dVMo-TP and TPX
COFDM TRANSMITTERS FOR BODY WORN APPLICATIONS

dVMo-TP

dVMo-TPX with Display and Control

The dVMo-TPX and dVMo-TP are COFDM transmitters intended for body-worn applications.

Both models have a similar RF performance but differ by having a different plug-in control interface, which comprises the lower third of the transmitter.

The dVMo-TPX (pictured above) is a fully featured version with a display and control buttons on the front. These enable selection of the 10 profiles each containing information on the power level and encryption key. The display can be muted for covert use.

A serial RS-232 data link is also available for GPS or other uses.

The dVMo-TP has a different smaller control panel without buttons or display. This is programmed from a PC and the profiles changed from the PC or by using the dVMo-PRF profile switching unit.

The transmitters can operate in either the DVB-T mode, which occupies an 8MHz bandwidth, or a 2.5MHz narrowband mode.

The transmitter has 4 different RF output power levels of 10, 50, 100 and 200mW.

The unit operates from 10 – 15V DC and has a low 0.6A power consumption (at 100mW) thereby allowing extended battery life

32-bit ABS encryption is available as standard and optionally 128-bit and 256-bit AES encryption can be fitted. Each profile can hold an individual encryption key for maximum security.

A quarter wave or end-fed dipole antenna is provided depending on the frequency.

Versions operating in the UHF (300 – 360 MHz) band and the S band (2.3 – 2.5 MHz) are available as standard. Other frequencies are available on request.

/specifications over

dVMo is manufactured by Wood and Douglas Ltd. and is supplied in Australia and the region by Decibel Engineering whose wholly owned subsidiary Westel Wireless Systems has been manufacturing P25 repeaters in Australia since 1999 with over 800 systems deployed in the field. Please contact us for further details.

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General		TPX	TP
Size	Length (+connectors):	155mm	139mm
	Width:	76mm	76mm
	Height:	24mm	24 mm
Weight		320g	305 g
Power Supply		10 – 15V DC	10 – 15V DC
Power Consumption		0.6A @ 100mW	0.6A @ 100mW
Operating Temperature		-20 to +50C	-20 to +50C
Control and Display		7 segment display / LEDs for standalone control	N/

Transmit RF Parameters	
Frequency of Operation	dVMo standard frequency bands 300 – 500 MHz, 800 MHz, 2.1, 2.3 GHz, 2.5 GHz and 3GHz
Encoding	QPSK, 16QAM
Occupied Bandwidth	8 MHz. 2.5 MHz
RF Power Output	10, 50, 100 and 200mW

Security and Encryption	
Security	Non-DVB-T COFDM prevents casual interception.
Encryption	
32 Bit ABS	Standard
128 and 256 bit AES	Option

External Interfaces	
Control	Serial data RS-232, bi-directional, for programming using PC TPX only has 7 segment display / LEDs for standalone control
Profiles	10 user programmable profiles.
Audio Input	Mono, unbalanced, high impedance 20kR Recommended line level 0dBu, +12dBu max
Video Input	Composite video. PAL or NTSC; 75R
Video amplitude	0.8 to 1.2V internally corrected to 1V based on sync amplitude measurement
Video delay	Typically 50ms across link, input to output for 8MHz channel.
User data output	38.4kbps maximum serial RS-232

Bit Rates for standard COFDM settings

Forward Error Correction (FEC) and Guard Interval features make the link more resistant to interference and signal loss, however, the total capacity of the link to carry user data is reduced as more Forward Error Correction and Guard are used, so there is a trade-off to be made.

The data capacity of the link is also affected by the modulation type selected: QPSK is preferred, being the most robust, but 16QAM is also available and offers a greater throughput.

Example: link using QSPK with an FEC of 1/2 and a guard of 1/32 can support 6.0320Mbps. If it is to carry audio, video and a data channel, 6.0320 - 0.859 - 0.04 = 5.133Mbps is available for video.

Reducing the FEC to 2/3 gives a supportable bit rate of 8.0427Mbps.