

WDH-4500PM

Professional IRD and QAM/COFDM Transmodulator

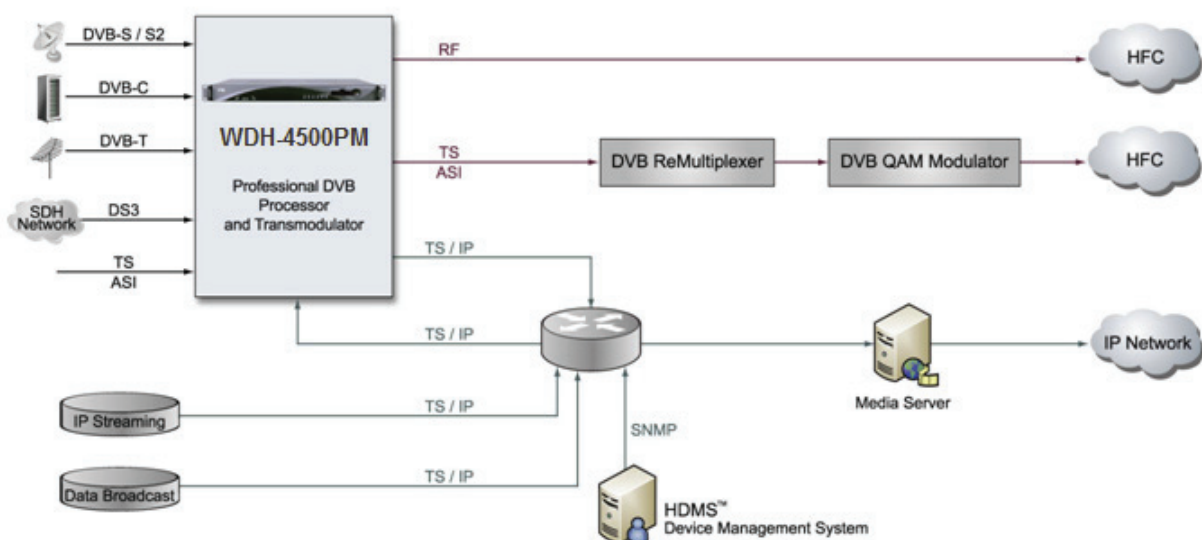


The WDH-4500PM is built with an integrated professional IRD and digital TV modulator. It can provide to broadcaster and operator with multiple functions of digital TV signal reception, re-multiplexing, descrambling, decoding and re-modulation. It supports a wide range of tuner input DVB-S/S2, DVB-T/T2, DVB-C and is used in digital satellite, cable and terrestrial TV networks. The re-multiplexing function enables creation of new SPTS or MPTS from tuner and ASI inputs. This new transport stream may be output to QAM or COFDM modulator, IP and ASI ports. By using the dual DVB common interfaces, WDH-4500PM can decrypt multiple pay TV services in each of the 2 slots. For security application, this equipment can be configured as a TS switch among tuner, ASI and TS/IP. The equipment can be controlled and supervised by SNMP, HTTP WEB and proprietary HDMS software.

Main Feature

- Multiple inputs DVB-S2/S/C/T, TS/IP, ASI and DS3/E3 (optional)
- DVB-C QAM or DVB-T COFDM RF modulation output
- Redundant TS inputs among Tuner, ASI and TS/IP
- 100M UDP/RTP, Unicast/Multicast, and SPTS/MPTS over IP (half duplex)
- ASI input and output
- Service Drop or PID filtering and Re-mapping
- Flexible re-multiplexing among ASI, Tuner and TS/IP inputs
- PSI/SI adapting and re-generation, including NIT, LCN insertion etc.
- 2xDVB-CI Slots, Multiple TV program decryption
- Remote Control and Supervision by SNMP,
- HTTP WEB and Proprietary HDMS software
- On Site software update through IP
- RSSI, received Eb/No & BER monitoring

Application Case



Specification

Tuner Input

DVB-S/S2 Tuner Input

Connector Type	1×F type female 75Ω for Input, 1×F type female 75Ω for loop through output
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 Voltage	0, 13V, 18V selectable
LNB Band Switching Tone	0/22KHz selectable
Satellite Selection Command	DiSEqC 1.0

DVB-C Tuner Input

Connector Type	1×F type female 75Ω for Input, 1×F type female 75Ω for loop through output
Input Frequency Range	48~862MHz
Input Level	45~75dBμV
Symbol Rate	1~7MBaud (ITU J.83 Annex A)
Constellation	16/32/64/128/256QAM
Bandwidth	6MHz/7MHz/8MHz
Input Return Loss	7dB (typ.)

DVB-T Tuner Input(DVB-T2 in option)

Connector Type	1×F type female 75Ω for Input, 1×F type female 75Ω for loop through output
Input Frequency Range	174~230MHz (VHF); 470 ~ 860MHz (UHF)
Input Level	-20~-70dBm
Constellation	QPSK, 16-QAM, 64-QAM
Carrier Bandwidth	6/7/8 MHz
FTT 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

ASI Input

Connector Type	1 x BNC Female, 75Ω
Standard	DVB-ASI, EN50083-9
Input Bit Rate	≤ 100Mb/s
Package Length	188 or 204 Bytes

DS3 Input (Option)

Connector Type	2×BNC female, 75Ω, including loop through
Standard	Compliant with ITU-T G.703
Frame Structure	Compliant with ITU-T G.752 and ITU-T G.804
Bit Rate	44.736Mb/s

TS over IP

Connector Type	1×RJ-45, 10/100M or 100/1000M for TS/IP
Effective Bit Rate	70Mb/s for 10/100M/1000M
Protocol	UDP / RTP, Multicast / Unicast, IGMPv2, ARP

TS Processing

TS Input Management	Remux and demux among Tuner / DS3(optional) / E3 (optional), ASI and TS/IP Inputs
TS Output Management	Remux and demux for mirrored ASI outputs

Service and PID management	Remux, filtering and remapping
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PSI/SI	PSI/SI table regeneration, NIT and SDT edition, LCN Edition and Re-generation
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

ASI Output

Connector Type	2×BNC Female, 75Ω
Standard	DVB-ASI, EN50083-9
TS Processing	mirrored TS Re-multiplexing from Tuner, ASI and TS/IP inputs

DVB-C Re-Modulation

Constellation	J.83 Annex A: 16/32/64/128/256QAM; J.83 Annex B: 64/256QAM
Symbol Rate	3~7.2MS/s
I/Q Amplitude Error	< 0.3%
I/Q Phase Error	< 0.3°
Phase jitter	< 0.5°RMS
MER	> 35dB

DVB-T Re-Modulation

Constellation	QPSK/16QAM/64QAM
Bandwidth	5/6/7/8MHz
FFT Mode	2K
Guard Interval	1/4, 1/8, 1/16, 1/32
Code Rate	1/2, 2/3, 3/4, 5/6, 7/8
MER	>36dB

RF Output

Connector Type	1×F type female, 75Ω (primary output) 1×F type female 75Ω (-20dB for monitoring)
Output Frequency Range	48~860MHz agile, step by 10 KHz
Output Level	95~120dBμV, step by 1dBμV
Spurious Rejection	55dB (typ.)
Output Return Loss	12dB (typ.)

Control & Monitoring

Connector Type	1×RJ-45, 10/100M, for equipment IP Control
Remote Control	SNMP, HTTP (Web Interface), Proprietary HDMS (Headend Device Management System)
Local Control	LCD display and 6-key keypad
Serial Port	1×RS-232 D-sub female, for debug use
Software Upgrade	FTP loader and Telnet

Physical

Dimension	483×399.7×44mm
Weight	6Kg
Power Supply	AC 90V ~ 250V 50Hz/60Hz
Power Consumption	30W
Operating Temperature	0~45°C
Storage Temperature	-10~60°C
Operating Humidity	10~90%, non-condensed

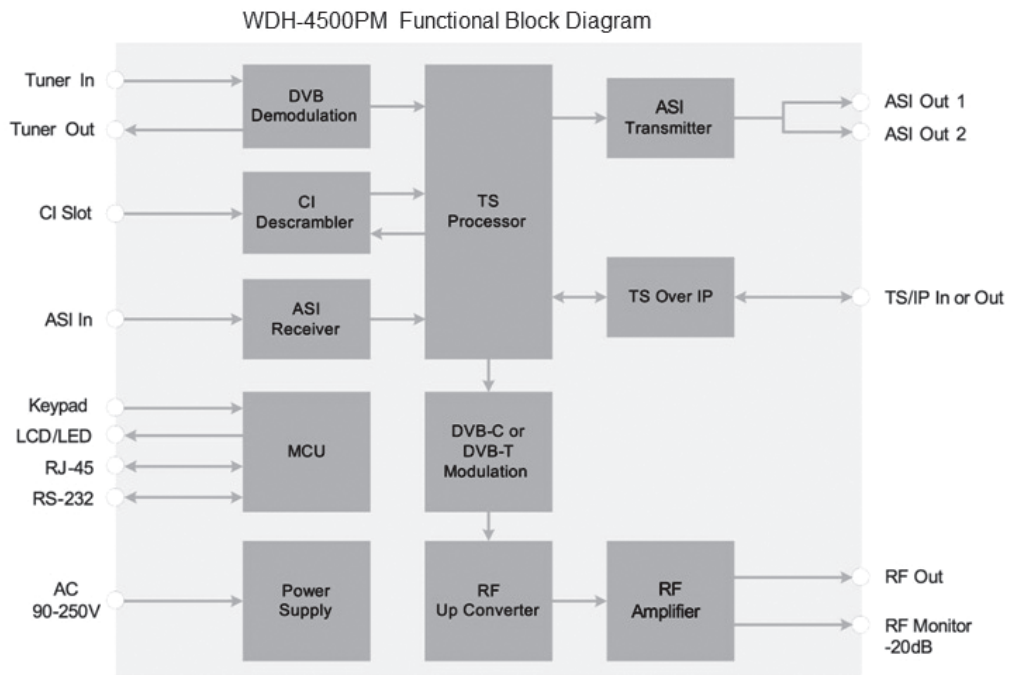
Certification

EMC: EN 55024:1998+A1:2001+A2:2003, EN 55022:2006+A1:2007, EN 61000-3-2:2006, EN 61000-3-3:2008

FCC: Part 15 Class B

LVD: EN 60950-1:2006 + A11:2009

Block Diagram



Back Panel Interface



Order Information

Functionality / Model	WDH-4500PM-XX							
	-S2C	-CC	-TC	-DC	-S2T	-CT	-TT	-DT
Tuner Type	DVB-S2	DVB-C	DVB-T	DS3/E3	DVB-S2	DVB-C	DVB-T	DS3/E3
ASI Input	•	•	•	•	•	•	•	•
Built-in Re-mux	•	•	•	•	•	•	•	•
ASI Output (mirrored)	•	•	•	•	•	•	•	•
10/100M TS/IP Extension Board	•	•	•	•	•	•	•	•
QAM Modulation	•	•	•	•				
COFDM Modulation					•	•	•	•