

Product Review

HDE-4S-QAM

Input: 4xHD-SDI & 4xComponent

Output: 4xQAM

MODEL
HDE-4S-QAM

STOCK
6374

Rev:120514-02

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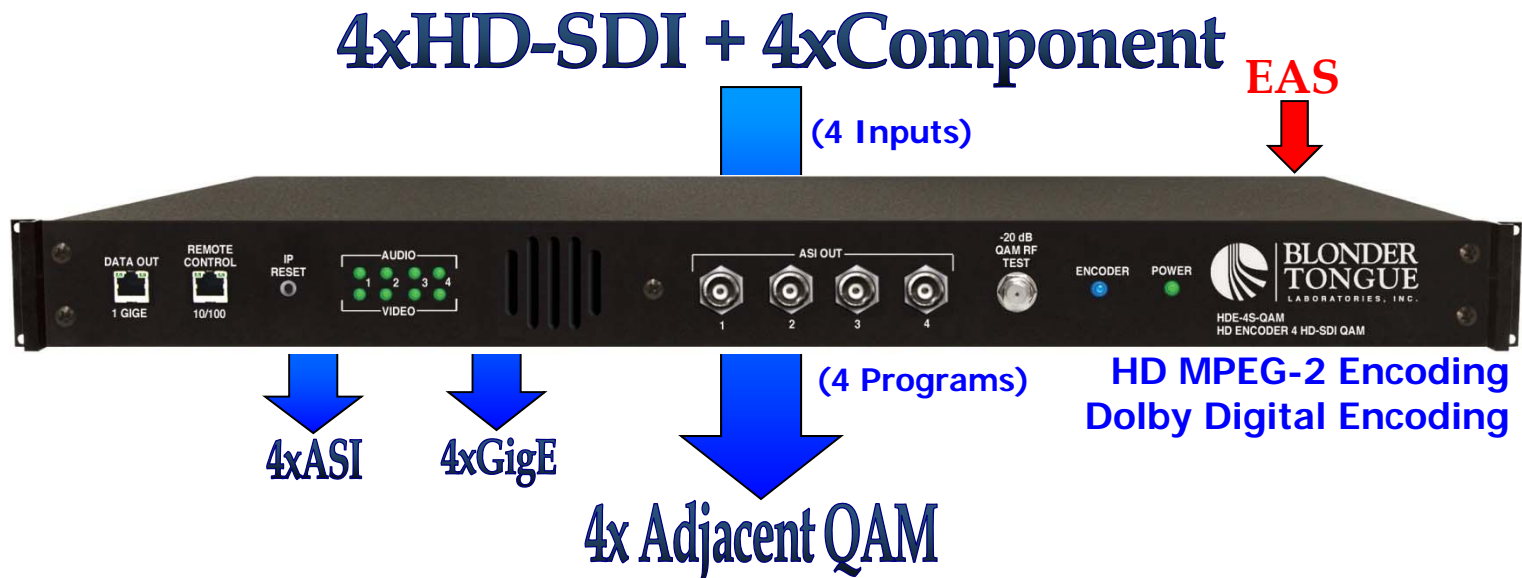
Description

HDE-4S-QAM (MPEG-2 HD Encoder – 4xHD-SDI & 4xComponent-to-4xQAM) accepts up to four (4) high-definition (HD) programs from any of the following inputs:

- 4xHD-SDI, and
- 4xComponent.

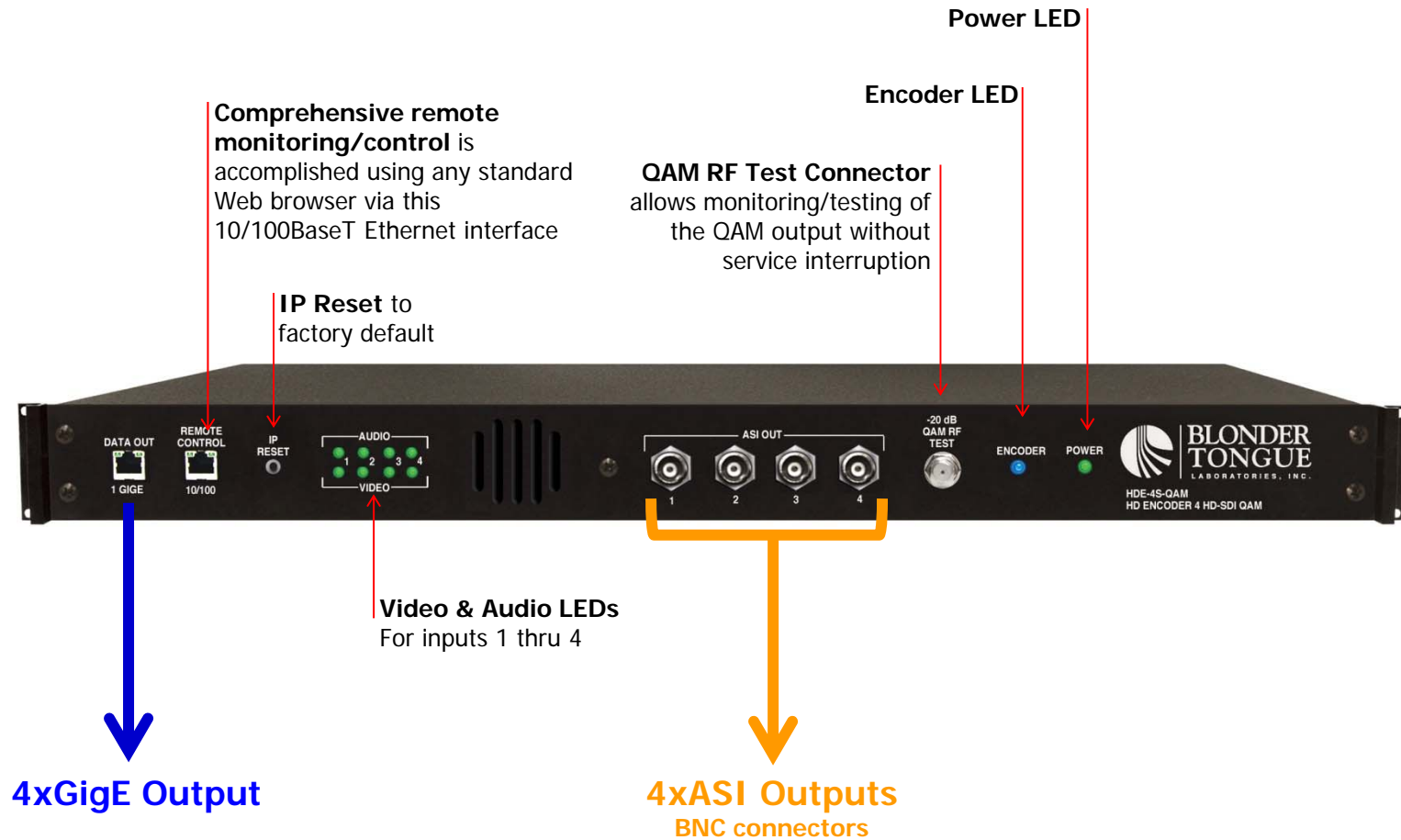
MPEG-2 encoded outputs are available in the following formats simultaneously:

- 4xQAM,
- 1xGigE (1000Base-T Ethernet), and
- 4xASI.



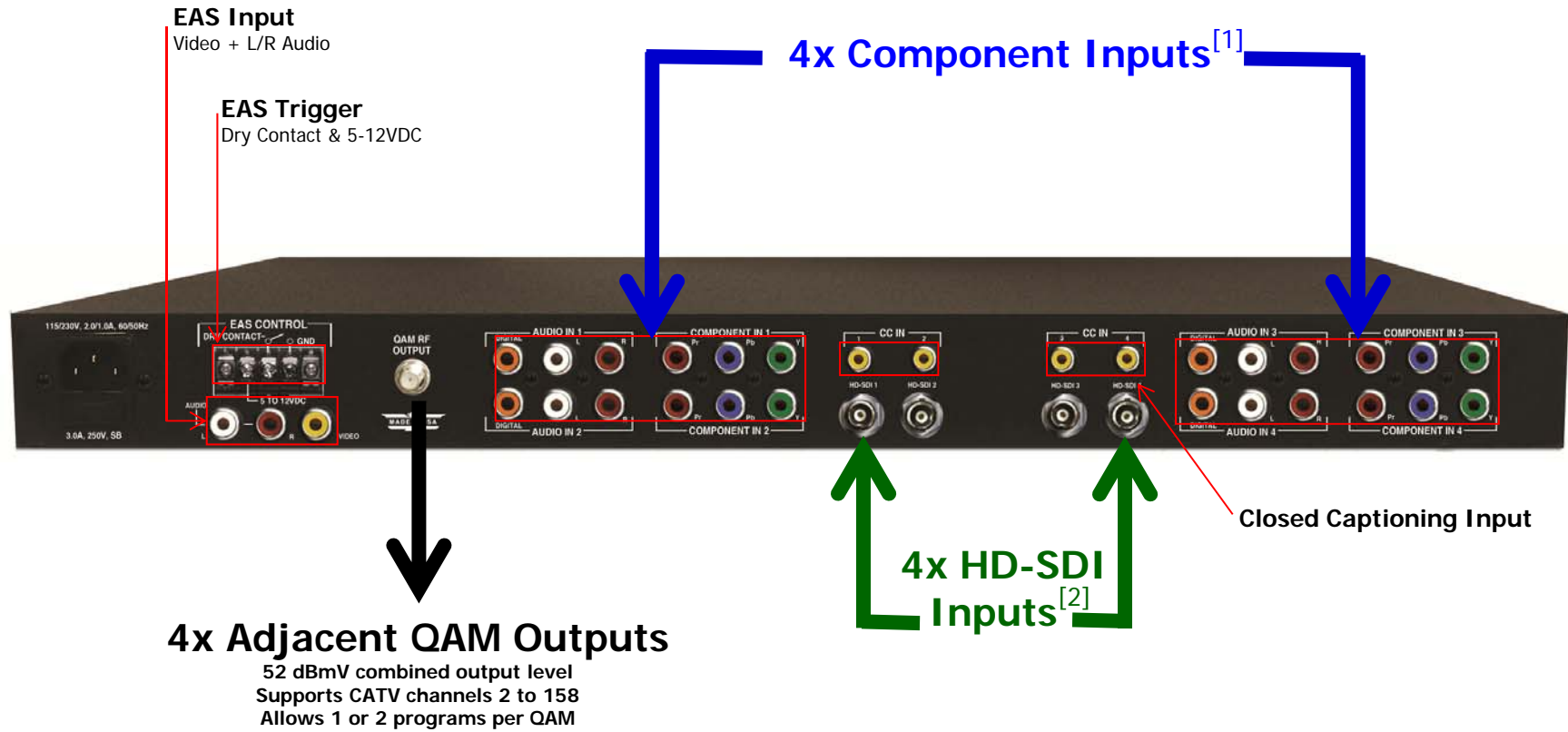


Front Panel





Rear Panel



[1] The encoder accepts both analog and digital audio inputs. If both inputs are present, the encoder will process the analog as the primary audio source - the digital will become the secondary audio source.

[2] The encoder accepts analog NTSC Closed Captioning (EIA-608, also known as Line 21) from a Composite source, digitizes and then inserts it in the MPEG-2 encoded Transport Stream of the HD-SDI input. The encoder also supports EIA-708 if Closed Captioning is embedded in the HD-SDI input.



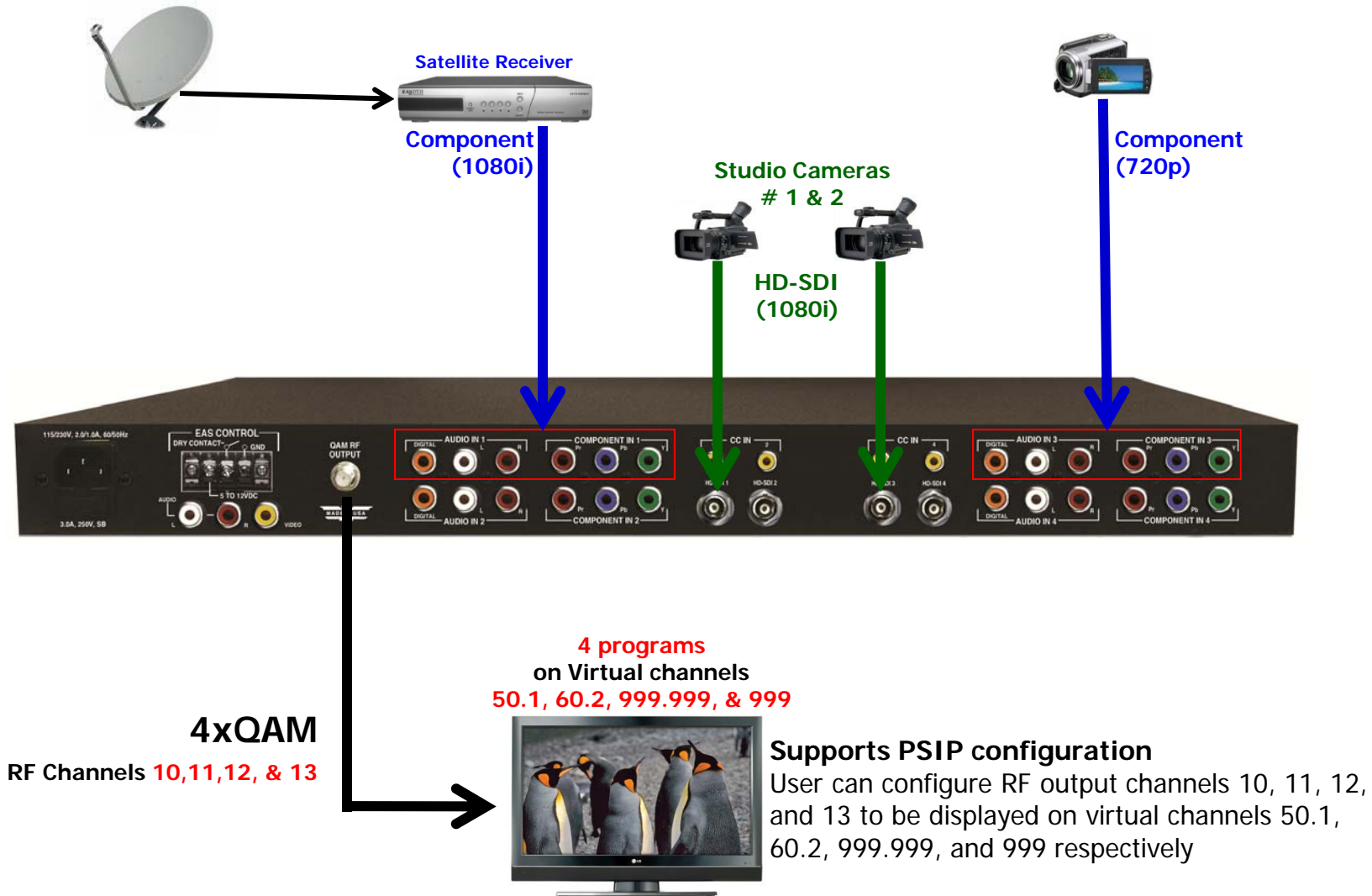
Features



- Accepts up to four (4) programs from any of the following inputs: 4xHD-SDI (unencrypted), and 4xComponent
- Simultaneously delivers the following outputs: 4xQAM, 1xGigE, and 4xASI
- Multiplexes up to four (4) input programs in any of the following output combinations:
 - i. 1:1 (1 program per 4xQAM channels)
 - ii. 2:1 (2 programs per 2xQAM channels, not exceeding 38.8 Mbps)
- Each of the four (4) QAM channels can (i) contain 1 or 2 programs, and (ii) be turned on/off individually
- Provides +52dBmV QAM output level for four (4) combined channels (+60dBmV for 1 QAM)
- Provides comprehensive GUI-based monitoring and control via standard Web browsers
- Supports Closed Captioning EIA-608 and EIA 708
- Equipped with EAS interface (Analog Video + L/R Audio)
- Supports Real-time Dolby Digital (AC-3) audio encoding
- Supports user-defined PSIP configuration

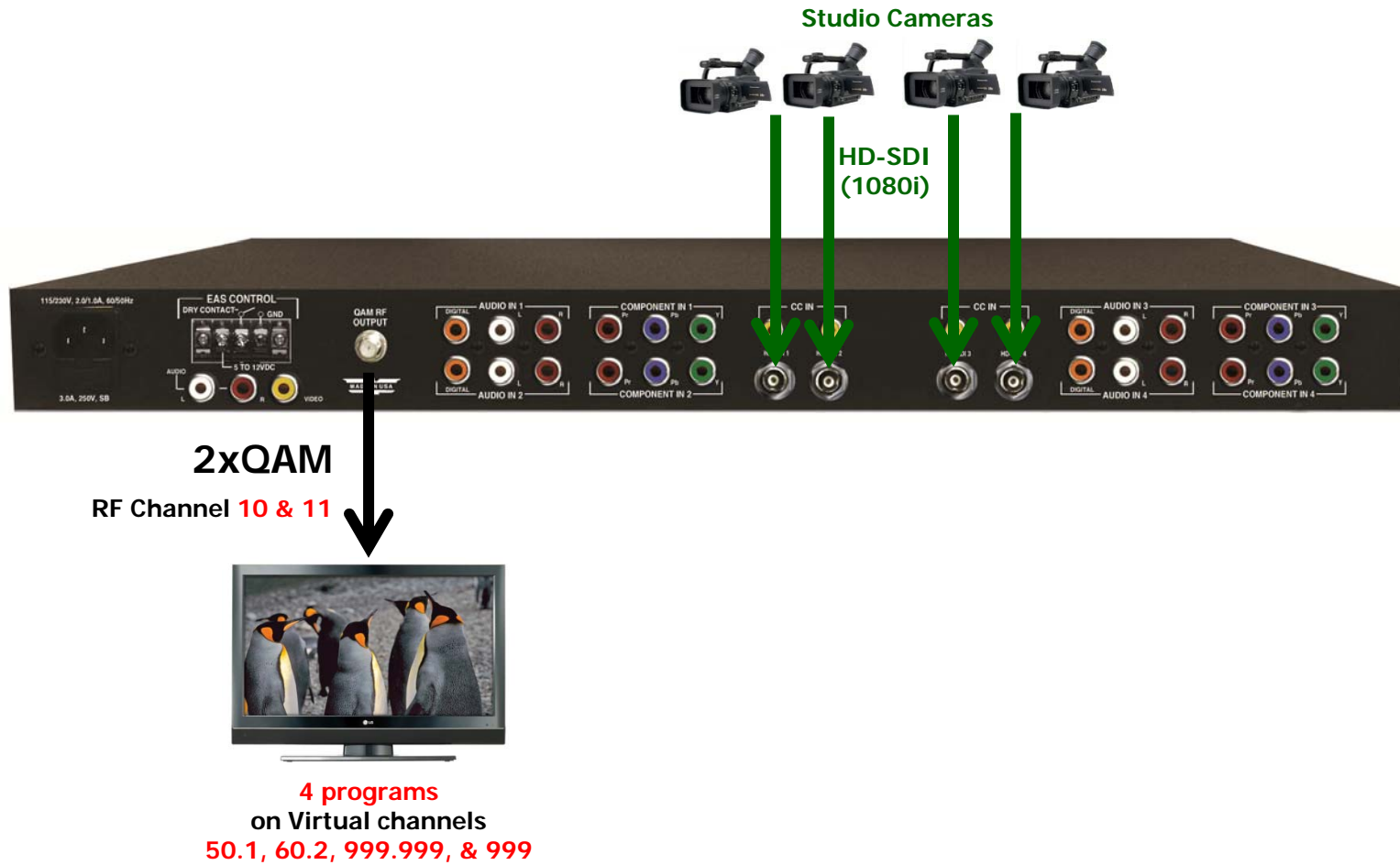


Typical Application (2xHD-SDI & 2xComponent)





Typical Application (4xHD-SDI)





Monitoring & Control - Main > Status

The read-only "Main > Status" screen displays information about (i) the construction of each of the four (4) Transport Streams (TS) and (ii) the output mode of each.

HDE-4S-QAM									
ESN: yyyyyyyyyyyyyyyy		Temperature: 92.2°F		Uptime: 0d 0h 0m 22s					
Headend Name:		Location:							
Main	Network	Management	Time	Error Log	Logout				
Status	Program	Video	Audio	TS Map	TS Config	IP	QAM	Output	Refresh
1 TS				2 Output					
TS Mapping			Bitrates	IP			QAM	ASI	
TS1			32.4 / 38.8	IP1 (UDP://192.168.253.1:50000)			Ch. 30	ASI OUT 1	
P1	48 (1) (WCBS3.1) (3-1)	16.2							
	49 V: HD-SDI 1	16.0							
	52 A: HD-SDI 1	0.2							
P3	64 (2) (WCBS3.2) (3-2)	16.2							
	65 V: HD-SDI 3	16.0							
	68 A: HD-SDI 3	0.2							
TS2			0.0 / 38.8	None			None	None	
TS3			32.4 / 38.8	IP2 (UDP://192.168.253.1:50001)			Ch. 31	ASI OUT 2	
P1	48 (1) (WABC4.1) (4-1)	16.2							
	49 V: HD-SDI 1	16.0							
	52 A: HD-SDI 1	0.2							
P3	64 (2) (WABC4.2) (4-2)	16.2							
	65 V: HD-SDI 3	16.0							
	68 A: HD-SDI 3	0.2							
TS4			0.0 / 38.8	None			None	None	

1 Indicates the information about the four (4) output transport streams. Under each transport stream (ex: TS1), displays the programs present in the transport stream and the corresponding content and bitrate.

2 Indicates the information about the three (3) output formats i.e. IP, QAM, and ASI.

For IP, displays the information about encapsulation used (UDP or RTP), IP Address (Uni- or Multi-cast), & port number.

For QAM, displays the QAM RF Channel number the output is assigned to.

For ASI, displays the physical ASI port number the output is assigned to.



Monitoring & Control - Main > Program

The "Main > Program" screen allows the user to select the video and audio source for each input program. The encoder allows creation of a transport stream with audio and video from different sources – for example program 2 shown below consists of video from component input # 1 and audio from HD-SDI #3.

HDE-4S-QAM

ESN: yyyyyyyyyyyyyyyy Temperature: 92.2°F Uptime: 0d 0h 0m 22s
Headend Name: Location:

Main Network Management Time Error Log Logout

Status	Program	Video	Audio	TS Map	TS Config	IP	QAM	Output	Refresh
	Video Source	Audio Source	Video Resolution						
P1	HD-SDI 1	HD-SDI 1	1080i				16.0Mbps		192kbps
P2	Comp. IN 1	HD-SDI 3	720p				16.0Mbps		192kbps
P3	HD-SDI 3	HD-SDI 3	1080i				16.0Mbps		192kbps
P4	HD-SDI 4	HD-SDI 4	1080i				16.0Mbps		192kbps



Monitoring & Control - Main > Video

The "Main > Video" screen allows the user to select the video parameters for each input program.

HDE-4S-QAM

ESN: yyyyyyyyyyyyyyyy Temperature: 92.2°F Uptime: 0d 0h 0m 34s
Headend Name: Location:

Main Network Management Time Error Log Logout

Status	Program	Video	Audio	TS Map	TS Config	IP	QAM	Output	Refresh
		P1 (HD-SDI 1)			P2 (Comp. 1)				
		Bitrate	16.0	Mbps			Bitrate	16.0	Mbps
		Closed Caption	<input checked="" type="radio"/> Enabled <input type="radio"/> Disabled				Closed Caption	<input checked="" type="radio"/> Enabled <input type="radio"/> Disabled	
		Video Filter Level	Disabled ▾				Video Filter Level	Disabled ▾	
		Video Coding Mode	Field ▾				Video Coding Mode	Field ▾	
		GOP Size	15				GOP Size	15	
		P3 (HD-SDI 3)			P4 (HD-SDI 4)				
		Bitrate	16.0	Mbps			Bitrate	16.0	Mbps
		Closed Caption	<input checked="" type="radio"/> Enabled <input type="radio"/> Disabled				Closed Caption	<input checked="" type="radio"/> Enabled <input type="radio"/> Disabled	
		Video Filter Level	Disabled ▾				Video Filter Level	Disabled ▾	
		Video Coding Mode	Field ▾				Video Coding Mode	Field ▾	
		GOP Size	15				GOP Size	15	



Monitoring & Control - Main > TS Map

The "Main > TS Map" screen allows the user to construct each of the four (4) Transport Streams.

HDE-4S-QAM

ESN: yyyyyyyyyyyyyyyy Temperature: 92.2°F Uptime: 0d 0h 0m 22s
 Headend Name: Location:

Main Network Management Time Error Log Logout

Status	Program	Video	Audio	TS Map	TS Config	IP	QAM	Output	Refresh
1 TS: 1 ● 2 ● 3 ● 4 ●				3 Output		Bitrates			
Inputs				Bitrates		TS1 - QAM / IP / ASI i			
<input type="checkbox"/>	P1								32.4
	V: HD-SDI 1							ii 48 (1) (WCBS3.1) (3-1)	16.2
	A: HD-SDI 1							49 V: HD-SDI 1	16.0
								52 A: HD-SDI 1	0.2
<input type="checkbox"/>	P2							P3 iii 64 (2) (WCBS3.2) (3-2)	16.2
	V: Comp. 1							65 V: HD-SDI 3	16.0
	A: Audio In 1							68 A: HD-SDI 3	0.2
<input type="checkbox"/>	P3							TS2 - None	0.0
	V: HD-SDI 3							TS3 - QAM / IP / ASI	32.4
	A: HD-SDI 3							P1 48 (1) (WABC4.1) (4-1)	16.2
<input type="checkbox"/>	P4							49 V: HD-SDI 1	16.0
	V: HD-SDI 4							52 A: HD-SDI 1	0.2
	A: HD-SDI 4							P3 64 (2) (WABC4.2) (4-2)	16.2
								65 V: HD-SDI 3	16.0
								68 A: HD-SDI 3	0.2
								TS4 - None	0.0

Add -> Save <- Remove

- 1 Allows user to select TS that is to be constructed.
- 2 Allows user to assign any of the available input programs to the TS.
- 3 Displays the real-time construction of each TS. For example, TS1 shown here is:
 - (i) Delivered in QAM, IP, and ASI output modes
 - (ii) Contains input programs P1 and P3
 - (iii) Program P1 has the following characteristics:
 - PMT=48
 - Program No.= 1
 - Ch. name=WCBS3.1
 - B'cast ch.=3.1
 - Video PID No.=49
 - Audio PID No.=52



Monitoring & Control - Main > TS Config

The "Main > TS Config" screen allows the user to create a Virtual channel table (VCT) for each output TS.

HDE-4S-QAM

ESN: yyyyyyyyyyyyyyyy Temperature: 92.2°F Uptime: 0d 0h 0m 22s
Headend Name: Location:

Main Network Management Time Error_Log Logout

Status Program Video Audio TS_Map TS_Config IP QAM Output Refresh

1 Multiplexed MPTS Output Configuration

TS ID	TS Bitrate	Modulation Mode	Out of Band	
TS1	1	38.79Mbps	Reserved	Disabled
TS2	1	38.79Mbps	Reserved	Disabled
TS3	1	38.79Mbps	Reserved	Disabled
TS4	1	38.79Mbps	Reserved	Disabled

2 Output Mapping

Input	PID	Program Number	Short Name	Major Channel	Minor Channel
TS1 - QAM / IP / ASI					
P1	48	1	WCBS3.1	3	1
V: HD-SDI 1	49				
A: HD-SDI 1	52				
P3	64	2	WCBS3.2	3	2
V: HD-SDI 3	65				
A: HD-SDI 3	68				
TS2 - None					
TS3 - QAM / IP / ASI					
P1	48	1	WABC4.1	4	1
V: HD-SDI 1	49				
A: HD-SDI 1	52				
P3	64	2	WABC4.2	4	2
V: HD-SDI 3	65				
A: HD-SDI 3	68				
TS4 - None					

Save

- 1 Allows user to edit the following information about each of the output TS:
Transport Stream ID number
Transport Stream's bitrate
Modulation Mode (QAM 256 /64 ; 16/8VSB)
- 2 Displays the input programs assigned to each TS, along with their PID numbers, program number, short name, and major-minor channel number to create a VCT.



Monitoring & Control - Main > IP

The "Main > IP" screen allows the user to assign the Destination IP address for each of the four (4) TS.

HDE-4S-QAM

ESN: yyyyyyyyyyyyyyyy Temperature: 92.2°F Uptime: 0d 0h 0m 22s
Headend Name: Location:

Main Network Management Time Error Log Logout

Status	Program	Video	Audio	TS Map	TS Config	IP	QAM	Output	Refresh
IP Output Config									
	Destination IP	Encapsulation	Destination Port	Source Port	Time to Live	Stuffing			
IP1	192.168.253.1	UDP	50000	50000	128	Disable			
IP2	192.168.253.1	UDP	50002	50002	128	Disable			
IP3	192.168.253.1	UDP	50001	50001	128	Disable			
IP4	192.168.253.1	UDP	50003	50003	128	Disable			

Save

- 1 Allows user to assign a uni- or multi-cast IP address for the IP output.
- 2 Allows user to select the UDP or RTP mode for the IP output and assign destination and source port numbers.
- 3 Allows user to assign an upper bound on the time that an IP packet can exist in an IP network to prevent an undeliverable packet from circulating on the network perpetually. The range is 1 to 255.
- 4 When enabled, adds null packets to ensure the TS is maintained at a constant bitrate.



Monitoring & Control - Main > QAM

The "Main > QAM" screen allows the user to assign the RF QAM characteristics for each of the four (4) TS.

HDE-4S-QAM

ESN: yyyyyyyyyyyyyyyy Temperature: 92.2°F Uptime: 0d 0h 0m 22s
Headend Name: Location:

Main Network Management Time Error Log Logout

Status	Program	Video	Audio	TS Map	TS Config	IP	QAM	Output	Refresh
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QAM Module					
Output Channel/Frequency	1	30 / 261MHz	31 / 267MHz	32 / 273MHz	33 / 279MHz
Output Control	2	On	On	On	On
CW Control	<input type="checkbox"/> Enable CW for QAM Module				
Final Output Level	35 dBmV				
Output QAM Mode	3	256B			
Output QAM Map	STD				
Output QAM Data Rate	5.360500 Mbaud				
Output QAM Interleaver	128-1				
Output QAM Alpha	12%				
QAM Lock State	Lock				

- 1 Allows user to select the RF QAM channel number/ frequency.
- 2 Allows user to turn each channel on/off individually.
- 3 Allows user to select the output level, modulation mode (QAM 64, 256, ...) , and type (Standard, HRC, IRC).



Monitoring & Control - Main > Output

The "Main > Output" screen allows the user to assign each of the four (4) TS to any of the three output formats.

HDE-4S-QAM

ESN: yyyyyyyyyyyyyyyy Temperature: 92.2°F Uptime: 0d 0h 0m 22s
Headend Name: Location:

MainNetworkManagementTimeError LogLogout

Status	Program	Video	Audio	TS Map	TS Config	IP	QAM	Output	Refresh	
① TS				Output						
TS Mapping				Bitrates		IP		QAM	ASI	
TS1				32.4 / 38.8						
P1	48 (1) (WCBS3.1) (3-1)		16.2	②		IP1 (UDP://192.168.253.1:50000) ▾		Ch. 30 ▾ ASI OUT 1 ▾		
	49 V: HD-SDI 1		16.0							
	52 A: HD-SDI 1		0.2							
P3	64 (2) (WCBS3.2) (3-2)		16.2							
	65 V: HD-SDI 3		16.0							
	68 A: HD-SDI 3		0.2							
TS2				0.0 / 38.8		None ▾		None ▾ None ▾		
TS3				32.4 / 38.8						
P1	48 (1) (WABC4.1) (4-1)		16.2			IP2 (UDP://192.168.253.1:50001) ▾		Ch. 31 ▾ ASI OUT 2 ▾		
	49 V: HD-SDI 1		16.0							
	52 A: HD-SDI 1		0.2							
P3	64 (2) (WABC4.2) (4-2)		16.2							
	65 V: HD-SDI 3		16.0							
	68 A: HD-SDI 3		0.2							
TS4				0.0 / 38.8		None ▾		None ▾ None ▾		

① Indicates the construction of each TS.

② Allows the user to assign each TS to a desired output format. Shown here for example are:
TS1 will be delivered in IP (UDP://192.168.253.1:50000), QAM (Ch.30) and ASI (ASI BNC connector 1) formats, TS2 has no content, etc...



Ordering & Contact Information

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