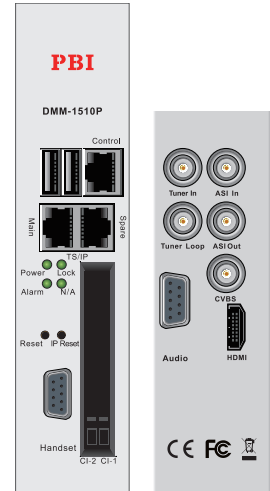


## DMM-1510P Series Professional HD/SD IRD and Processor module

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-1510P could support two AC-3 audio pass-through over SDI and AES-EBU. The integrated decoder complies with MPEG-4, MPEG-2 and HEVC (DMM-1510P-10/12 only) standards. Depending on the hardware configuration, DMM-1510P is able to support various optional of reception for DVB-T, DVB-S/S2/S2X, DVB-C, DTMB, ASTC, 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-1510P 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, MPEG 4 Part 10 and HEVC (DMM-1510P-10/12 only) 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
- Support Analog Audio, XLR and AES (factory option)
- PLS (Physical Layer Signaling) and ISI (Input Stream Identifier) function available on DVB-S2 tuner
- Single or Multi PLP(Physical Layer Pipe) function available
- 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 NTP(Network Time Protocol)
- Support 16 groups of parameters configuration preset
- RSSI, received Eb/No & BER available on Web interface

### Specification

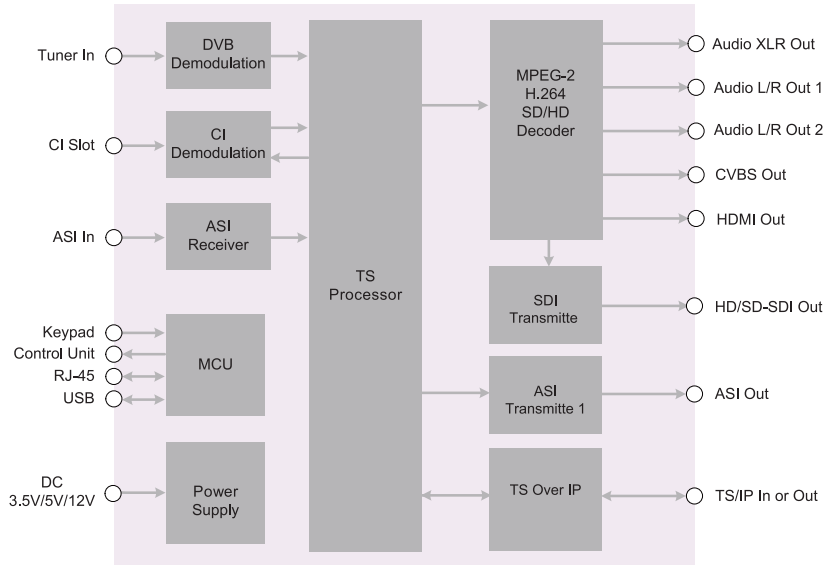
<b>Tuner Input</b>		
<b>DVB-S/S2/S2X (ISI Factory Optional)</b>		
Connector Type	1×F type female 75Ω for Input	
Input Frequency Range	950~2150MHz	
Input Level	-25~-65dBm	
Symbol Rate	2~45MBaud	
Roll-off Factor	DVB-S QPSK: 0.35	
	DVB-S2 8PSK: 0.35, 0.25, 0.2	
	DVB-S2X: 0.35, 0.25, 0.2, 0.15, 0.1, 0.05	
FEC Code Rate		DVB-S2 8PSK: 2/3, 3/4, 3/5, 5/6, 8/9, 9/10 DVB-S QPSK: 1/2, 2/3, 3/4, 5/6, 6/7, 7/8 DVB-S2X: 64800 bits FECFRAME VCM and ACM
LNB Polarity Selection		0, 13V, 18V selectable
LNB Band Selection Tone		0/22KHz selectable
Satellite Selection Command		DiSEqC 1.0

PLS(Physical Layer Scrambling)	0~262141 user configurable
ISI(Input Stream Identifier)	1~255 user configurable
<b>DVB-T</b>	
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	QPSK, 16QAM, 64QAM
Bandwidth	6MHz, 7MHz, 8MHz
FFT Mode	2K/8K
Guard Interval	1/4, 1/8, 1/16, 1/32
FEC Code Rate	1/2, 2/3, 3/4, 5/6, 7/8
Input Return Loss	7dB (typ.)
<b>DVB-C</b>	
Connector Type	1×F type female 75Ω for Input, 1×F type female 75Ω for Loop through
Input Frequency Range	48~860MHz
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.)
<b>TS over IP</b>	
Connector Type	2×RJ-45, 10M/100M/1000M Base-T for TS/IP
Effective Bit Rate	1. Main Port: 200Mb/s for full duplex without ProMPEG FEC Spare Port: Backup of the Main Port 2. Main Port: 500Mb/s for 32×SPTS IP out only, Spare Port: Backup of the Main Port
Protocol	UDP/RTP, Multicast/Unicast, IGMPv3, ARP
<b>TS Processing (DMM-1510P-30/32 only)</b>	
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 CA CAMs in the market
<b>ASI Output</b>	
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
<b>AV Decoding</b>	
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) HEVC (main and main 10 profile, main/high tier up to level 4.1)
Audio Standard	MPEG-1 Layer-I/II, MPEG-2 Layer-II LC-AAC, HE-AAC
<b>HDMI Output</b>	
Standard	1×HDMI 1.3 interface (up to 1080i) 1080P*60, 1080P*30, 1080i*60, (DMM-1510-10/12 only) 1080i*30, 1080i*29.97, 1080i*25, 720p*60, 720p*59.94, 720p*50, 480p*60, 576p*50, 576i*25, 480i*29.97

Audio Embedded	1×stereo
<b>HD/SD-SDI Output (Can be configured as ASI Output)</b>	
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
<b>Digital Audio Output</b>	
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
<b>Analog Audio Output</b>	
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
Cross Talk Among Channels	>70dB
THD	<0.3% @ 400Hz, 1KHz test tone
Frequency Response	±0.5dB over 20Hz ~ 18KHz
<b>Analog Video Output</b>	
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) <±1 dB, at 5.5 MHz for PAL/SECAM, 4.2MHz for NTSC and 15MHz for HD YPbPr
Frequency Response	<±30 ns
Chroma-Luma Delay	<±30 ns
Field Time Distortion	<2%
Line Time Distortion	<1%
Short Time Distortion	<2%
Differential Gain	<3%
Differential Phase	<2°
<b>Ancillary Data Processing</b>	
Subtitle	DVB, EBU
VBI	Teletext, WSS
Closed Caption	EIA 608, EIA 708, EIA 608-to-708
SDI Embedded	Teletext, WSS, Closed Caption
<b>Redundancy</b>	
Redundancy Port	among Tuner, ASI input and TS/IP input
Switching Condition	TS Sync Loss or no PAT packet
Switching Mode	Main, Spare
<b>Control &amp; Management</b>	
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
<b>Physical</b>	
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-1510P Functional Block Diagram



## Order Information

Interface		Model	DMM-1510P			
			-10X	-12X	-30X	-32X
Input	Tuner	x is tuner options: DVB-S2/S, DVB-T/C, DTMB, ATSC Factory default: x=S2				
	ASI In×1	•	•	•	•	
TS Processing	REMUX			•	•	
	CI×2	•	•	•	•	
Output	ASI Out×2	•	•	•	•	
	HDMI	•	•	•	•	
	HD-SDI			•	•	
	CVBS	•	•	•	•	
	Balance Audio	•	•	•	•	
	Digital Audio	•	•	•	•	
TSoIP	GbE		•		•	
USB	USB×1	•	•	•	•	
Control	RJ45×1	•	•	•	•	