PEG PLUS Model
Public Educational & Governmental Access Encoder

QUICK SETUP GUIDE

General Description

The PEG PLUS is a High Definition (HD)/Standard Definition (SD) video encoder with IP output. The PEG encoder has two IP output two streams available in HD or SD in MPEG-2 and H.264 formats. The HD streams can be based on HD-SDI input and the SD streams can be based on Composite, SD-SDI, or HD-SDI input source resolution. For each output stream, UDP is encapsulated SPTS (single program transport stream). The PEG PLUS is controlled through a web page interface. The web page provides remote monitoring and updating capabilities and SNMP traps for status updates.

Features

• Encodes two HD or SD streams of the same content in MPEG-2 and H.264 formats
• GUI-based menu for local & remote configuration (Password Protected)
• Unicast or Multicast is defined by the IP address
• Field-upgradable firmware
• Supports PNG images upon loss of input video

PEG PLUS Operation

FRONT PANEL

1. **Ethernet Control:** 10/100 Ethernet wired connection for local and remote management
2. **IP Reset Button:** When pressed for >2 seconds, the IP address of the control port will enable to the default factory IP address (172.16.70.1, **Subnet Mask** 255.255.255.0) The login credentials will also be enabled to the default username **admin** and password **pass**.
   Note: The old IP address, login, and password will still be present in the encoder settings.
3. **Status LEDs:** Provides a status of tasks performed by the PEG encoder in real-time:
   1 **Power:** The LED is illuminated when the power is ON.
   2 **Input:** The LED is illuminated when input video is being received from the HD/SD SDI or Composite input.
   3 **Encoding:** The LED is illuminated when the internal encoder is operational.
   4 **Output:** The LED is illuminated when the copper or optical SFP is connected to a network.

REAR PANEL

5 **NTSC Composite Video/Audio In:** Analog video with Left and Right Audio.
6 **HD-SDI IN:** Digital video HD/SD SDI input source
7 **SFP Ethernet Output:** Optical or Copper SFP IP video and audio output
8 **5VDC Power Port:** Accepts five-volt power to the device

We recommend that you write the following information in the spaces provided below.

Purchase Location Name	
Purchase Location Telephone Number	
PEG-PLUS Serial Number	

Basic Start Up - Login Screen

First, connect the appropriate input and output video cables and plug in the PEG-PLUS power cable.

ETHERNET ACCESS:

Local or remote communication with the unit is only possible through a GUI-based menu via **Chrome** or **Firefox** web browser. Before you can communicate with the unit you must configure your computers Local Area Network connection to confirm with the PEG-PLUS **default IP** of **172.16.70.1**. To do so, follow these steps:

Connect an Ethernet cable from your computer to the Control 10/100 port of the PEG-PLUS.

1. The following steps explain how to do this for a computer with **Windows XP** operating software:

    a) On your computer, open the "Control Panel"
    b) Double-click on "Network Connections"
    c) Right-click on the "Local Area Connection", and then click on the "properties".
    d) A dialog box entitled "Local Area Connection Properties" will appear. In this box, double-click on the "Internet Protocol (TCP/IP)".
    e) A dialog box entitled "Internet Protocol (TCP/IP) Properties" will appear. Select the "Use the following IP address" option and enter the following addresses:

            IP address: 172.16.70.2
            Subnet mask: 255.255.255.0
            No need to enter a value for the **Default Gateway**.

    Click OK to close the dialog box. Now your computer is ready to communicate with the unit.

2. The following steps explain how to do this for a computer with **Windows 7** operating software:

    a) On your computer, open the "Control Panel"
    b) Click on "Network and Internet"
    c) Click on the "View network status and tasks"
    d) Click on "Change Adapter Settings" on left hand side of the window
    e) Right-click on the "Local Area Connection", and then click on the "Properties".
    f) A dialog box entitled "Local Area Connection Properties" will appear. In this box, double-click on the "Internet Protocol Version 4 (TCP/IPv4)".
    g) A dialog box entitled "Internet Protocol Version 4 (TCP/IPv4) Properties" will appear. Select the "Use the following IP address" option and enter the following addresses:

            IP address: 172.16.70.2
            Subnet mask: 255.255.255.0
            No need to enter a value for the **Default Gateway**.

    Click OK.

Open a **Chrome** or **Firefox** web browser on your computer and enter the following URL address (http://172.16.70.1). Once the PEG PLUS web server has been loaded from your browser, you should see the login dialog. Enter the username and password and click LOG IN. The default username is "**admin**" (in lower case letters) and the default password is "**pass**" (in lower case letters).

System Login

Username

Password

LOG IN

Status Tab

The status tab provides the following information (View only):

System Information

CPU Usage:	Total: 10%; Encoder: 4%
① → Serial Number:	
② → Hardware Version:	0
③ → Software Version:	1.0_20160822
④ → Unit Name:	
Unit Location:	
⑤ → Up-Time:	10:37:25.240000
System Time (UTC):	Thu Jan 1 10:37:25 1970

⑥ → **Input Status**

Status:	Ready
FW Version:	1.17
SDI Input:	Locked
SDI Format:	480x720i60.00Hz
Composite Input:	Unlocked
Active Video Source:	SDI: 480x720i60
Active Audio Source:	SDI

① The **serial number** indicates serial number of PEG PLUS encoder

② The **hardware version** indicates the hardware version of the PEG PLUS encoder

③ Indicates the **software version** of the unit

④ Indicates user-defined unit constants (**Name and Location**)

⑤ The **Up-Time** of the unit expressed in days, hours, minutes, and seconds.

To set system time you will need to set the IP address of your local DNS server by configuring DNS Mode to "manual" under the DNS settings in the System Configuration tab. The encoder will then resolve the standard NTP server pool DNS entry and sync the system time.

⑥ Input Status Box:

Video Lock: Indicates if the video is present and locked

Resolution: Indicates the resolution of the source video. The PEG encoder supports resolutions of:

480i (640x480/720x480 @ 30FPS)

720p (1280x720 @ 60FPS)

1080i (1920x1080 @ 30FPS)

Embedded Audio: Indicates if there is embedded audio on the stream

Encoder Tab

(1) Global Settings: Sets global settings that apply to both streams and the possible outputs

Source: SDI or Composite/Analog

If composite/analog source is selected, the GUI will display **Brightness**, **Contrast**, **Saturation**, and **Hue Shift** parameter settings.

Video Resolution: displays input source

Audio Synchronization: Audio video lip-sync adjustment used to adjust your audio to video synchronization. For example, you may need to delay or lag your audio if your video input is SDI and your audio source is analog.

Stream Enable: Stream combinations available.

Disable: Encoder is not streaming

Stream 1: Encoder is streaming HD or SD stream depending on the video input HD or SD source.

Stream 2: Encoder is streaming HD or SD stream depending on the video input HD or SD source.

Both: Encoder is streaming a HD and SD streams depending on your video input HD or SD source.

(2) Stream 1 Settings: The stream settings sets parameters for streaming HD or SD stream depending on the video input HD or SD source.

Source: SDI or Composite/Analog

Video Encoder Format: MPEG-4/H.264 only

Encoder Tab

SD Video Bitrate (Mbps): 1 to 4 incremented by 0.1

HD Video Bitrate (Mbps): 3.5 to 13 incremented by .01

Aspect Ratio: 16:9 or 4:3

Audio Encoder Format: Select MP2 for MPEG-1 Audio Layer 2, AC-3 for Dolby Digital (AC-3); AAC (Advanced Audio Coding)

Audio DialNorm: range from -1dB to -31dB

Audio Bitrate (kbps): 128, 192, 320, or 384

> NOTE: 320kbps is an option for audio bitrate in MP2 and AAC only

HD/SD Transport Stream Bitrate (Mbps): SD .625 to 25 and HD 4.125 to 25, incremented by .125

> NOTE: TS bitrate must be greater than 0.400 Mbps + audio bitrate + video bitrate

Stuffing Output: Enable or Disable, Enable will include transport stream null packet stuffing to produce a fixed-bitrate TS

Destination IP / Destination Port: User defined unicast or muliticast IP address and port number determined by downstream network connectivity device.

IP Stream TTL: 1 to 255, determined by application

(3) Stream 2 Settings: The stream settings sets parameters for streaming HD or SD stream depending on the video input HD or SD source.

Video Encoder Format: MPEG-2 or MPEG-4/H.264

Downscale to SD: Enable or Disable

SD Video Bitrate (Mbps): 2 to 8 in MPEG-2, and 1 to 4 in H.264, incremented by 0.1

HD Video Bitrate (Mbps): 8.5 to 19 in MPEG-2, incremented by 0.1

Aspect Ratio: 16:9 or 4:3

Audio Encoder Format: Select MP2 for MPEG-1 Audio Layer 2; AC-3 for Dolby Digital AC-3; AAC (Advanced Audio Coding)

Audio DialNorm: range from -1dB to -31dB

Audio Bitrate: 128, 192, 320, or 384 Kbps

> NOTE: 320kbps is an option for audio bitrate in MP2 and AAC only

HD/SD Transport Stream Bitrate (Mbps): SD .625 to 25 and HD 4.125 to 25, incremented by .125

> NOTE: TS bitrate must be greater than 0.400 Mbps + audio bitrate + video bitrate

Stuffing Output: Enable or Disable, Enable will include transport stream null packet stuffing to produce a fixed-bitrate TS

Destination IP / Destination Port: User defined unicast or muliticast IP address and port number determined by downstream network connectivity device.

IP Stream TTL: 1 to 255, determined by application

System Configuration Tab

The system configuration tab allows the user to set Ethernet and SNMP settings.

(1) SFP Video Network Settings: Mac Address, IP address, Subnet Mask, Default Gateway, and HTTP Server Enable

(1a) SFP Port HTTP Server Enable, " Enabled": This will allow management capability on the same SFP port (SFP port IP Address) as the streaming video.

(2) Control Port Ethernet Settings: Mac Address, IP address, Subnet Mask, and Default Gateway

(3) DNS Settings: DHCP or manual mode. Name servers convert domain names to IP addresses. Enter Primary, Secondary name servers and/or Search Domains in the space provided.

System Configuration Tab

1 SFP Video Network Settings

MAC Address	F0:3F:F8:FF:FF:1A
IP Address	172.16.80.1
Subnet Mask	255.255.255.0 /24
Default Gateway	0.0.0.0
IP Address	172.16.80.1
Subnet Mask	255.255.255.0
Default Gateway	0.0.0.0

1a HTTP Server Enable — Disable

Link Speed (copper only) — Auto

2 Control Port Ethernet Settings

Control Port MAC Address	F0:3F:F8:FF:FF:1B
IP Address	172.16.70.1
Subnet Mask	255.255.255.0 /24
Default Gateway	172.16.70.254

3 DNS Settings

DNS Mode	DHCP Provided
Primary Nameserver	
Secondary Nameserver	
Search Domain(s)	

- Multiple search domains must be space delimited, e.g. "local company.internal"

Nameserver	127.0.0.1

4 Unit Description

Unit Name	
Unit Location	

5 SNMP Settings

Trap Target IP	172.16.70.2
Trap Target Port	162
System Contact	

6 Web Settings

User Timeout	5 Minutes

Apply

4 **Unit Description:** Unit Name and User Location

5 **SNMP Settings:** Trap IP address, Trap Target Port, System Contract

6 **Web Settings:** User Timeout - 5 minutes to 30 minutes

Service

A Return Material Authorization (RMA) Number is required on ALL PRODUCT RETURNS (regardless of whether the product is being returned for repair or for credit). Product that is received at the factory without an RMA Number will be returned to the sender, unopened.

RMA Numbers must be used when returning product for credit or repair. Use of RMA Numbers will ensure efficient processing. When needing to return your product to R.L. Drake Holdings, LLC., please follow these simple steps listed below (in the order that they appear).

SERVICE REPAIRS ONLY

1. Contact R.L. Drake Holdings, LLC.'s Service Department in one of three ways:
   > Phone: 732-313-4256
   >
   > Email: drakerepair@rldrake.com
   >
   > Fax: 732-679-4022

2. Request from Drake Service a copy of the Product Return Authorization Form.

3. Complete the Product Return Authorization Form fully.

4. Return the completed Product Return Authorization Form to the Drake Service Department using one of the contact methods listed in Step 1.

5. After completing Steps 1 through 4, an RMA Number will be assigned to you.

6. Securely pack the product and mark the box with your RMA Number. If shipping multiple boxes, all boxes must be marked with the RMA Number. Place the RMA Number near the return address in **large, bold print** (approx. 2" in height).

CREDIT RETURNS ONLY

1. Contact R.L. Drake Holdings, LLC.'s Service Department in one of three ways:
   > Phone: 937-746-6990
   >
   > Email: servicehelp@rldrake.com
   >
   > Fax: 937-806-1510

2. Request from Drake Service a copy of the Product Return Authorization Form.

3. Complete the Product Return Authorization Form fully.

4. Return the completed Product Return Authorization Form to the Drake Service Department using one of the contact methods listed in Step 1.

5. After completing Steps 1 through 4, an RMA Number will be assigned to you.

6. Securely pack the product in its **original undamaged box** (returning the product without its original packaging in good, new condition may cause the incursion of additional fees). Pack this box within another shipping container or box. Mark the shipping box or container with your RMA Number. Place the RMA Number near the return address in **large, bold print** (approx. 2" in height).

Ship your "SERVICE REPAIR ONLY" return to:

R.L. Drake Holdings, LLC.
Attn: Product Service Returns
One Jake Brown Road
Old Bridge, NJ 08857

Ship your "CREDIT RETURNS ONLY" return to:

R.L. Drake Holdings, LLC.
Attn: Product Credit Returns
One Jake Brown Road
Old Bridge, NJ 08857

*NOTE: All Credit Returns are subject to a 15% Restock Fee

*NOTE: All shipments are to be PRE-PAID by the sender. NO COD's will be accepted.

IF YOU NEED TECHNICAL HELP

Call our Customer Service/Technical Support line at +1 (937) 746-6990 weekdays between 8:00 A.M. and 4:00 P.M. Eastern Standard Time. Please have the unit's serial number available. We will also need to know the specifics of any other equipment connected to the unit. When calling, please have the unit up and running, near the phone if possible. Our technician(s) will likely ask certain questions to aid in diagnosis of the problem. Also, have a voltmeter handy, if at all possible.

DRAKE also provides technical assistance by

> Email: servicehelp@rldrake.com
> Fax: (937) 806-1510

Many of the products that are sent to us for repair are in perfect working order when we receive them. For these units, there is a standard checkout fee that will be charged. Please perform whatever steps are applicable from the product's Instruction Manual before calling or writing as this could save unnecessary phone charges. Please do not return the product without calling Drake Service and following the steps above first; it is preferred to help troubleshoot the problem over the phone (or by Email) first, saving you both time and money.

**The complete user manual is available for download on Drake's website.
www.rldrake.com/product/peg-plus - OR - www.rldrake.com/summary-of-drake-models**

R.L. DRAKE HOLDINGS, LLC

Sales: **937-746-4556** • Support: **937-746-6990** • Fax: **937-806-1510**

www.rldrake.com