TV Broadcasting Equipment

DTV Transmitters eXtreme Efficiency (XE)

screen - line

TV Broadcasting Equipment

UHF, VHF-I and VHF-III

47+ years of experience

+180 Countries served

70.000+ Transmitters installed

50.000+ Worldwide projects

Millions people connected

Our difference

No matter how similar they are, each client is unique, as are each of their projects. That’s why we offer tailor-made solutions, to aim for complete customer satisfaction.

One size doesn’t fit all

TV products and solutions

DB is today a leading company in the production of **TV broadcasting equipment** thanks to its deep experience in designing and manufacturing products with the aim of offering customers more advanced, reliable and performant solutions.

DB offers a full range of multistandard software defined analog or digital or dual-cast television transmission and processing equipment. We also manufacture headends, antennas, SD and HD links and everything needed to deliver a complete turnkey TV solution.

The constant research and development of new technologies and the continuous improvement of quality standards allow DB to develop innovative and reliable equipment, which stands out for its efficiency, dynamism and attention to detail.

Product Range

UHF

Compact Transmitters	from 1 mW to 500 Wrms	
Modular Transmitters	low power	from 350 Wrms to 2 kWrms
	high power	from 2 kWrms to 20 kWrms

VHF – Band III

Compact Transmitters	from 1 mW to 500 Wrms	
Modular Transmitters	low power	from 250 Wrms to 2 kWrms
	high power	from 2 kWrms to 20 kWrms

VHF – Band I

Compact Transmitters	from 1 mW to 250 Wrms	
Modular Transmitters	low power	from 250 Wrms to 2 kWrms
	high power	from 2 kWrms to 20 kWrms

DB Design

DB has always been committed to offering products that are not only technologically advanced but also made to facilitate any user operation and to reduce maintenance and logistics costs. Thanks to the continuous work of perfecting the design of its products, today DB can boast models of transmitters and amplifiers that are extremely compact, efficient and performant with simple intuitive functions.

Smart Design
Thanks to its research and development center, DB is constantly working to improve the design of its products so that the interaction between user and devices is always easier, intuitive and economical. The clever mechanical design with direct access and easy replacement of the fans in the back, outside of the transmitters and amplifiers, and that of the power supply units with easy access are the result. Such as the combination of latest generation RF combiner technology with ultracompact unbalancing dummy loads and a smart intercommunication interface between RF modules, drivers, and Logical Control System.

Compact Design
The compact design of the transmitter allows the latter to be used in environments with limited space and easy and economical logistics management.

High Scalability
The special design of the transmitters and amplifiers allows multiple configurations with a high scalability without any performance reduction.

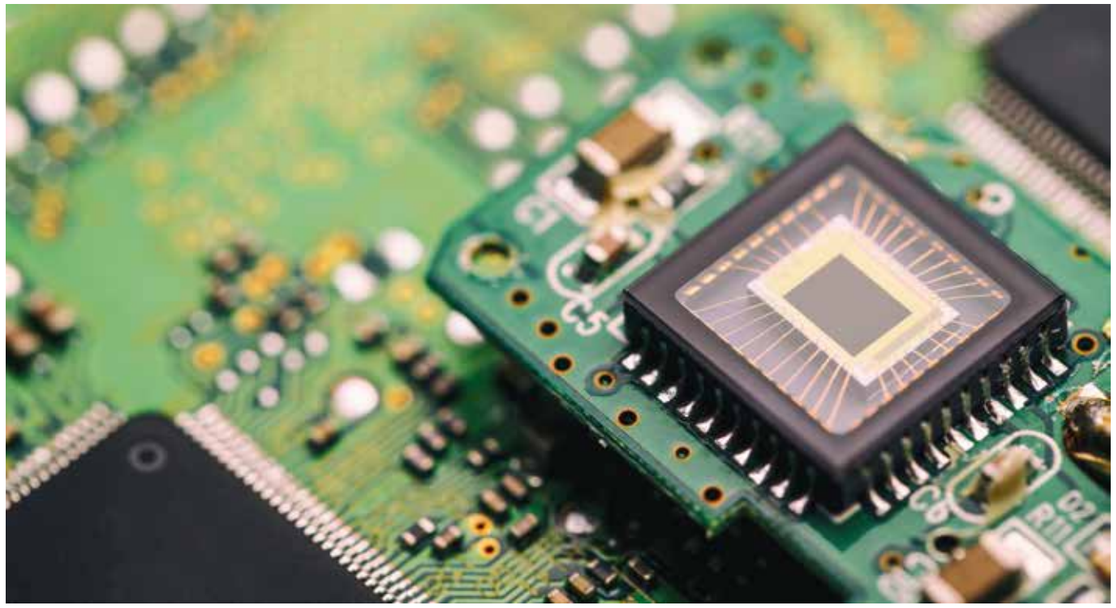
International Standards
Meets or exceeds all safety standards and international electrical specifications. Guaranteed performances exceed any international standard.

Color Display
LCD display for easy navigation, viewing and setting management.

Control Panel
Front panel with simple and intuitive controls. Buttons for direct activation of main parameters and indicator lights for operating status and malfunction signals.

DB Technology

DB has always invested in the development and research of cutting-edge technologies to offer its customers the best possible product, with the guarantee of performance and reliability at the highest levels and always in compliance with all international compatibility standards regarding electromagnetic and safety. DB is synonymous with quality and technological innovation.



APS

Anticorrosive Protection System is a special treatment applied to the surface of the aluminum body of the transmitters and to some of its internal components, preventing corrosion due to humidity or sudden changes in temperature and increasing reliability and longevity.

HSS

With the Hot Swap System present in the transmitters it is possible to carry out maintenance on the power supplies with the equipment on and on-air in less than 2 minutes. Even the easily accessible cooling fans can be removed, cleaned or replaced in just 2 minutes thanks to their placement outside the unit.

RCS

Responsive Cooling System is an optimized and highly efficient cooling system. Thanks to its ability to react to changes in temperature of the transmitter or the environment, the system guarantees correct operation and optimal performance even in extreme climatic conditions and high temperatures. The cooling system keeps the internal critical components always in perfect operating conditions.

AIR COOLING

The DB air cooling system not only prevents the device from overheating but extends the life of the transistors by far. In the transmitters and amplifiers the fans are mounted externally to allow easy and quick cleaning, or possible replacement, without opening or removing any module and without interrupting the operation of the transmitter.

WEB INTERFACE

Extremely detailed and intuitive web interface with all main parameters fully controllable and adjustable. Ability to remotely check the status of the transmitter and set malfunction alerts via e-mail and/or SNMP Trap for prompt intervention. Firmware can be updated remotely and an easy back-up system for personal data and configuration is available by web interface. All remote controls are standardly available also with SNMP protocol.

N+1

The N+1 control logic units reduce the need for multiple backup transmitters by ensuring automatic switching in the event of a failure and automatic loading of the faulty transmitter configuration onto the spare one for a system always at full power.

XET

XET ™ (eXtreme Efficiency Technology): using the latest generation LDMOS devices, more robust and efficient than in the past, and with a special low-loss design of the matching and combination system, together with very high efficiency power supplies (over 96% efficiency), this technology allows surprising transmission performance and several advantages. The XET technology, applied to the amplifier section of the digital transmitters, guarantees an RF efficiency higher than 50% and an overall efficiency up to 42% without decreasing the performance in terms of M.E.R.(Modulation Error Rate) and shoulders.

SWDT

SWDT® (Software Defined Transmitters) technology implement different modulation patterns, either digital or analog (DVB-T, DVB-T2, ATSC, ISDB-Tb, etc.) in the same hardware. It allows an easy selection of the operating modes remotely, via SNMP commands, via TCP/IP or even via a dedicated command inserted into the transport stream.

UAS

The Universal Adaptiveness System is the result of years of research and represents the state of the art of DTV transmitters technology worldwide. This system guarantees an incredible hardware configuration capability, using a very simple and intuitive software that is accessible both locally and remotely. It is perfect for international broadcasters to increase the manageability of investments by reducing the types of transmitters and for national broadcasters thanks to its versatility in operating modes and configuration. The UAS can allow the user to set up the machine as a transmitter, heterodyne transposer, regenerative transmitter and gap filler, all in one hardware configuration.

The combination of ARK-X new Exciter and the SFK/XE Amplifier Series (eXtreme Efficiency)

ARK-X - TOP QUALITY TX EXCITER/DRIVER

Transmitter, Gap Filler, Transposer, Re-Transmitter
Dual cast Analog + Digital Multi standard

The Universal DRIVER can be customised in 5 different configurations.
All ARK-X are always and easily upgradable to new features.

DVB T DVB T2 DVB H ATSC 3.0 ISDB-T DTMB

The New ARK-X Series is the result of years of research and represents the state of the art of the worldwide DTV transmitter technology.

We call it Universal Driver because of its incredible capability to be configured with one hardware and just software selection.

It is perfect for international broadcasters doing business in several countries – to increase manageability of investment through reduction of transmitter types - and national broadcasters, due to its versatility in operation modes and configuration.

Indeed, it can be used as a transmitter, a heterodyne transposer, a regenerative transmitter, a gap filler, all in a single hardware.

ARK-X UNIVERSAL DRIVER is resilient to future evolutions of technology and standardization: this driver guarantees a perfect upgrade path for new modulation schemes.

Besides, ARK-X UNIVERSAL DRIVER already implements DVB-T/T2, ATSC, ISDB-T, DTMB, ATV modulations.

The ARK-X allows selection of operation modes in various ways: remotely, using a dry contact, via SNMP commands, via TCP/IP, using the Web graphic interface, or even via a dedicated command inserted into the transport stream.

The HTML5 GUI Interface allows Multiuser/Multi level/Multi language and Security Authentication for GUI access. It is suitable for mobile devices and customizable.

Scan me for 3D view

Innovative Design

ARK-X design is optimized to guarantee the best possible interaction with the end user, facilitating maintenance and management of the settings.

Hot-plug fans: 2 minutes maintenance time, no need to open or switch off the unit.

LCD colour display for easy navigation, viewing and setting management. All controls and parameters are easily viewable.

MAIN FEATURES:

Remotely upgradable: Software and Firmware remotely upgradable via USB and Ethernet

Available input signals: 4x ASI MPEG-TS (compliant with EN 50083-9); 2x GbE Ports (GbE 10/100/1000 Base T) separated from the Management port. Each physical port supports 2x virtual channels (UDP and RTP protocols); 1x GbE Port 10/100/1000 Base T Management port .

Powerful Adaptive digital Pre-correction: The ARK-X in transmitter and in repeater configurations incorporates linear and non linear adaptive digital precorrection circuits for an optimum signal performance, linearity and efficiency for all models of TV transmitters. Digital pre-corrections are implemented (by FPGA software) without any external device.

GPS Glonass, Galileo, BeiDou integrated receiver to grant the highest precision in the reference signals.

Highest frequency stability thanks to the internal clock based on Oven Controlled OCXO oscillator (10 MHz and 1 PPS) a superior frequency stability is reached.

Energy-saving system: Automatic power reduction scheduler available on web page allows an energy consumption optimization to save energy and to reduce the operation costs.

Easy interaction: Thanks to the color display in the front panel with simple and intuitive controls and monitoring measures like spectrum and constellation, interacting with the ARK-X transmitter and configure it is extremely easy.

Efficiency, versatility and simplicity: Thanks to the various available configurations, these transmitters can give the best solution matching network requirements and granting also maximum robustness and highest efficiency operation at the very competitive price.

Functional interfaces are available for a total remote control of the transmitter by serial protocols or TCP/IP ports. Thanks to the internal Web server the transmitters can be easily monitored, configured and updated using a LAN connection and a standard Web browser (no proprietary software is needed). Moreover, the built-in SNMP agent allows full automated remote control compatible with all SNMP NMS (Network Management System).

Log file with every TX alarm event tracked. The Log file can be saved in the PC in common text format.

APS
HSS
RCS
AIR COOLING
WEB INTERFACE
N+1
SWDT
UAS

ARK-X - Configurations

1. Transmitter Only Version

Main Common Features

- ASI MPEG Transport Stream seamless input.
- MPEG Transport Stream over IP TS 102 034 V1.5.2 (2014-04) seamless Input.
- MPEG Transport Stream encapsulated in RTP (Real-time Transport Protocol) according to RFC 3550 TS 102 034, clause 7.1.1. FEC management SMPTE 2022-1 (Pro MPEG CoP 3).
- IGMPv2/v3 support.
- MFN and SFN operations.
- Internal GPS / Glonass receiver.
- Internal clock: Oven Controlled OCXO oscillator (10 MHz and 1 PPS).
- Output clock: 1 PPS and 10 MHz.
- Bit rate adaptation plus PCR re-stamping.
- RF main and monitoring outputs (Spectrum, MER, Constellation).
- Test Modes:
  - CW insertion
  - Null packet insertion
- Linear and non-linear Adaptive digital pre-correction circuits, when operated as transmitter.
- Linear and non-linear digital pre-correction circuits, when operated as repeater.
- Embedded HTTP server
- Management: Embedded SNMP v3 server - Embedded Web server.
- GbE Ports: GbE 1: 10/100/1000 Base T Management port.
- Redundancy: Input autoswitch algorithm supported.
- Security: Authentication for GUI access supported.

2. Transmitter with Satellite Receiver

DVB-S2 Input Configuration - Satellite Input Specifications

- N. SAT Inputs: 1
- Connector type: F Female
- Input impedance: 75 Ohm
- Input level: -81 dBm up to -17 dBm
- Supported symbol rates: 1 to 45 Msymb/s (DVB-S) / 1 to 67.5 (DVB-S2 depending on modulation scheme).
- DiSEqC: 2.0
- TS interface: broadcast reception and ISI filtering supported.
- Supported standards: ETSI EN 302 307 V1.1.1 (DVB-S2)

3. Transmitter with Satellite Receiver with DEC

DVB-S2 Input and CAM Configuration - Satellite and CAM Specifications

- N. SAT Inputs: 1
- Connector type: F Female
- Input impedance: 75 ohm
- Input level: -81 dBm up to -17 dBm
- Supported symbol rates: 1 to 45 Msymb/s (DVB-S) / 1 to 67.5 DVB-S2 depending on modulation scheme).
- DiSEqC: 2.0
- TS interface: broadcast reception and ISI filtering supported.
- Common Interface
- N° card slots: 1 - Type: PCMCIA
- Supported standards: ETSI EN 302 307 V1.1.1 (DVB-S2)

4. Transposer and Re-Transmitter (Regenerative)

Transposer and Re-Transmitter (Regenerative) Configuration - Terrestrial RF IN Specifications

- N. RF Inputs: 1
- Connector type: N Female
- Input impedance: 50 Ohm
- Input level: -81 dBm up to -17 dBm
- Supported standards: DVB-T/H, DVB-T2, ATSC, ISDB-T

5. Transmitter with Analog A/V Inputs

Digitizer with Analog A/V Inputs

- Inputs: 4 SDI, 2 CVBS and 2 L/R
- Supported Composite Standards: NTSC CVBS, PAL (B, D, G, H, I, M, N) CVBS
- Supported SDI Standard: SMPTE 259M-C – Component 4:2:2, 270Mb/s for 525 and 625 lines, 13.5 MHz sampling, 4x3 and 16x9 aspect ratios.
- Outputs: 1 RF, 1 RF Monitor - 2 SDI for inputs bypass
- Test modes: CW, CW AV, Mute Audio Carrier, Mute Audio, Audio Test Tone, Video In, SMPTE Bars, Horizontal Bars, Red Field, ITS0, ITS1, ITS2, ITS3 , ITS4.
- A/V Inputs Specifications:
- Analog Video input:
  - N°Inputs: 2 CVBS
  - Connector type: BNC
  - Input impedance: 75 Ohm
  - Supported video standards: PAL B,D,G,H,I,M,N, NTSC
- Analog Audio input:
  - N°Inputs: 2 L/R couples
- - Connector type: XLR3 (Cannon f)
  - Input impedance: 600 Ohm balanced
  - Input Level: +6dBm +/- 6 dB

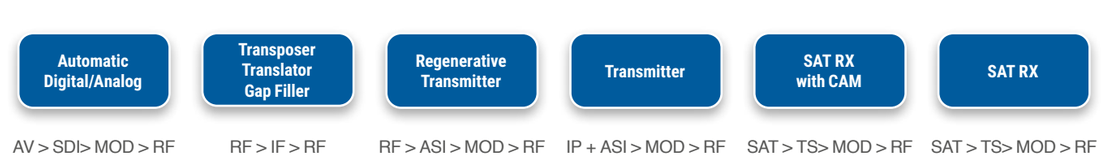
FRONT END OPTIONS:

- Digitizer with Analog A/V Inputs Configuration
- SAT with or without CAM receiver
- T2/ ATSC/ISDB-Tb Receiver for Transposer, Re-Transmitter, Gap Filler

Front-End \ Standard	ATV	DVB-T/H	DVB-T2	ISDBT	ATSC	DTMB
None	Transmitter	Transmitter	Transmitter	Transmitter	Transmitter	Transmitter
Digitalizer A/V Input option	Transmitter with A/V analog inputs	Transmitter with A/V analog inputs (*)	Transmitter with A/V analog inputs (*)	Transmitter with A/V analog inputs (*)	Transmitter with A/V analog inputs (*)	Transmitter with A/V analog inputs (*)
DVB-S/S2	×	Transmitter with DVB-S/S2 RF input	Transmitter with DVB-S/S2 RF input	Transmitter with DVB-S/S2 RF input	Transmitter with DVB-S/S2 RF input	Transmitter with DVB-S/S2 RF input
DVB-S/S2 + CAM	×	Transmitter with DVB-S/S2 RF input (with CAM)	Transmitter with DVB-S/S2 RF input (with CAM)	Transmitter with DVB-S/S2 RF input (with CAM)	Transmitter with DVB-S/S2 RF input (with CAM)	Transmitter with DVB-S/S2 RF input (with CAM)
DVB-T/T2	×	Re-Transmitter/ Transposer /GapFiller Echo Canceller	Re-Transmitter/ Transposer /GapFiller Echo Canceller	×	×	×
ISDBT	×	×	×	Re-Transmitter/ Transposer /GapFiller Echo Canceller	×	×
ATSC	×	×	×	×	Re-Transmitter/ Transposer /GapFiller Echo Canceller	×
DTMB	×	×	×	×	×	Transposer / GapFiller Echo Canceller

(*) In case of Dual cast ATV+DTV operation mode

ARK-X CONFIGURATIONS:



SFT/XE Series

eXtreme Efficiency (XE)
Easy-Maintenance design

SFT251U/XE/C *SFT202U/XE/M*

The SFT/XE Transmitter Series is the result of the intense activity of DB R&D on High Performance RF Amplifiers and high efficiency latest generation LDMOS devices, combined with the new widely improved software precorrection capability and very efficient power supplies (>96%).

This new DB XET™(eXtreme Efficiency Technology) grants RF efficiency over 50% and overall efficiency up to 42% without decreasing performance in terms of modulation error rate and shoulders and with the well-known reliability of DB Products.

The new XET™ Technology allows stunning performances for broadcasting: higher efficiency, compactness and cooling systems reduction are just some of the improvements gained.

The SFT/XE Transmitter Series features a built-in SFN adapter and very advanced SWDT® (Software Defined Transmitters) technology, that allows implementing different modulation patterns – either digital or analog – (DVB, ATSC, ISDB-T, DTMB, T-DMB, ATV, etc.) in the same hardware.

Moreover, the SWDT® technology allows selection of operation modes in 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.

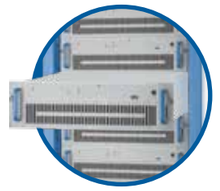
Functional interfaces are available for complete remote control of the transmitters by serial protocols or TCP/IP ports, thanks to the internal Web server or built-in SNMP.

Nevertheless, the High Efficiency reduces management costs and helps the environment.

Efficiency Enhancement

The combination of ARK-X exciter and SFK Amplifier Series with eXtreme Efficiency technology.

XET technology guarantees an RF efficiency higher than 50% and an overall efficiency up to 42% without decreasing the performance in terms of M.E.R. (Modulation Error Rate) and shoulders.



Hot pluggable amplifiers for easy and quick maintenance.

Multiple configurations with high scalability.

MAIN FEATURES:

High efficiency

XET ™ (eXtreme Efficiency Technology): using the latest generation LDMOS devices, more robust and efficient than in the past, and with a special low-loss design of the matching and combination system, together with very high efficiency power supplies (over 96% efficiency), this technology allows surprising transmission performance and incredible efficiency. The XET technology, applied to the amplifier section of the digital TV transmitters, guarantees an RF efficiency higher than 50% and an overall efficiency up to 42% without decreasing the performance in terms of M.E.R.(Modulation Error Rate) and shoulder.

Quick and economical maintenance

Thanks to the clever mechanical design with direct access of the fans at the back and outside of the exciters and amplifiers and thanks to the ease of access and removal of the of the power supply units with the SFT/XE transmitters you save time and money in maintenance. Moreover, thanks to DB's Hot Swap System, you can replace fans and power supply units with the equipment running.

Easy interaction

Thanks to the LCD colour display and the front panel of the exciters, amplifiers and control units, with simple and intuitive controls, buttons for direct activation of main parameters and indicator lights showing their status and signalling any malfunctions, interacting with the SFT/XE transmitters is extremely easy.

Remotely controllable

With DB's Web and SNMP Interface, extremely detailed and intuitive and with all main parameters fully controllable and adjustable, you can remotely check the status of the transmitter and set malfunction alerts via e-mail for prompt intervention

Power Scheduler

SFT transmitters include in its remote control interface a power scheduler for weekly adjustements of power output strongly optimizing energy consumption.

Smart design

SFT/XE transmitters are compact and lightweight, so they can be installed in places with reduced space and managing them logistically is absolutely not a problem. The N+1 logic control units reduce the need for multiple backup transmitters by ensuring automatic switching in the event of a failure and automatic loading of the faulty transmitter configuration onto the spare one for a system always at full power. In addition, each exciter and amplifier has the Anticorrosive Protection System, which is a special treatment applied to the surface of the aluminium body of the transmitters and to some of its components, preventing corrosion due to humidity or sudden changes in temperature and increasing reliability and longevity.

Liquid Cooling System

It is optional and available on transmitters of at least 2.5 kWrms, consists of an oversized heat exchanger, single or double (optional), suitable for outdoor or indoor installation, and equipped with single or double pumping system (optional) for maximum redundancy, is the main component of DB's powerful liquid cooling system. Thanks to the special design of the liquid cooled heat sinks inside the amplifier and the low pressure liquid distribution, this system ensures high reliability, cooling efficiency and ease of installation Compared to the air cooling system, the liquid cooling system brings several advantages, such as:

- Correct operation even in extreme climatic conditions
- Significant reduction in the amount of air conditioning required
- Correct operation in dusty environments, with high
- humidity or salinity
- Very low acoustic noise
- Low thermal dispersion in the environment
- Longer life of transistors and active components thanks to their continuous operation at lower temperatures.

APS
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N+1
XET
SWDT
UAS

New SFK/XE eXtreme Efficiency DTV Amplifier Series

- XET™ eXtreme Efficiency Technology with latest generation LDMOS and Doherty architecture
- Hot pluggable amplifier modules
- Ultra Compact Design
- Hot pluggable redundant Power Supplies for instant replacement
- Powerful cooling system suitable to work in extreme ambient conditions
- Easy and Fast maintenance design

Efficiency, versatility and simplicity at the highest levels

Each SFK-XE amplifier feature:

- ease of reaching and extracting the power supply units by removing the transmitter faceplate
- leds indicating working parameters and transmitter status

SCS GNSS Receiver

DVB T DVB T2 DVB H ATSC 3.0 ISDB-T DTMB

Dual Redundant GPS/GLONASS/GALILEO/BEIDOU Receiver 10 Output x lPPS , 10 MHz Outputs, Seamless redundant

The systems in these series represent the ideal solution for synchronization of distribution broadcasting networks.

The GNSS receivers, designed whit “Carrier Aided Tracking” technology with 12 parallel channels, are available in single or redundant version 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 internal oscillator.

The sturdiness of the system in case of reference signa l lack was obtained by comparing the local source frequency with the reference signal frequency and correcting the possible drift of the local frequency of the integrated oscillator.

The dual GNSS Receiver contains two f ul y redundant GNSS receiver boards, each with their own OCXO, GNSS module and GNSS antenna input. The redundancy is at power supply level as well. Each receiver has an OCXO (oven controlled crystal oscillator) which runs at lOMHz. The accuracy of this OCXO is better than 0.3Hz (0.3 ppm). When the GNSS signal is present and is

detected, the OCXO frequency is controlled to match the accuracy of the GNSS time reference. The number of cycles of this signal is counted over a period of one second, as given by the PPS signal from the GNSS module. This way the frequency error of the OCXO is derived. f the GNSS module tracks only 3 satellites or Less, it becomes impossible to extract the GNSS time information. If this happens, the microcontrol er stops adjusting the OCXO frequency. The OCXO is left running in open Loop, with thelast tuning voltage known before

The GNSS module Lost track. When both receivers do not receive the GNSS signal, then the frequency accuracy is set by the OCXO accuracy, which is less than 0,3ppm, This function is named Hold Over.

When the GNSS signal came back, a specia lalgorithm, studied for SFN broadcasting network drive the equipment to a smoothing come back from the Hold Over.

DETAILS

- 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
- SNMP
- Aux TLS relay contact available on the rear panel.
- RS485,RS232 Communication

FREQUENCY REFERENCE

- **Number of outputs:** 10 x BNC, 50
- **Output signal:** 5 or 10 MHz, sine wave, 1V p.p
- **Short term stability:** Better 5 x 10-12 (sec)
- **Frequency accuracy:** Better than 3x10-12 (24hours continuos power up and GNSS)
- **Hold over drift:** 5 x 10-10/day
- **Phase noise @ 100 Hz:** Better then -145 dBc/Hz
- **Phase noise @ 10 kHz:** Better then -155 dBc/Hz
- **Cold startup:** Less then 10 min.

TIMING REFERENCE

- **Number of outputs:** 10 x BNC, 50
- **Output signal:** 1PPS, 5 V TTL, square wave
- **Timing accuracy:** 100 ns peak (24 hours continuous power up and GNSS)

GENERAL

- **GNSS antenna input connector:** N female, 50 , lightning protection available as option
- **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:** 1RU (19” rack)
- **Weight:** 5 kg (approx)

OPTIONS

- Power supply in redundant configuration
- Lightning protection
- Rear input GNSS antenna
- Kit SCS 118 Antenna GNSS

Broadcasting Antennas

We provide a wide variety of TV broadcasting Antenna Systems suitable for all Analog or Digital TV broadcasting network applications.

We use a powerful solid CAD model system design software with international horographic maps converted from satellite surveys to optimize the antenna system based on the ATV and DTV Network specification.

Antenna systems can be Omnidirectional or Directive, depending on the requested coverage area.

Available DB TV Antennas are:

- *APV3 / APO3 series:*
  VHF Band III panels with stainless steel dipole and hot dipped steel reflector, PTFE insulators and stainless steel screws. Available in vertical polarization (APV3) or horizontal polarization (APO3).
- *APV8 / APO8 series:*
  UHF Band IV-V panels with eight ice protected radiating elements, a stainless steel reflector, a fibreglass radome and mounting brackets. Available in vertical polarization (APV3) or horizontal polarization (APO3).

APV3 / APO3 SERIES

Wide band double dipole VHF Band III antenna panel in stainless steel with PTFE insulator. It is designed to work in the whole broadcast band (170 - 225 MHz).

Thanks to the directional radiation (with 7.5 dB gain) in vertical (APV3) or horizontal (APO3) polarization, it is suitable for customized pattern. By stacking more antennas, in fact, it is possible to meet customer's requests about specific areas to cover or to increase the gain of the system and power handling capacity. Custom patterns, electrical beam tilt and null fill design are available on request.

APV8 / APO8 SERIES

Wide band UHF Band IV-V antenna panel with eight ice protected radiating elements, a stainless steel reflector, a fibreglass radome and mounting brackets. It is designed to work in the whole broadcast band (470 - 860 MHz).

Thanks to the directional radiation (with 12.0 dB gain) in vertical (APV8) or horizontal (APO8) polarization, it is suitable for customized pattern. By stacking more antennas, in fact, it is possible to meet customer's requests about specific areas to cover or to increase the gain of the system and power handling capacity. Custom patterns, electrical beam tilt and null fill design are available on request.

ASI TO IP Converter

Up to 8 channels ASI to IP and IP to ASI Converter

SMPTE Specification 2022-1: Forward Error Correction for Real-time Video/Audio Transport Over IP Networks.
Modern data networks are subject to a variety of impairments, ranging from simple bit errors to groups of contiguous data packets.
The Pro-MPEG COP3/SMPTE 2022 standard has been designed specifically to ensure that high quality video that is used by broadcasters for their most valuable live video feeds are able to be transported over these networks.

COP #3 FEC can protect a video stream from a burst packet loss of up to 255 packets, which is suitable for most private, managed IP networks using QoS techniques such as MPLS, RSVP, and DiffServ. COP #3 FEC is available as the option within user datagram protocol (UDP)/IP network encapsulation, with realtime transport protocol (RTP) encapsulation.

The generation of FEC packets in the COP #3 standards is based upon a matrix defined by the parameters L and D. L represents the number of columns in the matrix, while D represents the number of rows. The standard defines the generation of two types of FEC packet: Column FEC and Row FEC. A FEC packet is generated by XOR of the media packets in a column or a row. Once generated, the Column FEC packets and Row FEC packets are transmitted along with the original media packets on 3 separate UDP ports to a Pro-MPEG COP #3 compliant receiving device.

SMPTE-2022 Network Adapters provide a cost effective and highly reliable solution for transporting digital video content over IP networks (MPEG2-TS over IP also called DVB over IP or ASI over IP)

While Pro-MPEG COP #3 FEC is adequate for most private IP links, it is not robust enough to handle the challenges associated with moving video over highly loss IP networks such as the Public Internet.

- It is a portable translator that provides seamless conversion between different MPEG2-TS transmission media.
- ASI->Ethernet, Ethernet->ASI converter, designed for the distribution of MPEG2-TS.
- It is capable to route TS from ASI to Ethernet and for Ethernet to ASI, managing Forward Error Correction data channel as requested by SMPTE 2022 standard.
- Full SMPTE 2022 (Pro MPEG-COP#3) standard compliant.
- It provides three working modes:
  1. ASI to Ethernet mode: provides the routing of up to 2 ASI input to 2 Ethernet outputs.
  2. Ethernet to ASI mode: provides the routing of up to 2 Ethernet input channels to 2 ASI outputs.
  3. 2 Way Bridge mode: working mode allows to use both function, ASI to GbE and GbE to ASI simultaneously, this working mode use the ASI1 and the GbE2 as input and the GbE1 and the ASI2 as output.
- Fully programmable FEC with several selectable FEC mode:
  • Enable
  • Disable
  • One-dimensional
  • Two-dimensional
- Selectable input buffer size (selectable latency)
- Resynchronization Output Bitrate PCR based
- Device settings and upgrade are managed by the included Graphic User Interface through a USB port.

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