telnet access via Ethernet

QPSK DEMODULATOR

Modulation	QPSK (DVB-S compliant)
Payload	Up to 34 Mbits/s (optional up to 60 Mbits/s)
Network adapter	Internal
Code rates (FEC)	1/2, 2/3, 3/4, 5/6, 7/8
Roll-off	0.35
Bandwidth	1 to 40 MHz (software selectable)
Outputs	2 x ASI, BNC, 75 Ω or 1 x LVDS, Sub-D 25, 100 Ω
Control and monitoring	Extensive front panel control Local terminal on RS-232

QAM DEMODULATOR

Modulation	16, 32, 64, 128, 256 QAM (DVB-C compliant)
Payload	Up to 34 Mbits/s, standard Up to 155 Mbits/s, optional
Network adapter	Internal
Roll-off	0.15 - 0.35 (selectable)
Bandwidth	Up to 8 MHz, standard Up to 28 MHz, optional
Outputs	2 x ASI, BNC, 75 Ω or 2 x G703 (optional)
Control and monitoring	Extensive front panel control Local terminal on RS-232

GENERAL

Operating temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Power supply	90 to 264 V AC, 48 V DC (16-32 V DC optional)

Mobile Digital Microwave Link

Frequency: from 1,4 to 24 GHz
Outoput power: from 0,5mW to 0,5W (depending on frequency)

3BDCM 8514

Main Features

- High quality and reliability.
- Modular construction.
- 20 pretuned channels.
- Instantaneous frequency switch.
- Rapid assembly and entry into operation.
- Available in mono or bidirectional version.
- Excellent noise figure.
- Complies with ETS 300 421 (DVB-S) and ETS 300 429 (DVB-C) specifications.
- Double ASI input with integrated automatic switch-over.
- Payload up to 60 Mbits/s (DVB-S) and 155 Mbits/s (DVB-C).
- Integrated network adapter.
- Multifunction digital display.
- Low power consumption.
- Mains or battery-fed power supply.

Produced in various frequency ranges, these microwave links are equipped with double conversion technology and synthe sized oscillators which enable 20 pretuned channels to be changed from the RF head.
On the internal console, a multifunction display allows visualiza tion of the operating parameters of the unit.
The standard capacity of the link is 34 Mbits/s, but may reach up to 155 Mbits/s depending on the options and the type of modulations (QPSK or QAM).
The external mechanical support is designed to house two re ceiving and/or transmitting units which therefore allows the following configurations: RX + RX, TX + TX, TX + RX. This makes it possible either to double the capacity of the link itself or to produce bidirectional connections.
On the external RF unit, whether receiving or transmitting, are present the sealed piezoelectric pushbuttons for channel changing and two high-efficiency displays showing the chan nel and operating frequency and the output power level or RF input level so as to facilitate the system's tracking operations.

3BDCM SERIES RF outdoor unit

RF outdoor unit quick mounting kit fixing system

Detail of RF outdoor unit mechanical assembly system

Detail of SHF head displays

Model	Output frequency band (max. tuning band 200 MHz)	digital output power (rms) (regrowth -40 dB)
3B DCM 1438-33	1.4 - 3.8 GHz	0.5 W
3B DCM 8514-30	8.5 - 14.5 GHz	0.25 W
3B DCM 1719-13	17 - 19 GHz	5 mW
3B DCM 2123-17	21 - 23.6 GHz	12 mW

Other features and frequencies available on request.
Specifications and characteristics are subject to change without notice.

SHF HEADS

Number of pre-tuned channels	20
Max. tuning band	200 MHz
Up/down conversion	Agile (double conversion)
Frequency stability	±15 ppm
Spurious emissions	< -65 dB
Receiver noise figure	< 5 dB
A.G.C. dynamic	> 50 dB
Receiver threshold	Better than -80 dBm

INTERMEDIATE FREQUENCY

I.F. frequency	70 MHz
I.F. output level	-15 dBm rms, 75 ль
I.F. input level	-15 dBm rms, 75 ль
Return loss	> 23 dB
I.F. bandwidth	From 1 to 40 MHz (according to mod/dem settings)

QPSK MODULATOR

Modulation	QPSK (DVB-S compliant)
Inputs	2 x ASI, BNC, 75 ль or 1 x LVDS, Sub-D 25, 100 ль
Payload	Up to 34 Mbits/s (DCB 80x series) Up to 60 Mbits/s (DCB 81x series)
Network adapter	Internal
Code rates (FEC)	1/2, 2/3, 3/4, 5/6, 7/8
Roll-off	0.35
Bandwidth	1.75 to 28 MHz, software selectable (DCB 80x series) 1 to 40 MHz, software selectable (DCB 81x series)
Genlock mode	DCB 81x series only
Null packet insertion and deletion	DCB 81x series only
Error packet insertion	DCB 81x series only
Control and monitoring	Extensive front panel control Local terminal on RS-232
Remote control and monitoring (option	Web based Java interface

QAM MODULATOR

Modulation	16, 32, 64, 128, 256 QAM (DVB-C compliant)
Inputs	2 x ASI, BNC, 75 ль or 1 x LVDS, Sub-D 25, 100 ль 2 x G703 (optional)
Payload	Up to 34 Mbits/s, standard Up to 155 Mbits/s, optional
Network adapter	Internal
Roll-off	0.15 - 0.35 (selectable)
Bandwidth	Up to 8 MHz, standard Up to 28 MHz, optional
Control and monitoring	Extensive front panel control Local terminal on RS-232
Remote control and monitoring	Web based Java interface Telnet access via Ethernet

QPSK DEMODULATOR

Modulation	QPSK (DVB-S compliant)
Payload	Up to 34 Mbits/s (optional up to 60 Mbits/s)
Network adapter	Internal
Code rates (FEC)	1/2, 2/3, 3/4, 5/6, 7/8
Roll-off	0.35
Bandwidth	1 to 40 MHz (software selectable)
Outputs	2 x ASI, BNC, 75 ль or 1 x LVDS, Sub-D 25, 100 ль
Control and monitoring	Extensive front panel control Local terminal on RS-232

QAM DEMODULATOR

Modulation	16, 32, 64, 128, 256 QAM (DVB-C compliant)
Payload	Up to 34 Mbits/s, standard Up to 155 Mbits/s, optional
Network adapter	Internal
Roll-off	0.15 - 0.35 (selectable)
Bandwidth	Up to 8 MHz, standard Up to 28 MHz, optional
Outputs	2 x ASI, BNC, 75 ль or 2 x G703 (optional)
Control and monitoring	Extensive front panel control Local terminal on RS-232

GENERAL

Operating temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Power supply	90 to 264 V AC, 48 V DC (16-32 V DC optional)