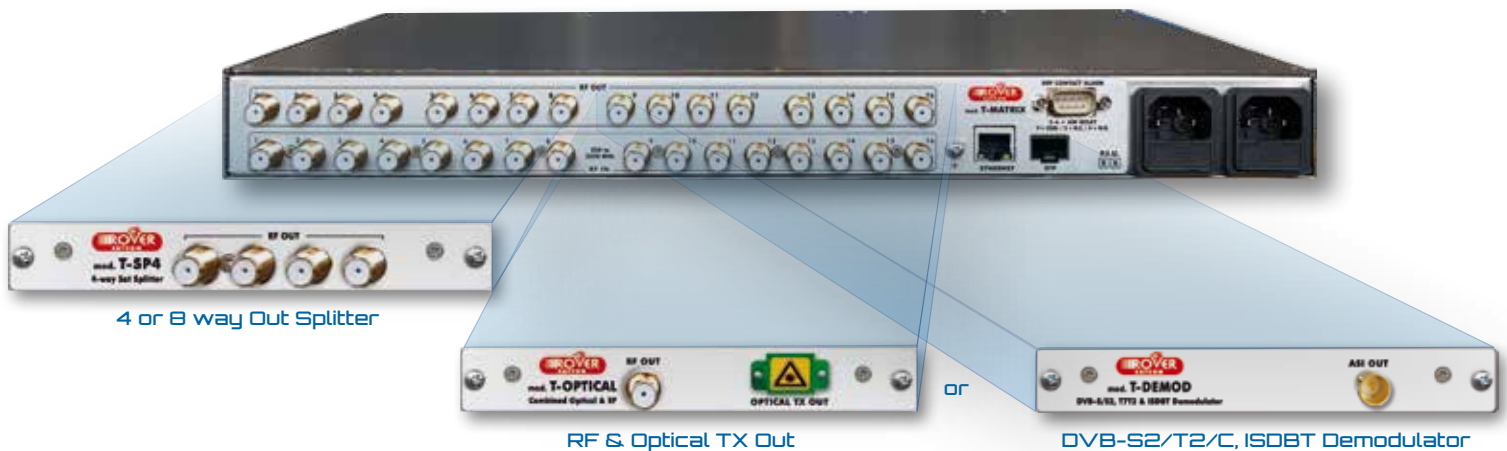
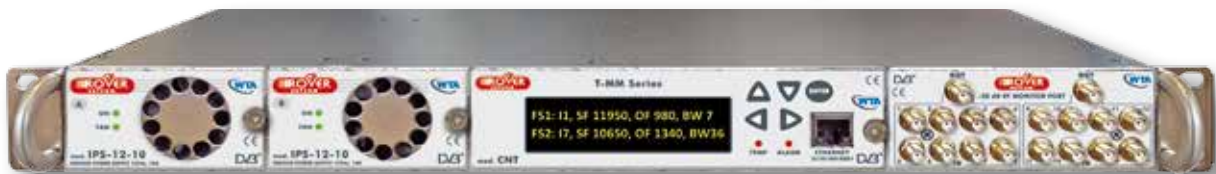
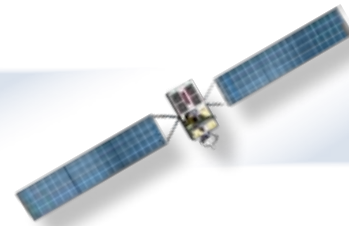




16 INPUTS FULLY CONFIGURABLE SAT TRANSPONDER MATRIX

Ultra WB from 250 to 2.350 MHz • 5 to 65 MHz Adjust. Filter BW • 5 year warranty

mod. T-M M



- Up to 48 freely configurable Freq. Slots to manage your own RF Freq. Plan
- Shift any SAT/TV Transponder from any of the 16 Input to the Outputs
- Each Transponders Output Level can be selected and Adjusted via AGC or MGC mode
- Monitoring and control via: local Display, WEB GUI & SNMP

**INNOVATIVE
PERFORMANCE**

for: SYSTEM INTEGRATOR,
TELEPORT BROADCASTER,
CABLE NETWORK, GOVERNMENT
& MILITARY COMMUNICATIONS

CE DVB

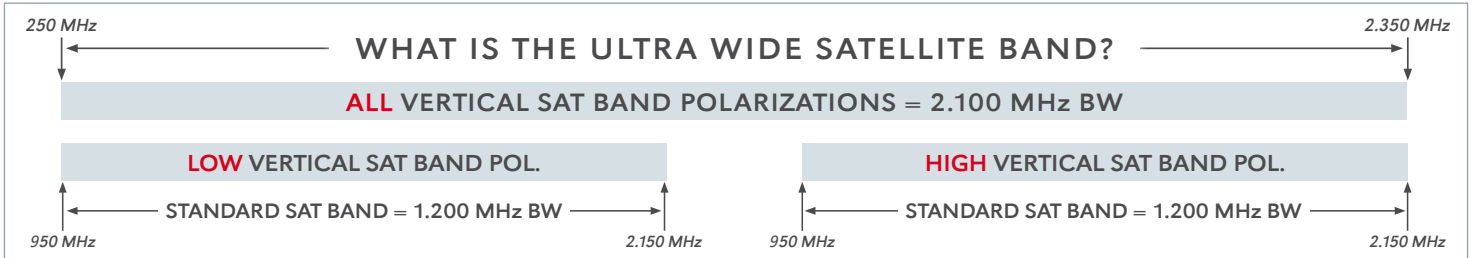
WTA
MEMBER



1972 > 2020 >>

48 YEARS OF INNOVATION

SATELLITE TRANSPONDER MATRIX **MATRIX**



HOW THE "T-MM" WORKS

You can select just the requested Transponder frequency from each of the 16 **Satellite Inputs** and repackage up-to 48 Transponders on your own desired Satellite Transponder Plan. Thanks to very high Selectivity, extremely Low Phase Noise and accurate Frequency Resolution we can repackage any SAT & TV transponders without introducing measurable signal degradation.

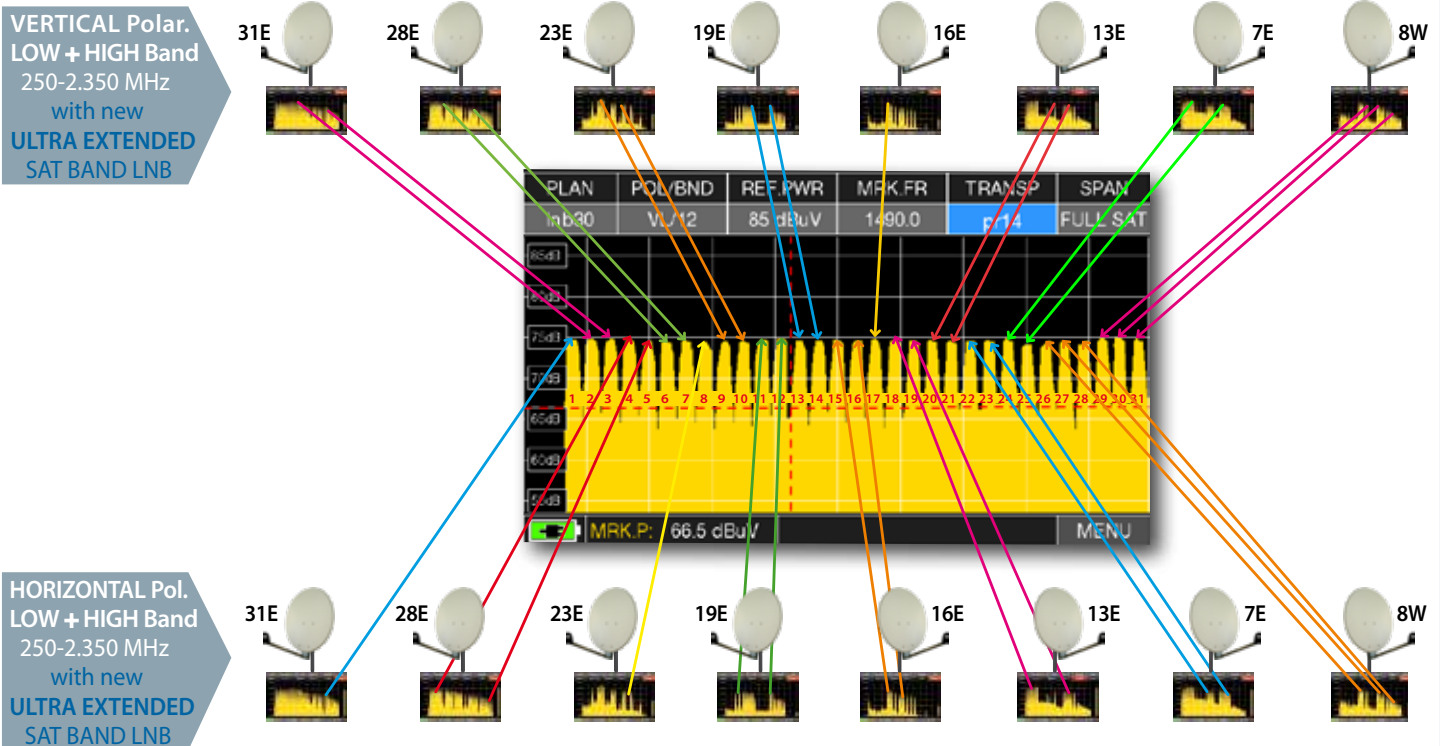
The Frequency Selection Range of each Satellite Input can be:

- the Standard Satellite Band from 950 to 2.150 MHz (1 KHz resolution);
- the Ultra Wide Satellite Band from 250 to 2.350 MHz (1 KHz resolution);
- The Transponder Band Width Filter can be selected from 5 to 65 MHz (1 KHz resolution).

The Frequency Range of repackaged Outputs Transponders can be:

- The Standard Satellite Band from 950 to 2.150 MHz (1 KHz resolution);
- the Ultra Wide Satellite Band from 250 to 2.350 MHz (1 KHz resolution);
- Of course we can use T-MM to convert also 1 Single Transponder.

Ex. of N.31 SELECTED and REPACKAGED TRANSPONDERS, from 8 or 16 DIFFERENT SATELLITE INPUT, RECONVERTED to 950 - 2.150 MHz

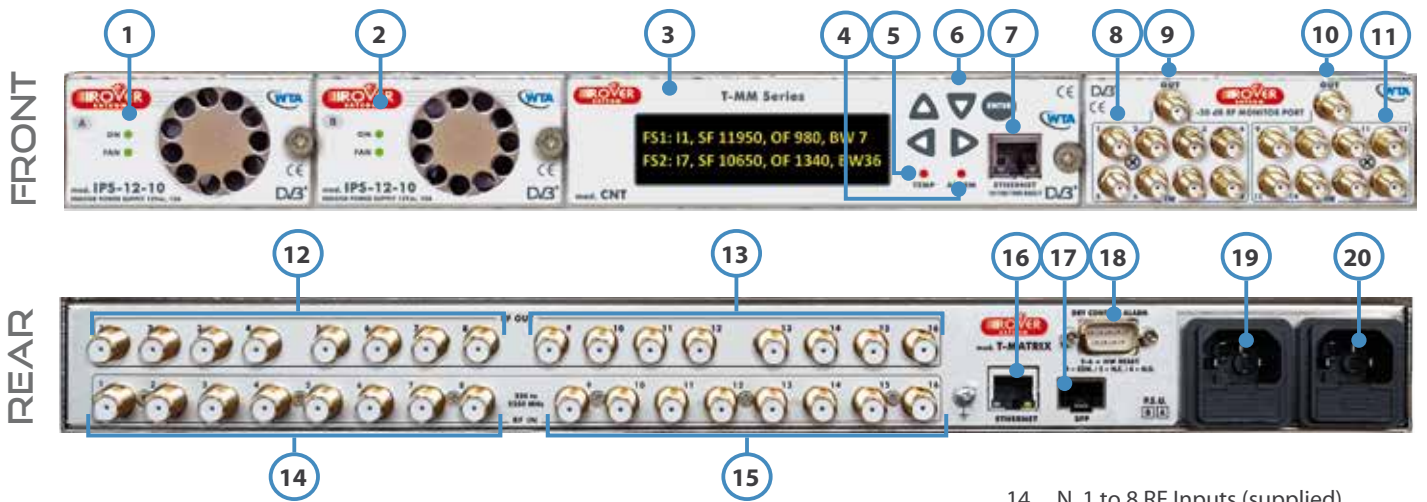


MAIN BENEFIT

- Fully configurable SAT Transponder Matrix, frequency & BW
- Shift any SAT/TV Transponder from any Input to the Output
- Up to 48 freely configurable Freq. Slots to manage your own RF Freq. Plan from 250 to 2.350 MHz
- Adjustable Transponder Filter Band Width from 5-65 MHz
- Selectable Gain Control – AGC or MGC
- High Input Power Dynamic Range
- RF Monitor Ports at the Front for each Input (opt.)
- Spectrum Analyzer for each Input (opt.)
- Combined Optical and RF outputs (opt.)

MAIN FEATURES

- 1 RU, 8 or 16 Inputs & 4/8/16 Outputs (up to 32 with external splitter)
- 16 Independent LNB Powering - Voltage and Tone at each Input
- Monitoring via LEDs, Dry Contacts, Local Display
- Monitoring & Control via web GUI or SNMP
- RF Power Sensor per each Input
- Hot-swappable PSUs & Controller Modules
- 3 independent Ethernet Ports, 1 Front and 1 Rear plus 1 Fiber SFP
- DVB-S/S2, T/T2 & ISDBT Demodulator for output Transponder identification and measurement (opt.)



- | | | |
|---------------------------------|------------------------------------|------------------------------------|
| 1/2. Hot Swap Power Supply Unit | 8. Group 1 RF Input Monitor Ports | 14. N. 1 to 8 RF Inputs (supplied) |
| 3. Hot Swap Local Control Unit | 9. Group 1 RF Out Monitor Port | 15. N. 9 to 16 RF Inputs (opt.) |
| 4. General Alarm LED | 10. Group 2 RF Out Monitor Port | 16. Rear Ethernet LAN Port |
| 5. Temperature Alarm LED | 11. Group 2 RF Input Monitor Ports | 17. SFP, Fiber or Copper Module |
| 6. Keyboard push button | 12. N. 1 to 8 RF Outputs (opt.) | 18. Dry Contact Alarm & Reset |
| 7. Front Ethernet LAN Port | 13. N. 9 to 16 RF Outputs (opt.) | 19. B-PSU Mains Receptacle & Fuse |
| | | 20. A-PSU Mains Receptacle & Fuse |

“T-MM” TECHNICAL SPECIFICATIONS

RF PORT CAPACITY:

- **Input port:** N. 8 (supplied) or 16 (opt. factory set)
- **Output port:** N. 1 (supplied) or 4 or 8 or 16 (opt., factory set)
- **Monitor Input port:** 8 or 16 (opt. one each input at -20 dB) SMA(f) 50 ohm (opt., factory set)
- **Monitor Output port:** 1 or 2, SMA(f) 50 ohm (opt., factory set)

OPTICAL PORT CAPACITY:

- **Input port:** N.1, 2 or 3 Optical RX (opt., factory set)
- **Output port:** N.1 Optical TX (opt., factory set)

RF SPECIFICATIONS:

- **Input Frequency range:** 350-2.350 MHz (usable from 250 MHz)
- **Output Frequency range:** 350-2.350 MHz (usable from 250 MHz)
- **Input/Output freq. resolutions:** 1 KHz
- **Input IP3:** +3 dBm Max
- **Input 1 dB comp.:** -7 dBm Max
- **Isolation between input:** 50 dB Max
- **Damage input level:** >10 dBm
- **Input connectors:** F(f) 75 ohm
- **Output connectors:** F(f) 75 ohm or (opt.) N/SMA 50 ohm
- **Input R.L.:** >12 dB (typ. 14 dB)
- **Output R.L.:** >14 dB (typ. 16 dB)

RF LEVEL/POWER SENSING:

- **For each transponder Input:** level for Single Transponder
- **For each transponder Output:** level for Single Transponder

SINGLE TRANSPONDER SPECIFICATIONS:

- **Transponder Output N.:** 24 for 8 Input or (opt.) 48 for 16 Input
- **Minimum Input Level (per Single Transp.):** -62 dBm, 45 dBμV
- **Max Output Level (per Single Transponder):** -17 dBm, 90 dBμV
- **Adjustable Output Level:** from -57 dBm, to -17 dBm, 50/90 dBμV
- **Total In/Out gain (per Single Transponder):** >50 dB
- **Gain control (per Single Transponder):** Selectable, AGC or MGC
- **Noise at 2.350 MHz (per Single Transponder):** 10 dB
- **Transponder Bandwidth filter:** adjustable from 5 to 65 MHz
- **Transponder Bandwidth selection resolution:** 1 KHz

- **Transponder flatness at 30 MHz BW:** 0,5 dB
- **Transponder flatness at 65 MHz BW:** 1,2 dB

INPUT SPECTRUM ANALYZER (opt.):

- **Input N.:** 8 or 16 (factory Set)
- **Span:** selectable from 5 to 2.100 MHz
- **RBW filter:** from 100 KHz to 1 MHz (according SPAN selections)
- **VBW filter:** from 1 KHz to 300 KHz (according SPAN selections)
- **Dynamic range:** > 50 dB

LNB POWERING CONTROL:

- **One for each RF SAT input:** independent and C.C. protected
- **DC Voltage:** OFF-13 V-18 V
- **Tone:** OFF-22 KHz

PERIPHERALS & CONTROL:

- **Local control:** with display and front LAN port
- **PC control:** via LAN port, through WEB and SNMP
- **Copper Remote control:** via rear LAN port
- **Fiber Remote Control via rear SFP Module**
- **LAN Port:** 10-100-1.000 BASE-T

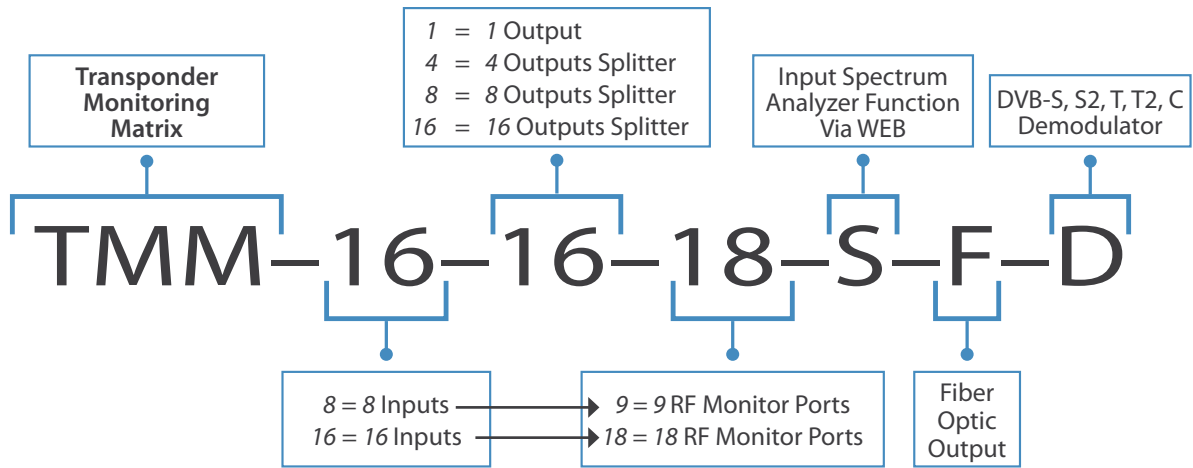
HOT SWAP REDUNDANT POWER SUPPLY:

- Hot-Swappable PSU's from the Front
- DC 12 V, 10 A
- 2 AC Receptacles from 2 independent Power Lines
- AC Mains Range = 110 to 240 VAC
- Power Consumption = 35 VA

GENERAL SPECIFICATIONS:

- **Size** = 1 RU 19", 430 mm deep
- **Net Weight** = 5 kg
- **Safety** = EN50083-1 & EN60950
- **EMC** = EN50083-2
- **Env. Conditions** = -30°/+55°C (Max 70°C)
- **Humidity** = Max. 95 %

ORDERING CODE DEFINITION



ORDERING MODEL / CODE EXAMPLE

MODEL / CODE	DESCRIPTION	APPLICATION
TMM-16-1	Transponder Matrix with 16 Inputs & 1 Output	SATCOM - CATV
TMM-16-8-18-S-F	Transponder Matrix with 16 Inputs, 8 Outputs, 18 RF Monitor Port, 16 Input Spectrum Analyzer, Fiber Optical & RF Output	SATCOM - CATV

OPTIONS

ITEM Model	DESCRIPTION	APPLICATION
TMM 16 IN	8+8 Sat Input	Add more Inputs
TMM 4 OUT	4 Sat Outputs	Add more Outputs
TMM 8 OUT	8 Sat Outputs	Add more Outputs
TMM 16 OUT	16 Sat Outputs	Add more Outputs
TMM 9 MP	9 RF Monitor Port	Add Monitor Port
TMM 18 MP	9+9 RF Monitor Port	Add more Monitor Port
TMM SPECT	Spectrum Analyzer Function	Add Spectrum Function
TMM F OPT	1 Fiber Optic Output & 1 RF Out	Add Fiber Optic TX
TMM DEM	DVB-S/S2/T/T2/C/ISDBT Demodulator	Add Demod. Funct.

TMM V2 2-9-19



Product
made in Italy by
Rover Broadcast.com

CERTIFICATES N°
1263 ISO 9001
1264 ISO 14001
1265 ISO 45001



Specifications and features are subject to change without notice.

RO.VE.R. Laboratories S.p.A.
Via Parini, 2 - 25019 Sirmione (BS) Italy
info@roverinstruments.com • www.roverbroadcast.com