

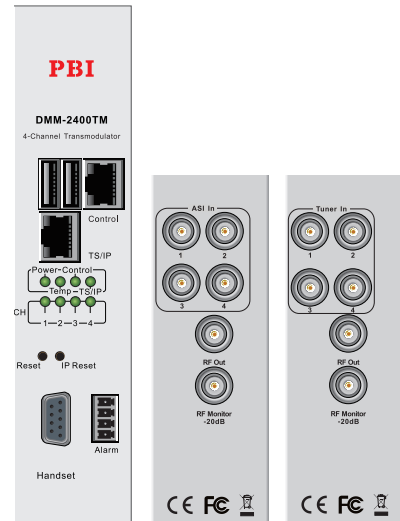
Digital TV Modulator and Trans-Modulator

DMM-2400TM Series 4-Channel Transmodulator

DMM-2400TM is a high density 4-Way modulator and trans-modulator module. It could receive up to 4 independent TS streams from Tuner, ASI or TS/IP (note 1) inputs, then modulates and combines them to 4 adjacent DVB-C RF carriers over a coaxial output. Different types of inputs are available as factory options, such as DVB-S/S2, DVB-C/T/T2 and ASI. With its built-in remux (note 1) functional block, DMM-2400TM also provides TV program filtering and re-multiplexing of TS inputs(note 2) to rebuild new TS outputs for modulation. TS/IP input is a software option.

Main features

- 4 independent TS inputs from DVB-S2/C/T/T2 tuners or TS/IP or ASI
- Built-in remux for TS from Tuner or ASI (note 1, 2)
- Service and PID filtering and re-multiplexing
- PSI/SI re-generation, NIT and LCN Insertion (note 2)
- TS/IP GbE input supports RTP/UDP, IGMP V2/V3, Multicast/Unicast (note 1)
- 4 adjacent DVB-C QAM over 48 ~ 996MHz
- Excellent MER (>40dB) & BER (<10E-9)
- Web remote control and SNMP supervision
- Software update via Ethernet or USB port



Specification

DVB-S/S2 Tuner Input (factory option)	
Connector Type	4×F type female 75Ω
Standard	EN 300 421(DVB-S), EN 302 307 (DVB-S2)
Frequency Range	950~2150MHz
Input Level	-25~-65dBm
Symbol Rate	2~45MBaud
Roll-off Factor	DVB-S QPSK: 0.35 DVB-S2 8PSK: 0.35, 0.25, 0.2
FEC Code Rate	DVB-S QPSK: 1/2, 2/3, 3/4, 5/6, 7/8 DVB-S2 QPSK: 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10 DVB-S2 8PSK: 3/5, 2/3, 3/4, 5/6, 8/9, 9/10
LNB Polarity Selection Voltage	13V for Vertical, 18V for Horizontal, 500mA Max., available only on tuner 1 & tuner 2
LNB Band Selection Tone	0/22KHz selectable, available only on tuner 1 & tuner 2
DVB-C Tuner Input (factory option)	
Connector Type	4×F type female 75Ω
Standard	EN 300 429
Input Frequency Range	51~862MHz
Input Level	45~95dBμV @ 256QAM, 6.875MBauds
Symbol Rate	1~7MBauds
Constellation	16/32/64/128/256QAM
Bandwidth	6MHz/7MHz/8MHz
Return Loss	7dB (typ.)
DVB-T/T2 Tuner Input (factory option)	
Connector Type	4×F type female 75Ω
Standard	EN 300 744(DVB-T), EN 302 755 (DVB-T2)
Input Frequency	104~862MHz (VHF/UHF)
Input Level	-20~-70dBm

Constellation	DVB-T: QPSK, 16QAM, 64QAM DVB-T2: QPSK, 16QAM, 64QAM, 256QAM
Bandwidth	6MHz/7MHz/8MHz
FFT Mode	DVB-T: 2K/8K DVB-T2: 1K, 2K, 4K, 8K, 16K, 32K
Guard Interval	DVB-T: 1/4, 1/8, 1/16, 1/32 DVB-T2: 1/4, 5/32, 1/8, 5/64, 1/16, 1/32, 1/64, 1/128
FEC Code Rate	DVB-T: 1/2, 2/3, 3/4, 5/6, 7/8 DVB-T2: 1/2, 3/5, 2/3, 3/4, 4/5, 5/6
Return Loss	7dB
ASI Input (factory option)	
Connector Type	4×BNC female, 75Ω
Standard	DVB-ASI, EN50083-9
Input Bit Rate	≤216Mb/s
TS over IP Input (software option)	
Connector Type	1×RJ-45, 100/1000 Base-T
Protocol	RTP/UDP, IGMP V2/V3, Multicast/Unicast
TS/IP Number	4 MPTS or SPTS
Max. Bit Rate	320Mb/s (total bit rate of 4 TS streams)
TS Processing of Built-in Re-Multiplexer (software option)	
Max. Input Bit Rate	4×216Mb/s
Max. Output Bit Rate	4×108Mb/s
Package Length	188/204
Re-multiplexing functions	PSI auto generation Service and PID remux, filtering and re-mapping NIT insertion and LCN edition EIT Processing
DVB-C Modulation	
Standard	J.83 Annex A, (Annex C available upon request)
Constellation	16QAM, 32QAM, 64QAM, 128QAM, 256QAM

Symbol Rate	2.5~6.99MS/s
BER	≤10E-9
MER	>40dB (with Tester Equalizer enabled)
RF output	
Connector Type	2 x F type female(1 for -20dB Monitoring), 75Ω
Frequency Range	48~996MHz with a step of 1kHz adjustable
Output Level	95~110dBμV with a step of 1dB adjustable, total of 4 carriers
Spurious Rejection	55dB (typical)
Return Loss	-10dB (typical)
ASI output Monitoring	
Connector Type	1×BNC female, 75Ω
Standard	DVB-ASI, EN50083-9
Function	Loop through Monitoring of either of 4 Tuner or ASI inputs

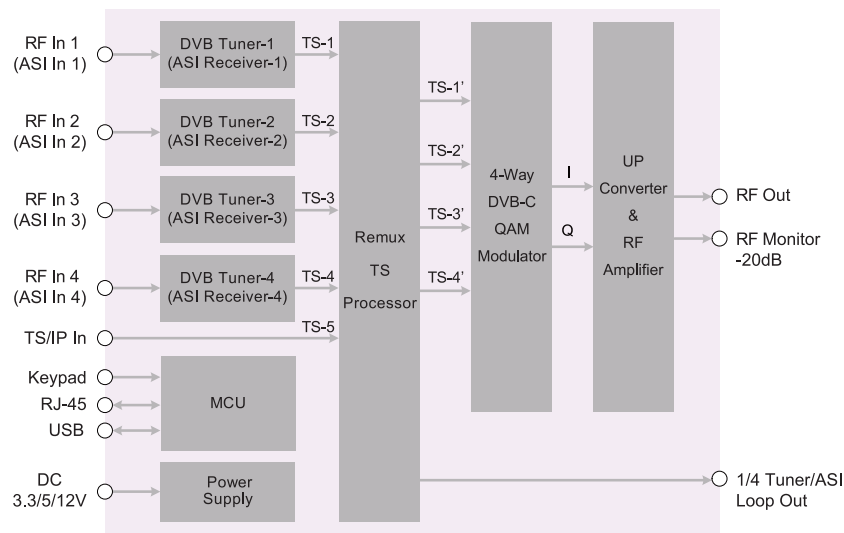
Output Bit Rate	≤216Mb/s
Control & Monitoring	
Connector Type	1×RJ-45, 10/100 Base-T, for equipment IP Control
Remote Control	HTTP Web Interface and SNMP
Software Upgrade	FTP and Telnet through IP
Physical	
Power Supply	DC 3.3V/5V/12V, supplied by DMM-1000MF chassis
Power Consumption	25W Max.
Dimension	379.7mm(D)×111.5mm(H)×37mm(W)
Weight	800g approximately
Operating Temperature	0 ~ 45°C
Storage Temperature	-10 ~ 55°C
Operating Humidity	10 ~ 90% Non-condensed

Note:

1. TS/IP input and re-multiplexer are exclusive software options. When the software for TS/IP input is loaded, the re-multiplexer function will be void, vice versa.
2. TS/IP input is not allowed to use.

Block Diagram

DMM-2400TM Functional Block Diagram


Order Information

		DMM-2400TM			
		30S2C	30T2C	30AC	30IC
Tuner input	DVB-S/S2	×4			
	DVB-T/T2/C		×4		
ASI-In				×4	
Built-in Remux		•	•	•	
TS/IP In		×4	×4	×4	
RF-Out		×4	×4	×4	×4
Modulation		DVB-C	DVB-C	DVB-C	DVB-C

Note: when enable TS/IP In function, the remux function will be disabled.