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**DIGITAL
TRANSMITTERS**
2.5 kW (DVB)
4 kW (ATSC)



PRINCIPALI CARATTERISTICHE:

- > Rispondente alle specifiche ETS 300 744 (DVB) e A53 (ATSC).
- > Tutte le modalità DVB-T e DVB-H a 2k, 4k e 8k uniformi, gerarchiche e non.
- > Adattatore SFN integrato.
- > De-jitter sul segnale in ingresso prima della trasmissione.
- > Up-converter agile integrato.
- > Ingressi ASI e LVDS.
- > Compensazione automatica del ritardo di rete (SFN).
- > Aggancio a segnale di riferimento GPS.
- > Virtual Elastic Store.
- > Decodificatore MIP per configurazione automatica.
- > Offset di precisione automatico.
- > Eccellente apertura dell'occhio.
- > Intervallo di guardia fino a 1/32.
- > BER = 0.
- > Opzione "dual-mode" (PAL/DVB - NTSC/ATSC).
- > In modalità DVB-H:
Modo native o in-depth interleaving.
Time-slicing per High e Low priority stream. MPE FEC per High e Low priority stream.
- > Costruzione modulare.
- > Raffreddamento forzato.

MAIN FEATURES:

- > Complies with ETS 300 744 (DVB) and A53 (ATSC) specifications.
- > All uniform, hierarchical and non-hierarchical 2k, 4k and 8k DVB-T and DVB-H modes.
- > Integrated SFN adapter.
- > De-jitter on input signal prior to transmission.
- > Agile integrated up-converter.
- > ASI and LVDS inputs.
- > Automatic network delay compensation (SFN).
- > GPS reference signal lock.
- > Virtual Elastic Store.
- > MIP decoder for automatic configuration.
- > Automatic precision offset.
- > Excellent eye aperture.
- > Guard interval up to 1/32.
- > BER = 0.
- > Dual mode option (PAL/DVB - NTSC/ATSC).
- > In DVB-H modes:
Native or in-depth interleaving modes.
Time-slicing for High and Low priority stream. MPE FEC for High and Low priority stream.
- > Modular construction.
- > Forced air cooling.

CARACTERÍSTICAS PRINCIPALES:

- > Cumple con las normas ETS 300 744 (DVB) y A53 (ATSC).
- > Todos los modos DVB-T y DVB-H de 2k, 4k y 8k uniformes, jerárquicos o no.
- > Adaptador SFN integrado.
- > "De-jitter" en la señal de entrada antes de la transmisión.
- > Up-converter ágil integrado.
- > Entradas ASI y LVDS.
- > Compensación automática del retraso de red (SFN).
- > Enganche a la señal de referencia GPS.
- > "Virtual Elastic Store".
- > Decodificador MIP para configuración automática.
- > Offset de precisión automático.
- > Excelente apertura del ojo.
- > Intervalo de guardia hasta 1/32.
- > BER = 0.
- > Opción "dual-mode" (PAL/DVB - NTSC/ATSC).
- > En modo DVB-H:
Modo native o in-depth interleaving.
Time-slicing para High y Low priority stream.
MPE FEC para High y Low priority stream.
- > Construcción modular.
- > Ventilación forzada.



**DBT/DTT 103UM
UHF TRANSMITTER**



**DBT/DTT 103UB
UHF TRANSMITTER**



**DBT/DTT 103UM
UHF TRANSMITTER**



**DBT/DTT 103UM
UHF TRANSMITTER WITH
DUAL DRIVER OPTION**



**DBT/DTT 103TB
VHF TRANSMITTER**

MODEL-SPECIFIC DATA

Model	Output band	Dimensions	Number of amplifiers	Digital output power (rms) without filter (Shoulders -36 dB @ $F_0 \pm 4.3$ MHz)		Nominal analog output power (p.s.) with dual mode option
				DVB-T	ATSC	
103FB	VHF I	2 x 40 RU	8	2.5 kW	4 kW	10 kW
103TB	VHF III	2 x 40 RU	8	2.5 kW	4 kW	10 kW
103UM	UHF	1 x 42 RU	4	2.5 kW	4 kW	10 kW
103UB	UHF	2 x 40 RU	8	2.5 kW	4 kW	10 kW

* DBT Series = Digital DVB-T transmitters
 DTT Series = Digital ATSC transmitters

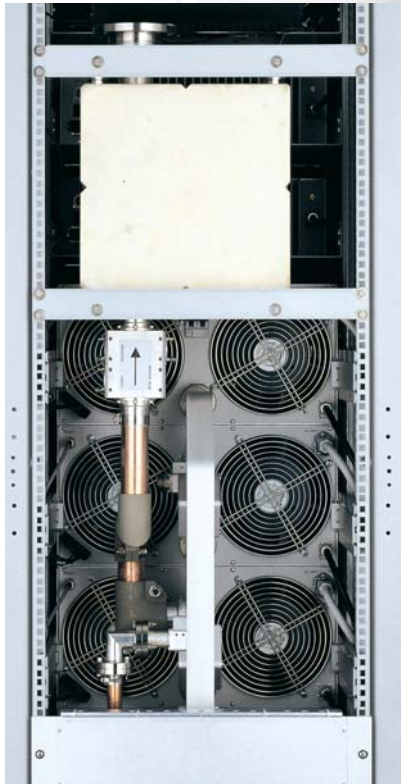
Specifications and characteristics are subject to change without notice.

Questa serie di trasmettitori televisivi a stato solido di alta potenza rappresenta la nuova generazione di apparati prodotti da Screen Service. L'ottima efficienza e le ridotte dimensioni che li caratterizzano rendono possibile l'utilizzo di potenze elevate anche in siti poco spaziosi.

Ogni singolo amplificatore funziona in modo completamente autonomo essendo dotato al proprio interno sia degli alimentatori, che dei ventilatori di raffreddamento, con velocità variabile in funzione della temperatura, che dei circuiti di protezione. Ciò facilita le operazioni di manutenzione evitando la necessità di alimentatori esterni da laboratorio.

L'opzione "dual-driver" consente di ottenere un elevato livello di ridondanza e la funzionalità DUAL-MODE permette la trasmissione sia di segnali digitali che di segnali analogici garantendo l'efficacia dell'investimento tecnologico.

Tutte le funzioni ed i parametri di funzionamento dell'apparato sono gestiti da microprocessore e controllabili tramite una serie di display multifunzione o tramite le interfacce, analogiche e digitali, collocate sui pannelli posteriori di ogni singolo stadio.



**DBT/DTT 103TB
 VHF TRANSMITTER
 WITH DUAL DRIVER OPTION**

This series of solid-state high-power television transmitters constitutes the new generation of equipment produced by Screen Service. The excellent efficiency and reduced size characterizing these transmitters permit the use of high output powers even in cramped spaces.

Each single amplifier works autonomously and is characterized by its own internal power supply, cooling fans with variable speeds for different temperatures, and protection circuit. This facilitates maintenance operations by eliminating any need for spare external power supplies.

The "double-driver" option helps obtain a high level of redundancy and the practical DUAL-MODE function permits the transmission of both digital and analogue signals, guaranteeing the efficiency of this technological investment.

All functions and operating parameters of the equipment are run by a microprocessor and can be checked by means of a set of multifunction displays or by means of analogue and digital interfaces located on the rear panels of each individual stage.

Esta serie de transmisores de televisión en estado sólido de elevada potencia representa la nueva generación de aparatos fabricados por Screen Service. La excelente eficiencia y dimensiones reducidas que los caracterizan, posibilitan la utilización de potencias elevadas incluso en lugares con poco espacio.

Cada amplificador funciona de manera completamente autónoma al estar dotado en su interior tanto de alimentadores, de ventiladores de refrigeración, con velocidad variable en función de la temperatura, como de circuitos de protección. Ello facilita las operaciones de mantenimiento evitando la necesidad de alimentadores externos de laboratorio.

La opción "dual-driver" permite obtener un elevado nivel de redundancia y la funcionalidad DUAL-MODE permite la transmisión tanto de señales digitales como analógicas garantizando la eficacia de la inversión tecnológica.

Todas las funciones y los parámetros de funcionamiento del aparato están gestionados por un microprocesador y se controlan a través de una serie de visualizadores multifunciones o por las interfaces, analógicas y digitales, colocadas en los tableros traseros de cada uno de las etapas.

DIGITAL TRANSMITTERS

2.5 kW (DVB)

4 kW (ATSC)

DIGITAL

TECHNICAL CHARACTERISTICS

COFDM MODULATOR (DVB-T / DVB-H)

Serial data input	4 x BNC 75 Ω: 4 x ASI or 2 x ASI + 2 x SDI for dual mode option
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

SOFTWARE-ADJUSTABLE PARAMETERS IN ANALOG MODE (DUAL MODE OPTION)

Video modulation level, sync level, video group delay, audio modulation levels, audio pre-emphasis, audio carriers level, sound modes (mono single carrier, mono dual carriers, stereo, dual sound)

ATSC MODULATOR

Serial data input	4 x BNC 75 Ω: ASI, SMPTE-310M, SDI for dual mode option (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 or 0.999000999 Hz for NTSC operation with dual mode option
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
Adaptive digital pre-correction	Optional
Test functions	PRBS, CW
PCR restamping	Included for ASI input
Del. Null Packet mode	Included for ASI input

SOFTWARE-ADJUSTABLE PARAMETERS IN ANALOG MODE (DUAL MODE OPTION)

Video white level, video pedestal level, video group delay, sync level, audio modulation level, audio pre-emphasis, audio carrier level.

GENERAL

Integrated GPS receiver	Optional
Output connector	3+1/8" EIA
Output impedance	50 Ω
Working class	AB
Protections	Overpower Adjustable exciter power limiter VSWR Overvoltage Overcurrent Overtemperature RF fold-back on HI-VSWR (optional)
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	Forced air
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 / 400 V AC ±15% 3-phase



Screen Service

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