

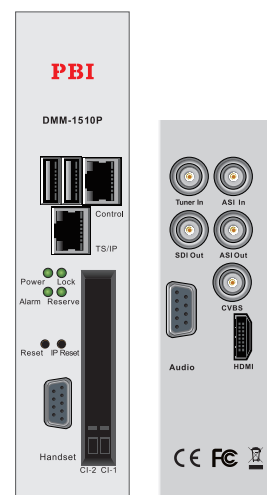
H.264 HD IRD and Processor Module

DMM-1510P Series Professional HD/SD IRD and Processor Module

As the up-to-date PBI's professional IRD and HDTV Processor of DMM1000 series, DMM-1510P succeeds all functions from DMM-1500P, and exceeds the previous generation in terms of performance & functionalities. DMM-1520P could support two AC-3 audio or down-mixed PCM audio pass-through over SDI and AES-EBU. The integrated decoder complies with MPEG-4 (AVC high profile level 4.1) and MPEG-2 (MP@ML&MP@HL) standards. Depending on the hardware configuration, DMM-1520P is able to support various optional of reception for DVB-T2/T, DVB-S2/S, DVB-C, DTMB, ATSC, ISDB-T, TS over IP, and ASI input. Equipped with two CI slots, multi-descramble could be achieved by working with professional CAM modules. The descrambled stream could be delivered to the ASI output directly, or to the built-in re-multiplexer, or to the IP Output. Meantime, the decoded video could be outputted via HDMI, SDI with embedded audio, and CVBS (down scaled) interfaces. The built-in re-multiplexer could accept transport streams from tuner, ASI input, IP input, and the descrambled stream from CI slot, and output stream could be highly customized through the user-configurable PSI/SI regenerator. The compact design and the powerful decoding ability make DMM-1520P one of the most competitive modules in DMM1000 series.

Main features

- Factory optional for DVB-S2/S/C/T2/T, DTMB, ISDB-T and ATSC demodulations
- MPEG-2 (MP@ ML& MP@HL) and MPEG 4 Part 10 (AVC high profile level 4.1) standards compliant and decoding
- Wide choice of I/O interfaces, including ASI input/output, CVBS output, HDMI output, SD/HD-SDI output (embedded 2 pairs stereos audio), AES/EBU output, 10M/100M/1000M TS over IP input/output
- PLS(Physical Layer Signalling) function available on DVB-S2 tuner
- Single or Multi PLP(Physical Layer Pipe) function available on DVB-T2 tuner
- Built-in 1 TS re-multiplexer
- BISS 1 or BISS E decryption
- Dynamic PMT detection and automatic update
- Support Tuner, ASI input and TS over IP input redundancy
- VBI TELETEXT, WSS and Closed Caption support over analog output or embedded in SDI
- 10M/100M/1000M Ethernet TS over IP Input and Output
- UDP/RTP & Unicast/Multicast for TS over IP input and output
- DVB (MPTS) and IPTV (SPTS) mode IP output
- Control and surveillance over WEB or HDMS software remotely
- Two DVB-CI slots, support multiple programs decryption
- Software up-gradable in the field easily through USB or update remotely by Web interface
- Support audio embedded in SDI output
- Support NTP(Network Time Protocol)
- Support 16 groups of parameters configuration preset
- RSSI, received Eb/No & BER available on Web interface



Specification

Tuner Input	
DVB-S/S2	
Connector Type	1×F type female 75Ω for Input, 1×F type female 75Ω for Loop through
Input 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	0, 13V, 18V selectable
LNB Band Selection Tone	0/22KHz selectable
Satellite Selection Command	DiSEqC 1.0
DVB-T/T2	
Connector Type	1×F type female 75Ω for Input, 1×F type female 75Ω for Loop through
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
Input Return Loss	7dB (typ.)
DVB-C	
Connector Type	1×F type female 75Ω for Input, 1×F type female 75Ω for Loop through
Input Frequency Range	51~862MHz
Input Level	45~75dBμV
Symbol Rate	1~7Mbaud (ITU J.83 Annex A)
Constellation	16QAM, 32QAM, 64QAM, 128QAM, 256QAM
Bandwidth	6MHz, 7MHz, 8MHz
Input Return Loss	7dB (typ.)
TS over IP	
Connector Type	1×RJ-45, 10M/100M/1000M Base-T for TS/IP
Effective Bit Rate	80Mb/s for full duplex with ProMPEG FEC, 200Mb/s for full duplex without ProMPEG FEC, 500Mb/s for 32xSPTS IP out only
Protocol	UDP/RTP, Multicast/Unicast, IGMPv3, ARP
TS Processing	
TS Input Management	Demux and Remux among Tuner, ASI Input and TS/IP Input
TS Output Management	Demux and Remux for ASI output
Service and PID Management	Remux, filtering and remapping
PSI/SI	PSI/SI table regeneration, PMT and SDT edition
Descrambler	DVB Common Scrambling Algorithm (CSA)
BISS Mode	BISS-1, BISS-E
Common Interface	Double PCMCIA slots, compatible with major CAMs in the market
ASI Output	

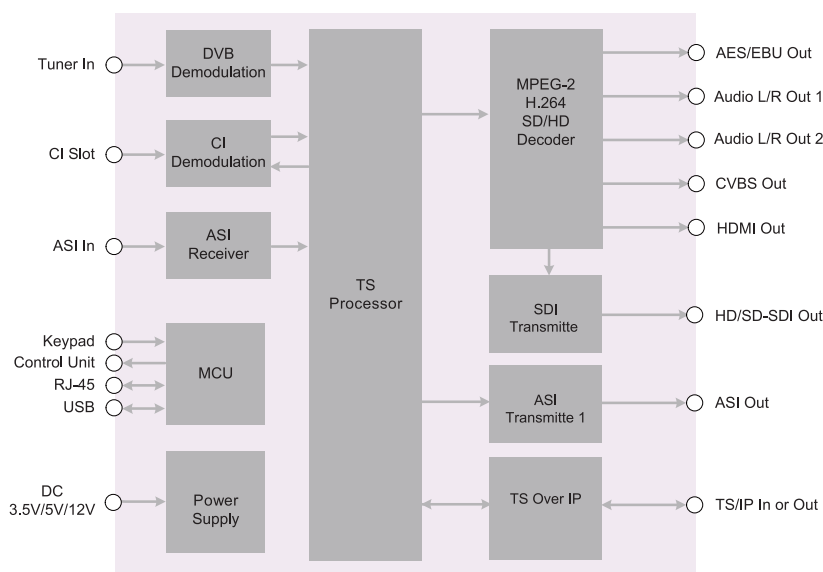
Connector Type	1xBNC female, 75Ω
Standard	DVB-ASI, EN50083-9
Output Bit Rate	≤200Mb/s
TS Processing	TS Re-multiplexed from Tuner, ASI Input and TS/IP Input
A/V Decoding	
Video Standard	MPEG-2(MP@ ML for SD, MP@HL for HD) MPEG 4/H.264 AVC Part 10 (MP@L3 for SD, HP@L4.1 for HD)
Audio Standard	MPEG-1 Layer-I/II, MPEG-2 Layer-II LC-AAC, HE-AAC
HDMI Output	
Standard	1×HDMI 1.3 interface (up to 1080i) 1080i×30, 1080i×29.97, 1080i×25, 720p×60, 720p×59.94, 720p×50, 480p×60, 576p×50, 576i×25, 480i×29.97
Video Resolution and Frame Rate	
Audio Embedded	1×stereo
HD/SD-SDI Output(Can be configured as ASI Output)	
Connector Type	1xBNC, female, 75Ω
Standard	SMPTE 259M, 270 Mb/s for SD, SMPTE 292M, 1.485 Gbit/s for HD
Level	800mV p-p
Video Resolution and Frame Rate	1080i×30, 1080i×29.97, 1080i×25, 720p×60, 720p×59.94, 720p×50, 576i×25, 480i×29.97
Video PID Bit Rate	≤50Mb/s
Digital Audio Output	
Connector Type	SDI embedded
Number of Output	2 pairs of audio PCM downmix or passed through by SDI
Audio Sampling Rate	32K, 44.1K and 48 KHz
Analog Audio Output	
Connector Type	1×DB9 female with 2 pairs of BNC adaptor 75Ω, or 1×DB9 female with 1 pairs of XLR adaptor 600Ω
Output Mode	Left, Right, Dual Mono, Stereo
Number of Output	1×DB9 female with 2 pairs of BNC adaptor 75Ω, or 1×DB9 female with 1 pairs of XLR adaptor 600Ω
Cross Talk Among Channels	>70dB
THD	<0.3% @ 400Hz, 1KHz test tone
Frequency Response	±0.5dB over 20Hz ~ 18KHz
Analog Video Output	
Connector Type	1×BNC
CVBS Standard	NTSC, PAL, and SECAM
Video PID Bit Rate	≤50Mb/s
Normal Output Level	1.0 Vp-p±5% (with standard test stream)
Frequency Response	<±1 dB, at 5.5 MHz for PAL/SECAM, 4.2MHz for NTSC and 15MHz for HD YPbPr
Chroma-Luma Delay	<±30 ns
Field Time Distortion	<2%
Line Time Distortion	<1%
Short Time Distortion	<2%
Differential Gain	<3%
Differential Phase	<2°
Ancillary Data Processing	
Subtitle	DVB, EBU
VBI	Teletext, WSS
Closed Caption	EIA 608, EIA 708, EIA 608-to-708
SDI Embedded	Teletext, WSS, Closed Caption
Redundancy	
Redundancy Port	among Tuner, ASI input and TS/IP input
Switching Condition	TS Sync Loss or no PAT packet
Switching Mode	Main, Spare

Control & Management	
Connector Type	1×RJ-45, 10M/100M Base-T, for equipment IP Control
Remote Control	SNMP v1/v2, HTTP (Web Interface), Proprietary HDMS (Headend Device Management System)
Local Control	Handset display and 6-key keypad with VGA interface

Equipment Upgrade	WEB HTTP or USB or Telnet
Physical	
Power Supply	DC 3.3V/5V/12V
Power Consumption	20W
Operating temperature	0~45°C
Storage temperature	-10~60°C
Operating Humidity	10~90%, non-condensed

Block Diagram

DMM-1520P Functional Block Diagram



Order Information

Model		DMM-1510P			
Interface		-20X	-22X	-30X	-32X
Input		FrontEnd Options: DVB-S2, DVB-T2, ISDB, ATSC, DTMB, DS3 Factory default: X=S2			
TS Input	ASI In x1	•	•	•	•
TS Output	ASI Out x1	•	•	•	•
CI	CI x2	•	•		
AV Output	HD/SD SDI x1			•	•
	SD SDI x1	•	•	•	•
	HDMI x1	•	•	•	•
	CVBS x1	•	•	•	•
	Audio L/R x2 OR Audio XLR x1	•	•	•	•
TS/IP	GbE RJ45 x1		•		•
Upgrade	USB x2	•	•	•	•
Control	RJ45 x1	•	•	•	•