

TX04-050D TX04-011D  
TX04-051D TX04-012D  
TX04-022D



5W/10W/50W/100W/200W  
UHF DVB-T/T2 TRANSMITTER

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## Key Features

- Capable of transmitting one DVB-T2 or two independent DVB-T signals at the same time.
- In full compliance with the latest version of EN300744 (DVB-T) and EN302755 (DVB-T2) standards.
- Optional IRD/Remux capable of demodulating any of DVB-T/T2/S/S2 signals with superior input sensitivity and BISS (Basic Interoperable Scrambling System) decryption.
- Utilization of advanced adaptive algorithms for eliminating linear and non-linear distortions of amplified signals which guarantees high MER and shoulder distance.
- Measurement of key qualitative parameters of transmitter output signal including MER, shoulder distance, frequency response and etc.
- Utilization of ultra-fast and efficient protective mechanism against destructive incidents including output impedance mismatch.
- Easy installation and maintenance thanks to compactness and modular design.
- Employing state of the art LDMOS transistors.
- Control and monitoring locally by front panel graphical touch screen LCD and remotely by WEB and SNMP through IP network and by SMS through GSM network.

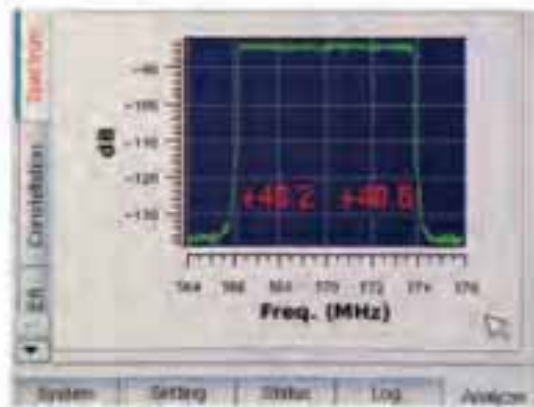
## General information

INTECH is proud to present its newest series of digital TV transmitters to the market. These transmitters are in full compliance with the latest version of DVB-T and DVB-T2 standards and are equipped with a wide variety of features which make them a comprehensive solution for broadcasters. They are proposed in different models with respect to the output power including 5W, 10W, 50W, 100W and 200W in the whole UHF band.

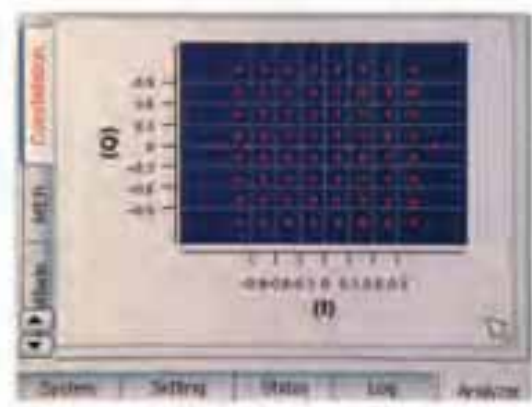
The most noteworthy feature of these transmitters is the distinctive capability of broadcasting two independent Transport Streams (TS) on two different channels at the same time. This **great feature** is obtained by employing state of the art technology in the dual output modulator of the transmitter.

Furthermore an internal IRD/Remux totally avoid any need for external sub-head ends. Thanks to this optional feature it is possible to demodulate up to four TS from DVB-T/T2 or DVB-S/S2 signals. These four streams are processed by the embedded Remux to generate two customized TS which along with the external ASI inputs can be used for feeding the dual output modulator.

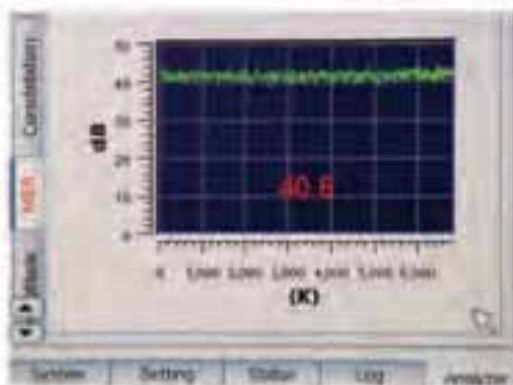
On the other hand the transmitters are equipped with an embedded signal analyser which constantly measures the key qualitative parameters of the output signal including MER per carrier, shoulder distance and frequency response. Precise results of analyser are plotted on the front panel LCD and give a great insight about the transmitter operating condition. Such a



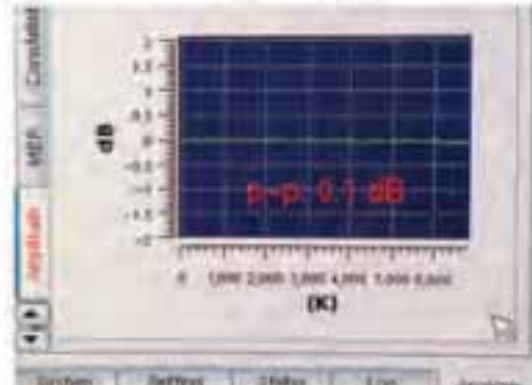
**Spectrum Graph**



**Constellation Graph**

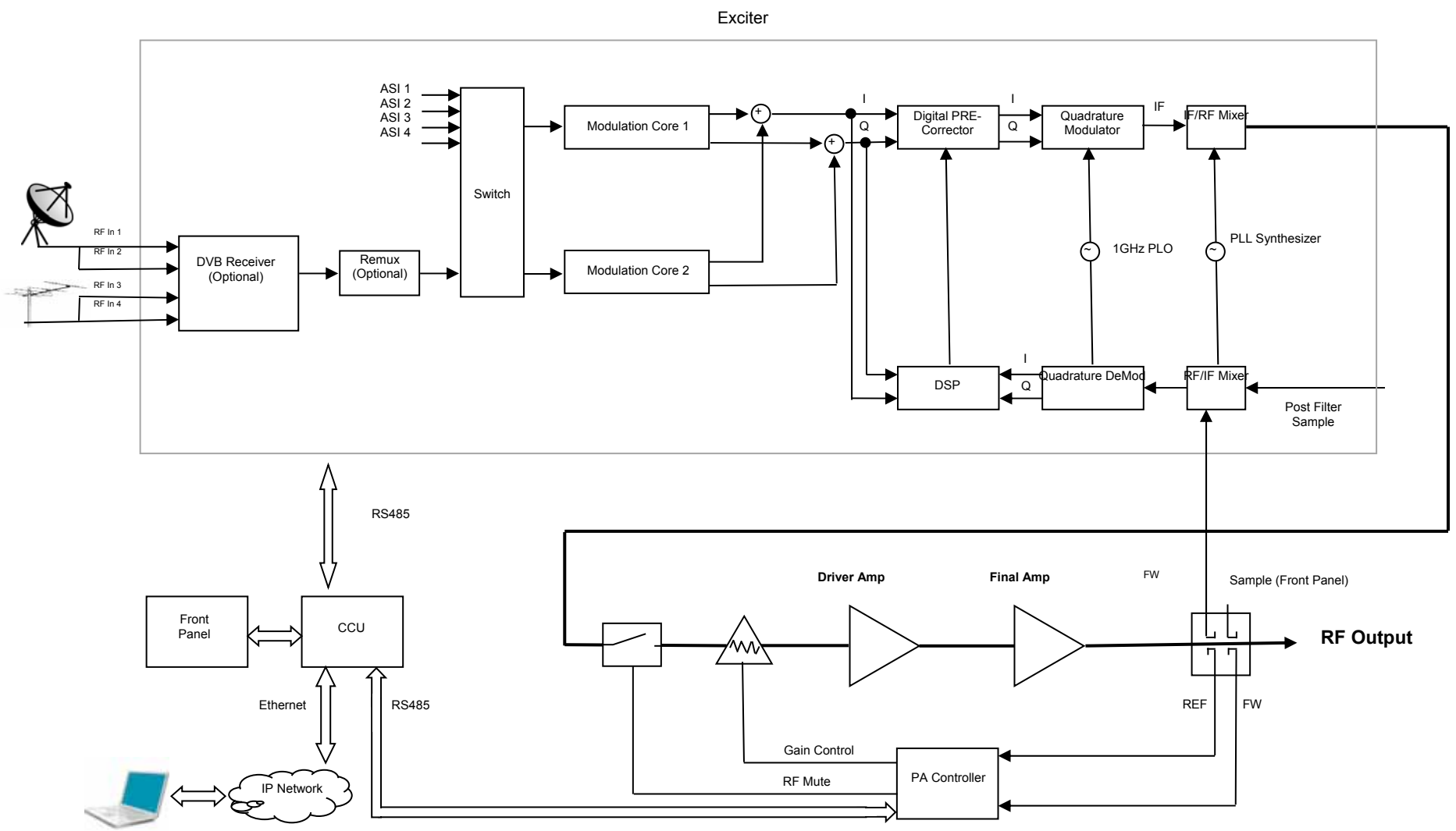


**MER Graph**

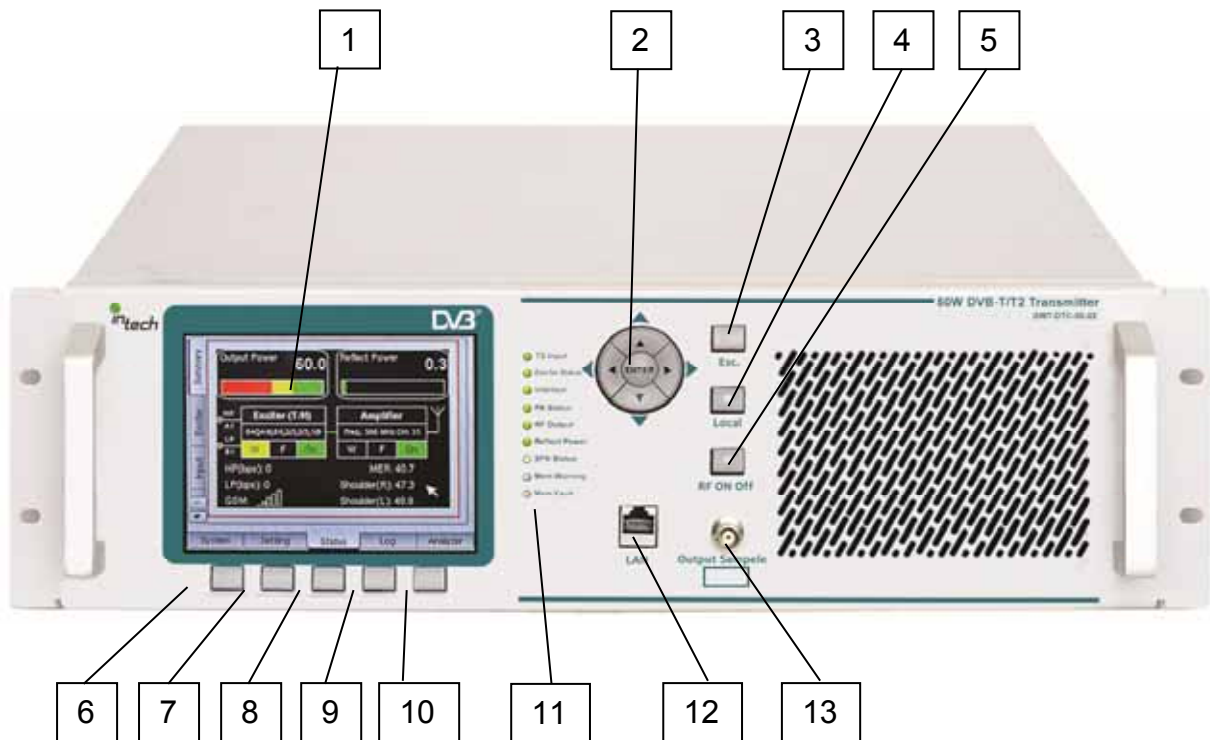


**Amplitude Graph**

By integrating all the above features in a 3U standard 19" subrack a compact and highly economic solution for the terrestrial broadcasting networks can be provided to the market.

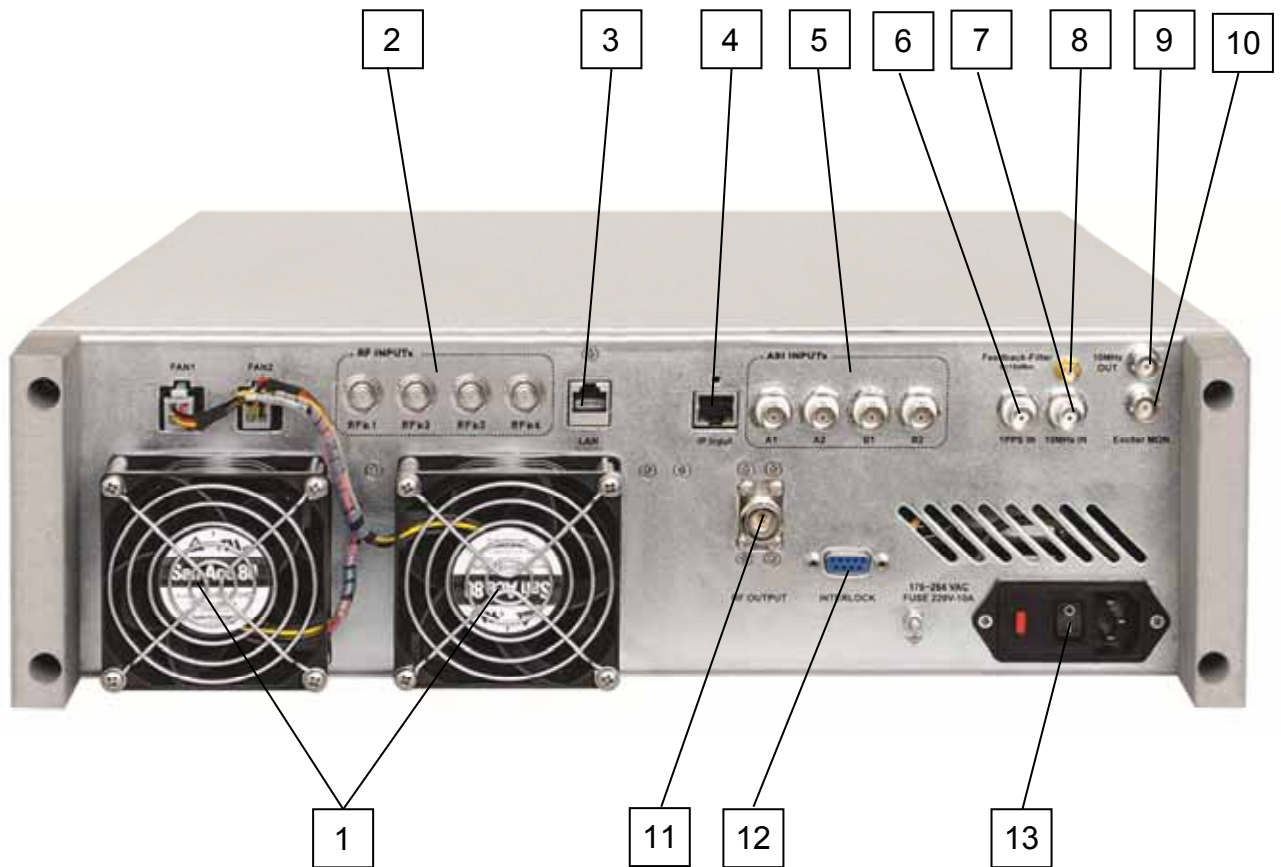


## Front Panel



Nr.	Description	Nr.	Description
1	LCD Display	8	Status button
2	Control Keys	9	Log button
3	Esc button	10	Analyzer button
4	Local button	11	LED indicators
5	RF On / Off button	12	LAN connector
6	System button	13	Output Sample – 1xBNC, 50 Ohm
7	Setting button		

## Rear Panel



Nr.	Description	Nr.	Description
1	Fan 1 - Fan 2	8	Post-Filter Feedback Input - 1xSMA, 50 Ohms, -10~10 dBm
2	RF Input (1-4)	9	10 MHz Reference Output - 1xBNC, 50 Ohm
3	LAN - WEB Interface for LAN connection	10	Exciter Monitor - 1xBNC, 50 Ohm
4	TSOIP Input - 1xRJ45 TS Over IP Input Based on SMPTE-2022	11	RF Output – 1xN Female
5	ASI Inputs - 4xBNC, 75 Ohms, Complying EN50083-9	12	Interlock – 1xDB15
6	1 PPS Reference Input - 1xBNC, 50 Ohms, LVTTTL	13	AC Mains: Power supply input and on/off button with 2A fuse , input range 85-264 VAC
7	10 MHz Reference Input - 1xBNC, 50 Ohms, 500mVpp~5Vpp		

## Technical Specifications

Complying Standards:	DVB (ETSI 300744 – ETSI 302755) ASI (DIN EN 500083-9) SFN (ETSI TS 101 191) Environmental Conditions (EN 300 019-1-3 V2.3.2 (2009-11) Class 3.3 Safety (IEC-215; EN 60950-1:2001; UL 60950-1:2003) EMC (ETSI EN 301489-1 / -14; ETSI EN 302296 / 302297; Rec. 1999/519/EC)
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### **RF**

Frequency Range	470 ÷ 862 MHz
Output Power	5 / 10 / 50 / 100 / 200 W rms

### **Environmental conditions**

Operating temperature	0 to +50°C
Storage temperature	-25°C to +60°C
Relative Humidity	Max. 95%, non-condensing

### **Power Supply**

Input Voltage	90-260 VAC, 50-60 Hz
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### **Modulation (DVB-T/T2)**

Number of Modulation Cores	Up to Two DVB-T Cores and One DVB-T2 Core
Output Channel Spacing	All channels within 24MHz Bandwidth
Transmission Modes	MFN, SFN (T/T2) & SFN-SISO/MISO (T2)
IFFT	2K, 4K, 8K (T/T2) & 1k, 16k, 32k (Normal/Extended) (T2)
Constellations	QPSK, 16QAM, 64QAM (T/T2) & 256 QAM (All Normal and Rotated) (T2)
Guard Interval	1/4, 1/8, 1/16, 1/32 (T/T2) & 1/128, 19/256, 19/128 (T2)
FEC (T)	1/2, 2/3, 3/4, 5/6, 7/8 (For Both LP & HP Streams)
FEC (T2)	1/2, 3/5, 2/3, 3/4, 4/5, 5/6
Interleaving	Native, In Depth (T) & Time, Frequency, Cell (T2)
Maximum Throughput	31.67 Mbps at each DVB-T channel & 50.34 Mbps at DVB-T2
Bandwidth	7,8 MHz (T) & 8 MHz (T2)

## Digital Adaptive Pre-correction

Pre-correction Modes	Single Output: Adaptive LC, Adaptive NLC Dual Output: Fixed NLC
Correction Criterion	MER, Right/Left Shoulder, Group Delay, In-band Flatness
NLC Performance	Typically 10 dB MER Improvement (Depending on PA Model)
LC Performance	Up to $\pm 5$ dB Amplitude and $\pm 500$ ns Group Delay Correction

## Quality Data

MER	> 34dB, typ. 38 dB
Shoulder attenuation	> 40 dB, typ. 42 dB
Frequency response	< $\pm 0.5$ dB
Group delay	< 10 ns
Average Crest Factor	7÷12 dB Adjustable (Envelope CCDF)
Harmonic and Spurious Levels	< 60 dBc

## Remote-control

Connection Port	2 x RJ45 (10/100 Base-T)
User Interface	WEB, SNMP v1/v2/v3

## Dimensions (W × H × D)

483 mm x 133 mm x 500 mm  
(19" wide, 3RU high)  
Weight 20kg approx.

**How to Order** (others version on request):

**TX04-051D** – 5W DVBT/T2 Transmitter  
**TX04-011D** – 10W DVBT/T2 Transmitter  
**TX04-051D** – 50W DVBT/T2 Transmitter  
**TX04-012D** – 100W DVBT/T2 Transmitter  
**TX04-022D** – 200W DVBT/T2 Transmitter

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