



DVB-T2 Modulator/Exciter

DVB-T, -PAL, DVB-T2-Lite



RADITEK supports T2-Lite (for use with tablets and mobile phones), together with hybrid (combined) T2-Base/T2-Lite, which allows mixed T2-Base and T2-Lite frames on its DVB-T2 modulator products such as **RMODU-DVB-T-T2-Lite-PAL-M1-c19**, which also supports: MFN System A, SFN System B, SISO/MISO.

- Built-In AGC
- DAP with Adaptive Processing
- Embedded Power Measurement
- Dual drive/ 1+1 Redundancy options
- Full DVB-T2 modes
- Onboard GPS/GLONASS
- Up to +20dBm output
- Web based GUI & SNMP

- Uses field-proven DVB-T2 technology
- Cost-effective solution (Design-To-Cost)
- Straightforward integration with transmitter
- Ready-to-drive Power Amplifier Stages
- Cutting Edge Digital Adaptive Pre-correction algorithm
- Dual Cast modulation for smooth Analogue to Digital transition

Order Examples: RMODU-DVB-T-T2-Lite-PAL-M1-c19

Description: (Modulator/Exciter: PAL, **M1 (DVB-T/T2, DAP, 1U Rack Mount) on board GPS**)

Additional Options:

M1	DVB-T/T2 rack modulator exciter- with UHF output, DAP,
M2	DVB-T/T2 rack modulator - with UHF output, DAP and onboard GPS
M2 Kit	OEM Kit (board + front panel display + fans)
M3	Rack with PAL modulation
M4	Dual drive System (2x racks, 1x RF Switch, Cables)

Licensed for:

TSolP	TSolP input streaming
T2LI	T2-Lite
EGAP	Adaptive Processing (GAP)
AGC	Automatic Gain Control
NICA	NICAM 728 encoding
REDU	Redundancy
SNMP	SNMP client
ISDB	ISDB-T/T _B

HEVC-The future:

HEVC decreases the required bandwidth to enable more channels/bandwidth, and at the same time improves video quality at lower bit-rates. Additionally allows: 4K services and reduced OPEX associated with multi-screen content delivery networks. Early implementations of HEVC codec has shown a 35%-40% bit rate saving over H.264 and the algorithm is intended to reach the initial target of a 50% bit-rate reduction.

The first version of the standard includes three video compression profiles, all dedicated to consumer applications:

The **Main Profile**; the **Main 10 Profile**; and the **Main Still Picture Profile**. Note that the Main 10 Profile has been pushed right from the beginning of the standardization process by some broadcasters and manufacturers to achieve viewers' enhanced experience of Ultra HD with 10-bit color depth and a wider color gamut, and also to eliminate legacy issues associated with HEVC deployment with a single 8-bit depth profiles.

For example: Netflix, the American On-demand, service provider, launched (in April 2014) a 4K UHDTV channel. Compared to the other HD channels that Netflix streams at 5.8 Mbps, the 4K UHDTV channel is delivered at 15.6 Mbps using HEVC H.265 (currently frame rate is at 30 fps, but likely to be increased to 60 fps in future).

RMODU-DVB-T-T2-LITE-PAL-M1-c19

Specifications may be subject to change

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DVB-T2 Modulator Exciter

DVB-T, -PAL DVB-T2-Lite

Specifications	
Standards	Clock & Synchronization
DVB-T2: EN 302 755 v1.3.1, TS 102 831, TS 102 773 (T2-MI)	10 MHz & 1 PPS input/output
DVB-T: EN 300 744, TS 101 191	Onboard GPS/GLONASS (optional)
PAL : ITU-R BT.470-7, ITU-R BT.1700, ITU-R BT.1701-1	Stream Process and Modulation
ISDB-T/T_B : ARIB STB-B31 and TR-B14	Stream input redundancy management
ASI Interfaces	Transmission modes: MFN, SFN-SISO, SFN-MISO
2 input BNC connectors (75 Ω)	Modulation modes: System A, System B, Multi-PLP
1 output BNC connector (75 Ω)	T2-Lite 1.3.1 Annex 1 (option)
188/204 Bytes- 80 Mbps maxi. Packet/burst mode	Test modes: PRBS, Sinus, Spectrum-Gap and Null Symbol insertion
Gigabit Streaming Inputs (Option)	Digital Adaptive Pre-correction
2 x 10/100/1000 base-T : RJ45	Linear DAP: Amplitude ± 3 dB, Delay 0 to 3 μ s
Protocols: IP, RTP, UDP, IGMP (V2 & V3)	Non Linear DAP: Phase $\pm 180^\circ$
VLAN ID (1 to 4094) - IEEE 802.1q	Crest Factor Reduction (PAPR) and Protection clipping
TS encapsulation and FEC decoding: SMPTE-2022	2 x RF feedback inputs for DAP: -15dBm to -5dBm SMA connector (50 Ω)
RF Output over 470 MHz up to 862 MHz	Monitoring & Control
Modulator rack (to 0 dBm), N connector (50 Ω)	1 x 10/100/1000 base-T Ethernet port
Exciter rack: (to 20dBm), N connector (50 Ω)	
High MER: 44dB (typical)	Customizable Web GUI and SNMP
Monitor port: (-20dB) output -SMA connector (50 Ω)	LCD Front Panel Display
AGC input (Option)	1 x GPIO port for external switch and PA control
Vdc (external sensor) or RF input - user selectable	Physical
User-configurable high limit AGC	Dimensions: (D x W x H) 250 x 483 x 44 mm
Monitoring RF output	Weight: 4.5 Kg
SNR, left & right shoulders, forwarded & reflected powers	Operating temperature range: 0°C to 50°C
	Power supply: 90 to 240 VAC - 50 Hz

Format comparison:

FORMAT	HD		Ultra-HD	
Resolution (H x V)	1280x720	1920x1080	3840x2160	3840x2160
Frame rate	30 fps	30 fps	30 fps	60 fps
Uncompressed Bitrate Y/CbCr 4:2:2 10bit	1.125 Gbps	1.16 Gbps	6.95 Gbps	9.27 Gbps
MPEG-2	Seldom Used	Seldom Used		
MPEG-4 (H264/AVC)		Currently Used	Temporarily used	
HEVC-H.265		Could be used	Used	Used