EN-100 10-bit / 1080P Multi-CODEC Encoder / Modulator

Quick Start Guide

Thank you for your purchase of the Adtec EN-100 Encoder/Modulator. This product is sold with optional modulator hardware packages. Configurations and indicators relevant to those add-on package are noted here. If you purchased this product without a modulator, please disreguard settings noted with an asterisks.

Quick View Status

For information on the core systems of the encoder, use the down arrorw on the front panel to scroll through these quick view menus.

Encoder Status TMR Encryption

```
ENCODING: 20.000M                CAS:BISS_1
SVC:  00001     "Serv. Name"     Serv. Provider
```

Service ID Service Name Service Provider

Input: Resolution Frame Rate Source Mode

```
I /RES: 1920x1080  25i   INP: SDI   MODE: AUTO
O/RES: 1920x1080  25i   B/T/ID:  OFF/OFF/OFF
```

Output: Resolution Frame Rate Bars/Tones/ID Status

Video PID CODEC Chroma Bit Depth

```
VID: 481    COD: H.264   CHR: 422   BITD:  10
VRT: 16989000b/s   ENT: CABAC   A/F: ON
```

Video Bit Rate Entropy Coding Auto Fill

Audio 1 - 8 Type Bitrate

```
1:MU 384k 3:MU 384k  5:MU 384k  7:MU 384k
2:MU 384k 4:MU 384k  6:MU 384k  8:MU 384k
```

Audio PIDS 1 - 8

```
Audio  1:11300  3:11400  5:11500  7:11600
PIDS   2:12300  4:12400  6:12500  8:12600
```

TSoIP 1 - 4 RTP FEC Status Connector

```
1: SEND ON  BUR  GIGE  3: SEND  OFF  OFF  GIGE
2: SEND ON  OFF  GIGE  4: OFF   OFF  OFF  GIGE
```

ASI Remux Status Programs on Input

```
REMUX: ACTIVE          PROGRAMS: 7
INPUT: 038.963Mb/s     RESERVED: 040Mb/s
```

Input Data Reserved Bandwith

*Modulator Status Mod FEC Power Roll Off

```
TX: Enable 32APSK_9/10   Pwr: -30dB   RO: 25%
Freq: 1291MHz DVB-S2  Sym: 15.00Ms  Pilot: ON
```

Frequency Mode Symbol Rate Pilot

LED Status

Video
- On - Video is detected
- Blinking - No video is detected

Encode
- Off - Device is not encoding
- On - Device is encoding

AVC
- Off - MPEG 2 is selected for encode
- On - MPEG 4 (H.264) is selected for encode

4:2:2
- Off - Encoding chroma type 4:2:0
- On - Encoding chroma type 4:2:2

10-bit
- Off - Encoding depth of 8-bit
- On - Encoding depth of 10-bit

IP Out
- Off - IP Egress is idle
- On - IP Egress is active

***RF Out**
- Off - Modulator is not transmitting
- On - Modulator is transmitting
- Blinking - Modulator is in test mode

OTT
- Off - Feature not yet available.
- On - Feature not yet available.

Alarm
- Off - No system alarms
- On - System alarm

BISS
- Off - Encryption config is OFF
- On - Encryption config is ON

A1 - A8
- Off - Not encoding
- On - Encoding or Passthru Audio
- Blinking - Audio is active but there is no source

Link
- Off - No network detected
- On - Connection active

Busy
- Off - No network activity
- On - Network traffic present

Front Panel Menus:

(MODE) **Use Mode Button to move through top layer menus.**

(▲) **Use arrows for navigation in submenus.**

Use select to enter into edit (SELECT) mode and (ENTER) enter to save selection.

Special Keys:

(F2) **Use the F2 button as a decimal.**

Services	*RF Tx	IP Tx	Video	Audio	PIDS	VBI	Profile	CAS	System
TS Mux Rate	Transmit	<< 1 - 4 >>	<< ENC Select >>	<< 1 - 2 >>	Transport ID	Source	Select	Mode	Login
ABR Mode	Type	Mode	Input	Surround Mode	PMT PID	Closed Cap.	Save	Clear SW	Duration
Program Num	Mode	IP Tx Mode	SDI Mode	Surround Anchor	PCR PID		Delete	Encrypted SW	Network Menu
Service Name	Local Oscillator	Tx IP Address	CVBS Input Mode	<< 1 - 8 >>	Video PID			User ID 1	Time Menu
Service Provider	Uplink Freq	Tx Port	CODEC	Input	Audio 1 PID			User ID 2	NTP Menu
Tables	Frequency(MHz)	Tx GW Address	Entropy Coding	Mode	Audio 2 PID				Alarm
ASI Rx Mode	Power(dBm)	DVB per IP	Chroma	Type	Audio 3 PID				SNMP Menu
ASI Mode	Spectrum Invrsn	RTP	Deblock Filter	Rate	Audio 4 PID				COM2
ASI Reserve	Fec Frame	FEC Mode	Video Field Cod.	Level	Audio 5 PID				Feature Menu
ASI Reserve	Roll Off	FEC L	Video Rate	Analog Level	Audio 6 PID				Name
Carrier ID Menu	Pilot	FEC D	Autofill	Sync	Audio 7 PID				Firmware
Bars,Tones,ID	Rate Priority	Type of Service	Latency	MPEG Format	Audio 8 PID				Backlight Dim
	Symbol Rate	TTL	Latency Trim	IFB	Teletext PID				
	Interface Rate	Tx Connector	Fault Mode	SDI Pair	AMOL PID				
	Carrier Mode		Fault Resolution	SDI Clock Source	VITC Mode				
	10 MHz Clock		Aspect Ratio	ECC Words	VITC PID				
	Clock Comb.		AFD	Audio Level B	Splice Mode				
			GOP Type		Splice PID				
			GOP Structure						
			GOP Size						
			3-D Sync Mode						

Modulation Indicators:

- No modulator
- IF/LB/10M modulator

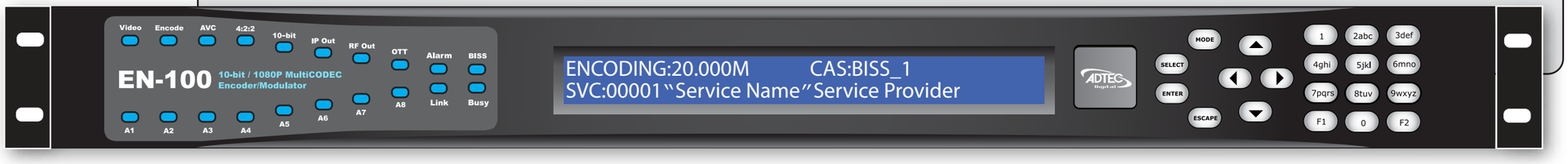
Reset:
Should you need to reset your device, you can do so via the front panel by pressing the MODE, ESCAPE and RIGHT ARROW keys simultaneously.

Units ship with the front panel logged in by default. If you become logged out and are prompted for a password, use the following key sequence for access.

Press <Select> when panel displays 'User Login -- logged out'
Press <Up arrow>
Press <Select>
Press <Enter>
Press <Right arrow>
Press <Enter>

There are 2 different encoder modules available for the EN-100 and the unit can be ordered with either:

VE1 - 1080p AVC 8-bit
VE2 - 1080i Multi-CODEC 10-bit



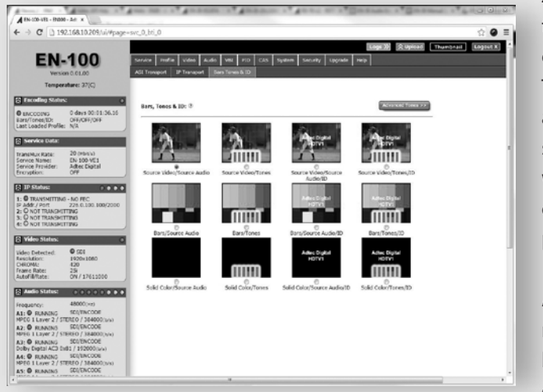
Getting Connected

To begin, you will need to connect to your EN-100 via ethernet directly, or by adding the EN-100 to your local area network.The default address for all Adtec devices is **192.168.10.48**.

To connect directly to the device, make sure that your computer and the device have IP addresses within the same IP class range (ex. 192.168.10.48 for the device and 192.168.10.49 for your computer). If you need to change the IP address of the device, this can be done via the front panel, System > Network menu. Using a CAT 5 crossover cable, connect one end to your computer and the other to the Ethernet port found on the processor section of the back panel. (Some computers can auto negotiate the connection and a crossover may not be necessary.)

To add the device to a LAN, connect a standard CAT 5 Ethernet cable to your network router and then to the Ethernet port on the back of the device. If your network is DHCP enabled and you prefer that over a static IP, you can turn on DHCP for the device via the front panel, System > Network menu.

Web-Based Control Application



Adtec Digital has adopted zero-configuration networking technology, streamlining the setup and configuration processes for our products. The use of this technology enables automatic discovery of Adtec devices and services on an IP network. Used in tandem with the web-based control and configuration applications we can now provide 1-click access to any device.

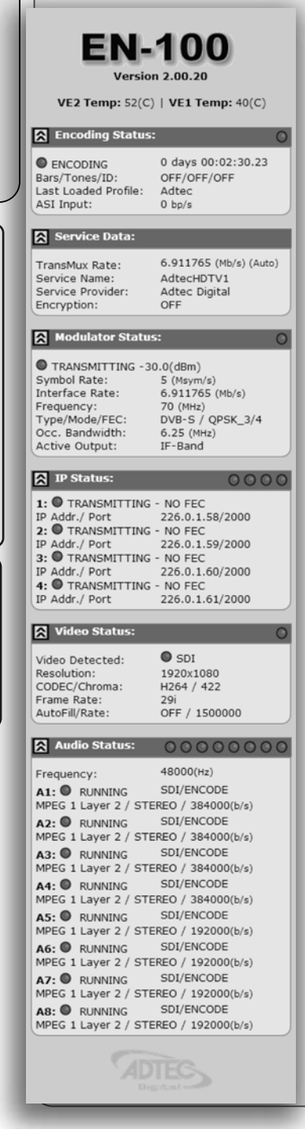
By using the built-in Bonjour© locater in Apple's© Safari© browser or the plug-ins readily available for IE© or Firefox© browsers, users can locate all of the Adtec devices on a network by referencing the serial number on the back of the device. Clicking on the unit in the Bonjour© list will re-route you to a login page. If you do not wish to use Bonjour, you can reach the device's web application by pointing your browser to the IP Address of the device. Ex. http://192.168.10.48/. You will be prompted for a username and password. The default username is 'adtec'. The default password is 'none'.

The left-hand panel of the application will report current status in real-time while the right panel tabs will allow you to configure your device.

Have questions? Each field or group of fields in our web-based application has a hint button associate with it. It contains information on use of the field or acceptable ranges.

Getting Started

Once your encoder is accessible via network, you can set it up for transmission. You will need to adjust the configurations using the front panel or web UI. As you make changes, you will see the status sections on the left hand side of the web UI adjust. These status sections report the majority of the critical information needed for monitoring during a transmission. Each of these status menus can be collapsed by clicking on the icon. This allows you to view only that information which is most critical for you, but keeps a LED indicator visible for all sections at all times for alarms.



Encoding Status: These values indicate the encoder's state and displays alarms when a video loss event is detected.

Service Data: These values indicate the service or program data being used in your transmission as well as the total TMR output.

*** Modulator Status:** Devices containing the optional modulator will display this status window indicating activity and critical uplink parameters.

IP Status: These values indicate the status of IP Egress including address, port and FEC parameters.

Video Status: The video status information is auto-detected per the input selected. Information such as resolution, chroma, framerate and video rate are included.

Audio Status: This section will display all audio status including bitrate, format and audio input selected.

Modulator Line-UP *

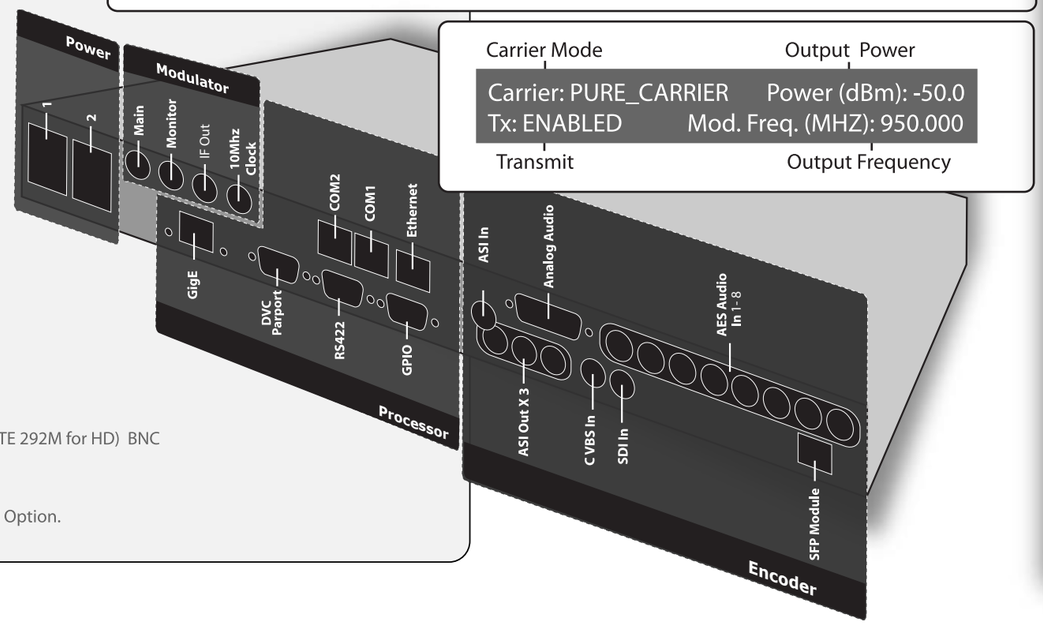
For access, press the F1 and F2 keys simultaneously. This feature enables the operator to quickly view and/or configure select modulator RF output parameters. The parameters available in this menu are;

Carrier Mode:
[PURE_CARRIER or MODULATED]
Use SELECT Button to toggle.

Transmit: [ENABLED or DISABLED]
Use ENTER Button to toggle.

Output Power: [in 0.5dB increments]
Press or hold UP or DOWN arrows to adjust.

Output Frequency: [in 1.0MHz increments]
Press or hold LEFT or RIGHT arrows to adjust.



Power

Power 1 & 2	Redundant AC Power, Standard 3 pin computer power plug (Auto range 70-240 VAC Input)

Modulator (optional)*

Main	**RF output, 50 Ohm BNC** *L-Band* Frequency range 950 MHz to 2.150 GHz, Power Level -35 to +5 dBm
Monitor	**RF output, 50 Ohm BNC** *L-Band* Fixed power level at -45 dBm
IF OUT	**RF output, 50 Ohm BNC** *IF* Frequency range 50 MHz to 180 MHz, Power Level -30 to +5 dBm
10MHz Clock	BNC 50 Ohm connector for external 10MHz reference input

Processor

GigE	TSoIP UDP/RTP/SMPTE2022 multicast or TCP transport egress port
COM2	API Serial Communication Interface
COM1	Serial Port Used for Troubleshooting (Terminal)
Ethernet	10/100 base T ethernet interface (Monitoring/Management)
DVC Parport	9-pin parallel I/O interface for control systems
RS422	Not Currently Supported
GPIO	Tally and Control Port

Encoder

ASI OUT	75 Ohm source ASI x3 per EN5000839. Up to 150 Mbps.
CVBS In	75 Ohm terminated Standard Definition Composite Video Input
SDI In	75 Ohm terminated Input, Video & Audio (SMPTE 259M for SD & SMPTE 292M for HD) BNC
AES Audio In 1-8	75 Ohm AES-3 per AES3-2003
Analog Audio In	Stereo Pairs 1 and 2 (600 Ohm Balanced)
* SFP Module	Single channel optical receiver module. SMPTE 297-2006 - Purchased Option.
ASI In	75 Ohm terminated ASI per DVB-ASI. Up to 100 Mbps