

WHX-4440DP

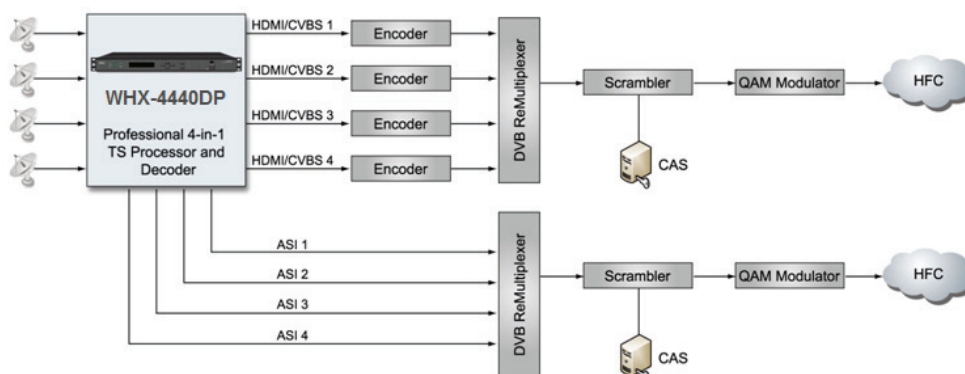
Professional 4-in-1 TS Processor and Decoder

WHX-4440DP is a high-density, modular and CI decryption professional TS processor equipped with 4 independent tuners, which can be either of DVB-T/T2, DVB-S2/S, DVB-C, DTMB, ISDB-T and ATSC types. It supports a wide range of application by combining 4 tuners processing capability with industry standard outputs including ASI and TS/IP. WHX-4440DP has 4 DVB common interface slots capable of working with most of well-known CAS in the market to de-encrypt multiple pay TV services. WHX-4440DP is also a professional IRD that features a broadcast quality decoder of MPEG-2 and MPEG-4 AVC/H.264 in both Standard Definition and High Definition formats, and provides a variety of industry standard digital and analog outputs, including 4xHDMI, 4xCVBS video, 4xAES/EBU Audio, and 4xBalance Audio. The unit also performs HD down-conversion and aspect ratio adaptation of HD programs to generate professional quality baseband analog video and audio outputs for easy integration with existing cable network infrastructure. WHX-4440DP provides operators an ideal solution for multi receiving, re-multiplexing, descrambling, multi decoding and TS over IP operations, all these features make WHX-4440DP one of the most competitive product in the head-end market.

Main Feature

- 4 x Tuners Input, Supports variety of input options DVB-T2/T/S2/S/C/DTMB/ATSC/ISDB-T
- Supports DVB-S2 Input Stream Identifier (ISI, optional) and DVB-T2 Multi PLP and SFN MIP pass through
- Built-in TS re-multiplexer receives from IP, CI Slot1 to CI Slot4 and TS/IP inputs
- 4xDVB-CI Slots, multi-program decryption, BISS-1 and BISS-E decryption
- 4xASI output the transport stream from CI Slot1 to CI Slot4 or BISS decryption
- 1xchannel full duplex TS over IP, 5xchannels MPTS IP out, or 128xchannels SPTS IP out
- Multiple Analog and Digital Outputs, 4xHDMI, 4xCVBS, 4xAES/EBU Audio, and 4x XLR Audio
- Dynamic PMT detection and automatic updating
- Supports VBI TELETEXT, EBU/DVB Subtitle, Closed Caption
- Remote Control and Supervision by SNMP v2, HTTP WEB and Proprietary HDMS software
- On Site software update through IP or USB
- One alarm Relay with D-sub 9 male connector
- RSSI, received signal strength, Eb/NO, C/N and BER monitoring
- Redundency power supply

Application Case



Specification

Tuner Input	
DVB-S/S2 Tuner Input (ISI Factory Optional)	
Connector Type	4×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
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 Selection Tone	0/22KHz selectable
Satellite Selection Command	DiSEqC 1.0
ISI ID	1~255 user configurable
DVB-C Tuner Input	
Connector Type	4×F type female 75Ω for Input
Input Frequency Range	51~862MHz
Input Level	51~75dBμV
Symbol Rate	1~7Mbaud (ITU J.83 Annex A)
Constellation	16QAM, 32QAM, 64QAM, 128QAM, 256QAM
Bandwidth	6MHz, 7MHz, 8MHz
Input Return Loss	7dB (typ.)
DVB-T/T2 Tuner Input	
Connector Type	4×F type female 75Ω for Input
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
Guarding 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.)
DTMB Tuner Input	
Connector Type	4×F type female 75Ω for Input
Input Frequency Range	46.5~866MHz
Input Level	-87~-29dBm
Symbol Rate	7.56Mbaud
Bandwidth	6MHz/7MHz/8MHz
Constellation	4QAM-NR,4QAM,16QAM,32QAM,64QAM
Guard Interval	PN420, PN595, PN945
Roll-off Factor	0.05
Interleaving Depth	240,720
FEC Code Rate	0.4, 0.6, 0.8
ATSC Tuner Input(compatible with ITU J.83 Annex B)	
Connector Type	4×F type female 75Ω for Input
Input Frequency Range	54~864MHz
Input Level	-75~-7dBm(ATSC 8VSB)
Symbol Rate	10.762Mbaud
Constellation	8VSB
Roll-off Factor	0.115
Bandwidth	6MHz

TS Processing	
TS Input Management	Demux and Remux among IP input and CI1 to CI4 Inputs
TS Output Management	ASI1 to ASI4 output directly pass through the TS from CI1 to CI4, Demux and Remux for ASI5, ASI6 output and IP output
Service and PID Management	Service and PID level for Remux1, Remux2
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	4×PCMCIA slots, compatible with major CA CAMs in the market
ASI Output	
Connector Type	Daughter Board: 4×BNC female, independence output, 75Ω Main Board: 2×BNC female, independence output,75Ω
Standard	DVB-ASI, EN50083-9
Output Bit Rate	≤ 200Mb/s
TS Processing	Daughter Board: ASI1 to ASI4 out pass through the TS from CI 1 to CI4 Main Board: ASI5 out the TS from Remux1, ASI6 out the TS from Remux2
TS over IP	
Connector Type	1×RJ-45, 100/1000 Base-T
Effective Bit Rate	Support 3 different mode(need to reboot unit if change the TS/IP mode): 1. Max.430Mb/s for 6xchannels(4xchannels directly pass through the TS from CI1 to CI4, 1xchannel output the TS from Remux1, and 1xchannel output the TS from Remux2) MPTS IP out without IP in, 2. Max.430Mb/s for 128xchannels SPTS IP out the TS from one source, without IP in, 3. Max.80Mb/s for full duplex 1xchannel MPTS
Protocol	UDP/RTP, Multicast/Unicast, IGMPv3, ARP
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-AACAC3, AC3+
HDMI Output	
Standard	4×HDMI 1.3 interface (up to 1080i)
Video Resolution and Frame Rate	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	4×stereo
Digital Audio Output	
Connector Type	4×DB15 female with AES/EBU adaptor cable
Number of Output	4×audio are decoded or passed through by AES
Audio Sampling Rate	32K, 44.1K and 48 KHz
Analog Audio Output	
Connector Type	4×DB15 female with 1 pair XLR adaptor cables
Output Impedance	600Ω for balance
Output Mode	Left, Right, Dual Mono, Stereo

Number of Output	4 x stereo audio output for Balance(XLR adaptor cables)
Cross Talk Among Channels	>70dB
THD	<0.3% @ 400Hz, 1KHz test tone
Frequency Response	±0.5dB over 20Hz ~ 18KHz
Analog Video Output	
Connector Type	4×DB15 female with CVBS adaptor cable(BNC)
CVBS Standard	NTSC, PAL, and SECAM
Video PID Bit Rate	≤50Mb/s
Norminal 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

Alarm

Connector Type	1×D-sub 9 male
Switching Condition	User Defined

Control & Monitoring

Connector Type	1×RJ-45, 10/100 Base-T, 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 only
Equipment Upgrade	USB,WEB http and FTP

Physical

Dimension	505mm x 445mm x 45mm
Weight	7.9kg
Power Supply	AC 90V ~ 250V, 50/60Hz
Power Consumption	30W (exclusive of LNB power)
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

Back Panel Interface

