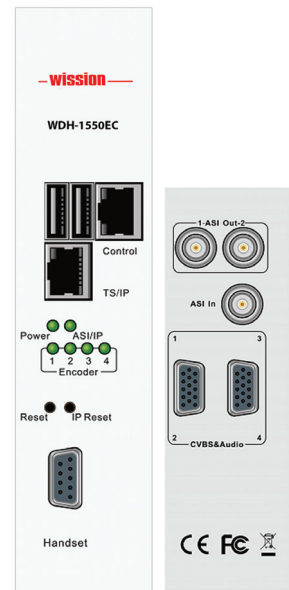


# WDH-1550EC/1551EC

## 4-way Encoder/Transcoder Series

WDH-1550EC/1551EC are a series of high density H.264 HD/SD & MPEG-2 SD real time encoders/transcoders. This blade type design integrates 4 independent encoders/transcoders, 1 Re-multiplexer, 1 ASI\_in, 1 ASI\_out, and 1 Gigabit (GbE) TS/IP port. New MPTS could be generated with the built-in Re-multiplexer from any combination of services among ASI\_in, TS/IP\_in and the local encoders. HD-SDI and CVBS inputs are available as factory hardware options.

All models provide two TS/IP operation modes. The first is “Full Duplex”, which allows one MPTS or SPTS inputted to make up a new MPTS with local encoders, then sends the new one over IP & ASI\_out. In the second mode “Multiple output” which delivers up to five streams over IP. There are four un-stuffed SPTS (lower bit rate but less PCR accurate than normal SPTS, from local encoders) and one MPTS (from internal Re-multiplexer) over the IP with different Unicast or Multicast IP addresses. All models support transcoding function. They accept an MPTS and transcode up to 4 channels inside and the final output is formed as an MPTS and/or 4 un-stuffed SPTS.



### Main Feature

- Compliant with H.264/AVC Baseline, Main & High Profile @ L4.0 or less & MPEG-2 MP@ML
- 4 independent AV inputs (SDI, CVBS, note: see Model List)
- Independent Encoding/Transcoding mode control
- Internal reMultiplexer, new MPTS is made up from ASI\_in, TS/IP\_in & Local Encoders
- MPTS remultiplexed and 4 local un-stuffed SPTS available over IP
- Video Input Resolution: 1080i, 720p, 576i, 480i (note: CVBS models support SD only, see Model List)
- Minimum Video Bit Rate 500Kb/s (Standard PAL or NTSC SD video, while total bit rate ~ 700Kb/s)
- Independent Vertical & Horizontal pixel scale
- Transcoding from MPEG2 to H.264/AVC & vice versa
- VBR & CBR mode for encoding/transcoding
- Audio coding: MPEG1 Layer II, MPEG2/4 AAC-LC, HE-AAC(note: see Model List)
- SNMP & HTTP WEB for monitoring & control

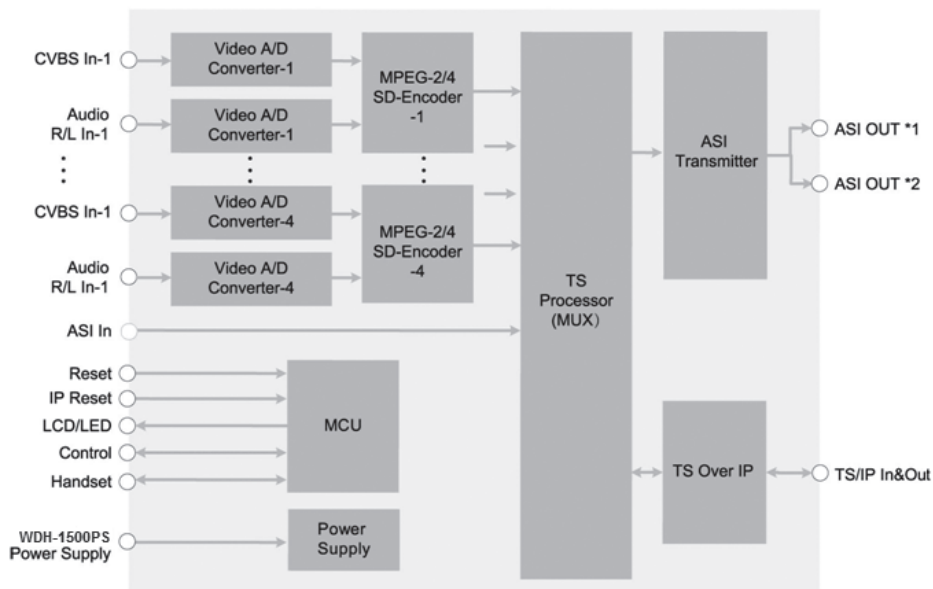
## Specification

Video Input & compression Coding	
Video Input Interfaces	4xSDI, or 4xCVBS (note: see Model List)
Coding Profile & Level	H.264/AVC BLP, MP, HP @ L4.0 or less, MPEG-2 MP@ML (note: see Model List)
Sampling Format	4:2:0, 10-bit, YCbCr
Compression Bit Rate	600K~20Mbps
Video Resolution & Recommend	1080i (1920x1080) @25Hz, 29.97Hz, 30Hz: SMPTE274M: 1~20Mb/s 720p 1280x720 @25Hz, 29.97Hz, 30Hz: SMPTE296M: 1~20Mb/s
Compression Bit Rate H.264	480i (720x480) @29.97Hz: SMPTE656M: 3~10Mb/s 600K~10Mb/s 576i (720x576) @25Hz: SMPTE656M: 600K~10Mb/s
Video Resolution & Recommend	480i (720x480) @29.97Hz: SMPTE656M: 3~10Mb/s
Compression Bit Rate MPEG 2	576i (720x576) @25Hz: SMPTE656M: 3~10Mb/s
Video Resolution Down Scaling	Vertical & Horizontal adjustable respectively (frame rate is not scalable)
Aspect Ratio	4:3, 16:9 Selectable
Audio Input & Compression Coding	
Audio Input Interfaces	SDI Embedded or Analog (note: see Model List)
Coding Standard	MPEG1 Layer II MPEG-2/4 AAC-LC/HE-AAC(V1, V2) (available on WDH-1551EC series)
Sampling Rate	48KHz
Recommend	MPEG1 Layer II :32~192Kbps(mono), 64~384Kbps( stereo)
Compression Bit Rate	MPEG-2/4 AAC-LC :24~256Kbps(mono), 48~512Kbps( stereo) MPEG2/4 HE-AAC(V1, V2) :16~128Kbps(mono), 32~256Kbps( stereo)
Transcoding	
Transcoding Mode	H.264 to MPEG-2, H.264 to H.264, MPEG-2 to MPEG-2, MPEG-2 to H.264
Input Standard	MPTS, MPEG2 MP@ML MP@HL, MPTS, H.264/AVC Main/High/Baseline Profile @ L4.0 or less (but not FMO, ASO & RS of Baseline)
Output Standard	MPTS and/or un-stuffed TS, MPEG2 MP@ML MPTS and/or un-stuffed TS, H.264/AVC Main/High/Baseline Profile @ L4.0 or less (but not include FMO, ASO & RS of Baseline)

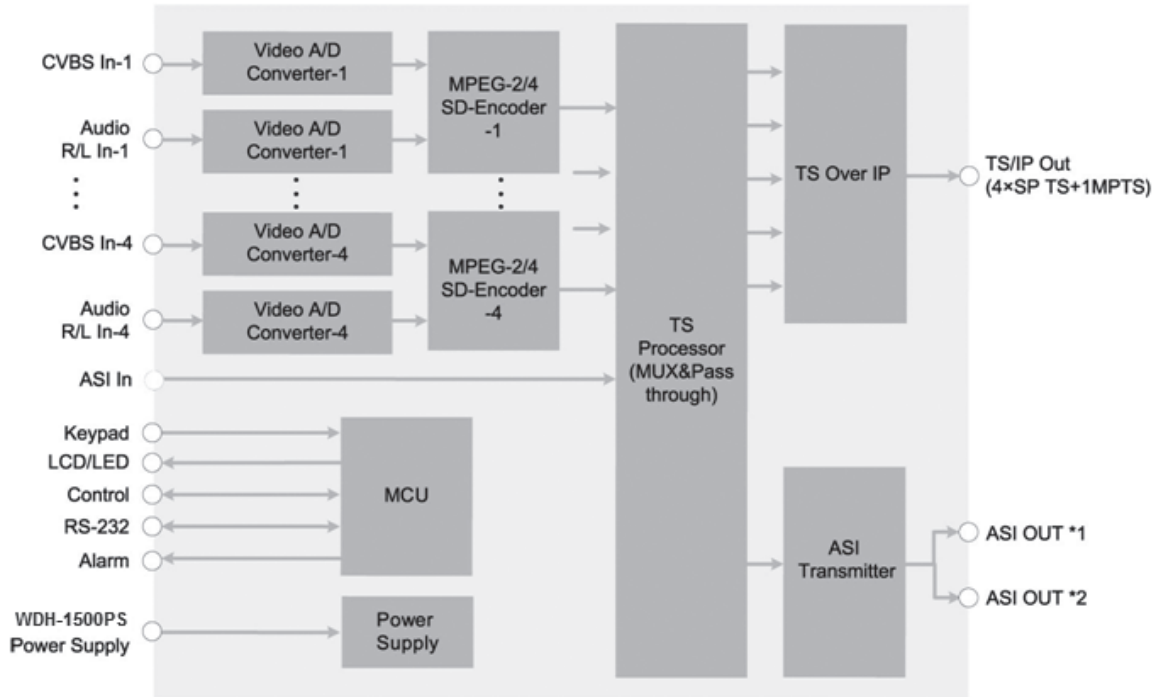
DVB-ASI Input	
Input Interface	BNC Female, 75Ω
Maximum Bit Rate	100 Mb/s
Data Type	Byte
Packet Length	188/204 Bytes
Signal Level	200~880mVp-p
DVB-ASI Output	
Input Interface	BNC Female, 75Ω
Effective Bit Rate	120Mb/s
Data Type	Byte
Packet Length	188/204 Bytes
Signal Level	800±80mV
TS/IP Gigabit Ethernet (note: see Model List)	
Standard	IEEE 802.3, 10/100/1000 Base-T
Maximum Effective Bit Rate	80Mb/s (note: Full Duplex mode) , 200Mb/s (note: Multiple Output mode)
Encapsulation	SPTS or MPTS
Protocol	UDP, RTP, ICMP, ARP, IGMPv2
Rear Panel options	
SDI In	4xBNC Female, 75Ω (WDH-1551EC-S or WDH-1550EC-S, see Model List)
ASI In	1xBNC Female, 75Ω
CVBS In & Analog Audio In	2xD-Sub15 (with D-Sub 15 to BNC female adapter cabling, total 4 sets of inputs, see Model List)
ASI Out	2xBNC Female, 75Ω(1 Backup)
Front Panel	
Control	1xRJ-45, 10/100 Base-T
TS/IP	1xRJ-45, 10/100/1000 Base-T
LED	1xPower, 4x Encoder Status, 1x ASI/IP Status
IP Reset	Press for 5 second or more to return the default IP address of control port
Reset	Local reset
Others	
Power	DC 3.3V/5V/12V, from WDH-1500 (8-slot) or WDH-1500 (2-slot)
Operating Temperature	0~40°C
Storage Temperature	-10~60°C
Operating Humidity	10~90% (Non-condensed)

## Block Diagram

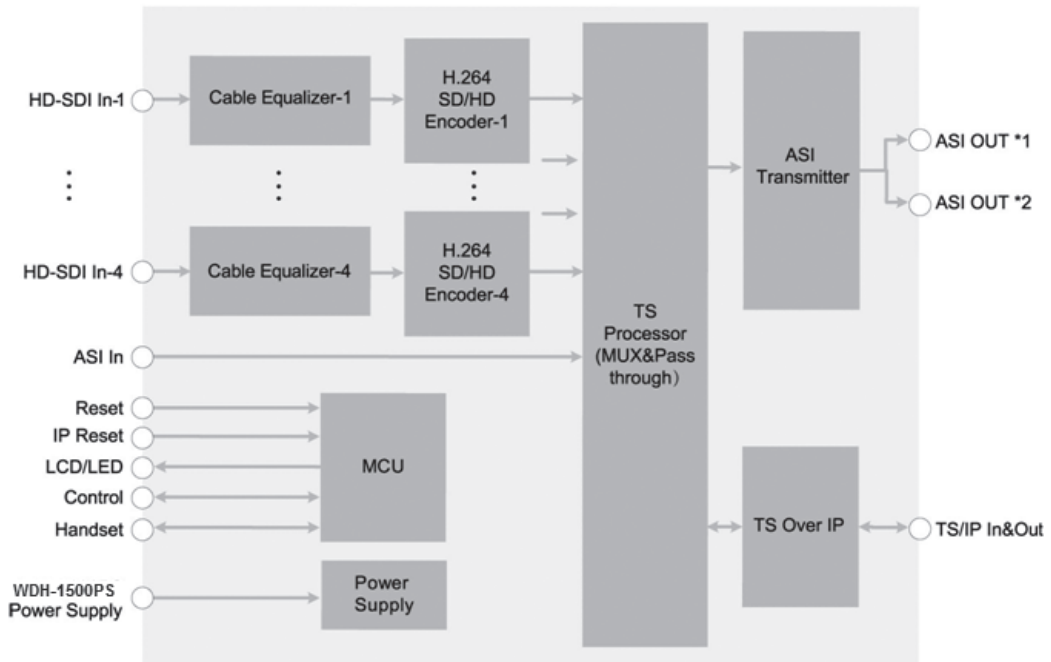
WDH-1551EC/1550EC-C Encoder Functional Block Diagram (Full Duplex)



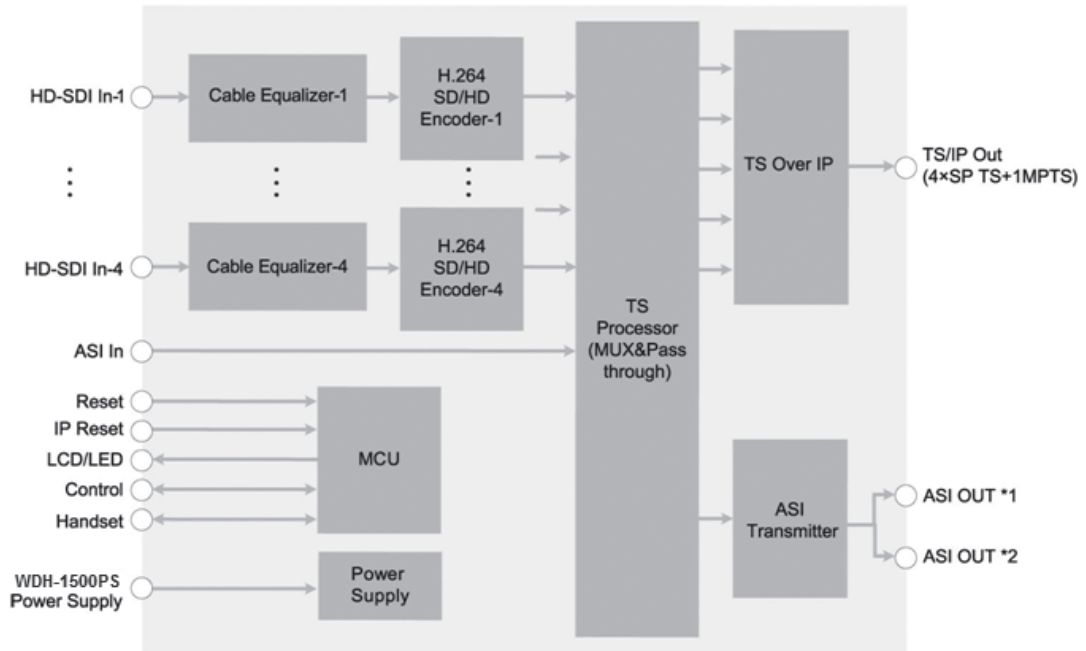
WDH-1551EC/1550EC-C Encoder Functional Block Diagram (Multi Channel)



WDH-1551EC/1550EC-S Encoder Functional Block Diagram (Full Duplex)



WDH-1551EC/1550EC-S Encoder Functional Block Diagram (Multi Channel)



## Order Information

Interface / Model		WDH-1551EC-S	WDH-1550EC-S	WDH-1551EC-H	WDH-1550EC-H	WDH-1551EC-C	WDH-1550EC-C
Input	HD/SD SDI with Embedded Audio	x4	x4				
	HDMI with Embedded Audio			x4	x4		
	CVBS & Analog Audio					x4	x4
TS Input	ASI	•	•	•	•	•	•
	TS/IP(GbE)	•	•	•	•	•	•
TS Output	ASI (1+1)	•	•	•	•	•	•
	TS/IP(GbE)	•	•	•	•	•	•
Audio AAC-LC/HE-AAC		•		•		•	