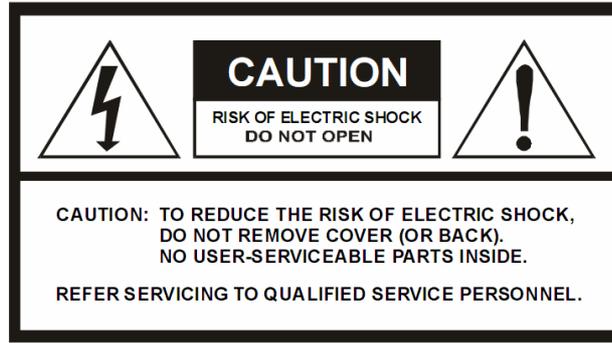


DTS-1800-U6GPDR Fibre Optic Video Transmission
Panasonic VLT System Installation.

1. Important Safety Instructions.
2. Product description.
3. Overview of System Connections.
4. VLT Camera Control Setup.
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1. Safety Instructions.

Important Safety Instructions



	This symbol, whenever it appears alerts the user to the presence of uninsulated dangerous voltages inside the enclosure – voltage that may be sufficient to constitute a risk of shock.
	This symbol, whenever it appears alerts the user to important operating and maintenance instructions in the accompanying literature. Please read the manual.
	This Product contains Class 1 Lasers. A Class 1 Laser is eye-safe under all operating conditions.
DANGER WARNING CAUTION	These words, whenever they appear, alert the user to important safety information. Please read the manual.
NOTICE REFERENCE	These words, whenever they appear, alert the user to important operational information. Please read the manual.

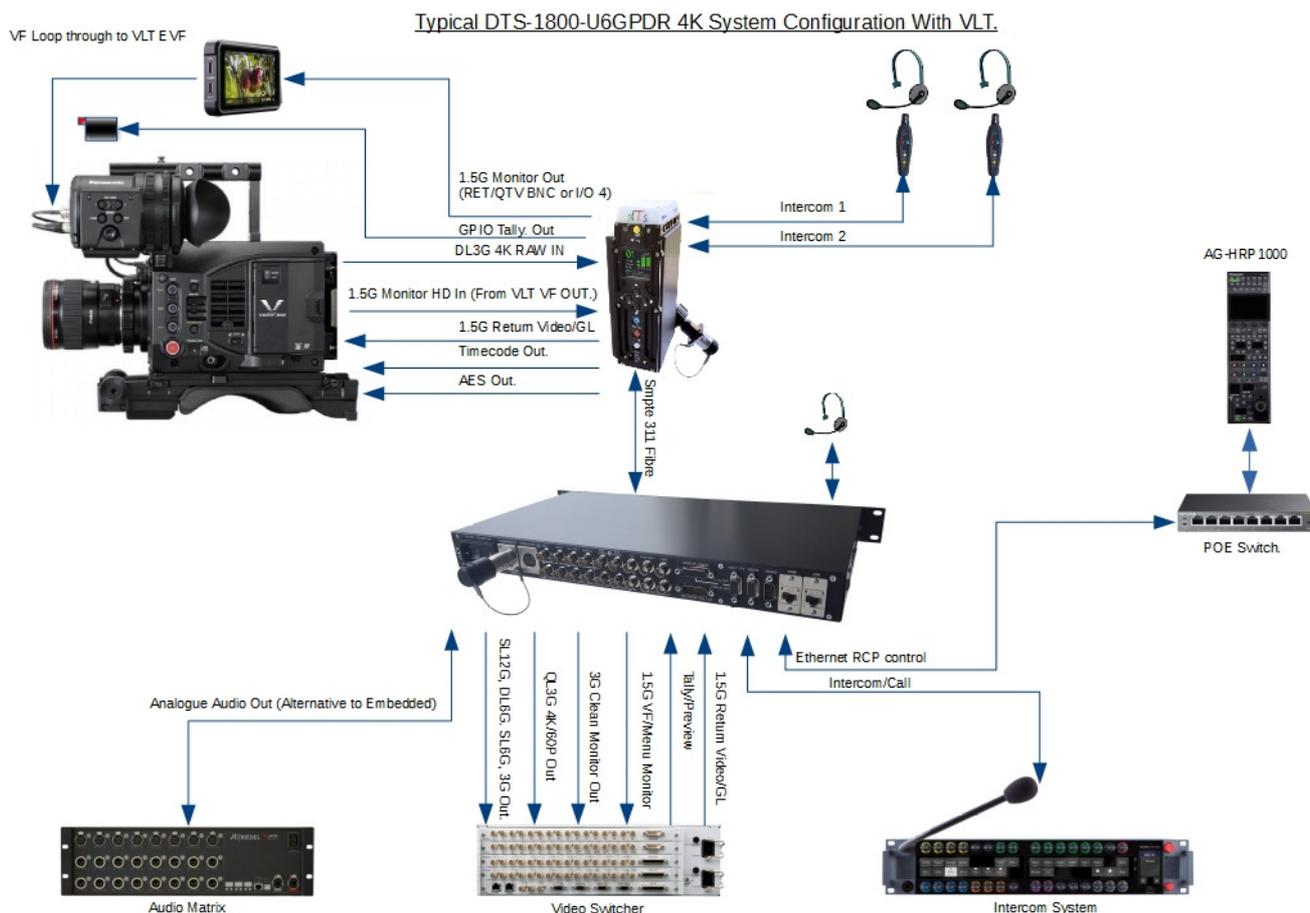
1. Read these instructions and keep for future reference.
2. Heed all warnings.
3. Follow all instructions.
4. Do not use this apparatus near water.
5. Clean only with dry cloth.
6. Install in accordance with the manufacturer's instructions.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet
10. Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Unplug this apparatus during lightning storms or when unused for long periods of time.
13. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
14. Avoid using or storing the equipment in environments where the equipment may be subjected to extremes of temperature, high humidity, dust and high levels of electromagnetic waves.
15. Disconnect Main Power Input to the unit before removing a module.
16. Do not subject the equipment to violent shaking or mechanical impacts as this may damage to equipment.
17. Do not drop or insert foreign objects into the equipment.

2. Product Description.

The DTS1800 is a fibre optic video transmission system that incorporates all the features and functions required to use a Broadcast Camera in a live studio or outside broadcast scenario. Along with native, uncompressed video transmission up to 4K resolution the system transmits/receives audio, camera control data, tally, monitor video, intercom and power for the camera.

The system consists of a battery sized Fibre Camera Adaptor (FCA) and a Fibre Base Station (FBS). The two units are connected by a composite fibre/copper cable giving high data rate capability and FCA/camera power from the FBS up to 2km.

3. Overview of System Connections.



DTS1820-U6GPR Fibre Adaptor (FCA)

1. HD RET.

The HD RET outputs the 1.5G RETURN VIDEO that is transmitted up from the base station. This is also used for Genlock/Sync for the Panasonic VLT.

This channel also provides diagnostics in the form of test patterns transmitted from the base station to the Fibre Adaptor when no video signal is input. The Input video format is automatically detected.

2. HD I/O.

The HD I/O connection is being used in this system to provide an output to the camera mounted EVF.

3. IN 1 & IN 2.

The FCA IN 1 & IN 2 connections can be used for 3G Video signal inputs. They can be used simultaneously for transmission of the RAW Dual 3G output of the VLT.

4. I/O 3.

The FCA IN 3 connection has been adapted to accept the input of the VLT front Viewfinder Output BNC. This then allows the FCA to provide transmission of a 1.5G monitor output channel to the FBS as well as VF and Monitor outputs at the FCA.

5. I/O 4.

The FCA IN 4 connection has been configured to provide an additional Viewfinder Output that can be used for a large on board monitor/VF.

6. RJ45 Ethernet.

The DTS1800 Fibre system provides an Ethernet Link that can be used for Camera Control of the VLT by connecting the supplied RJ45 flat Ethernet cable between the FCA and the VLT Ethernet port.

7. TC I/O.

Time code Input or Output can be set at the base station menu. If the BS menu option is set to INPUT then the FCA Time Code connector will automatically be set to an output and vice versa.

8. VF/TALLY Connector.

The Viewfinder connector provides a composite video output (see RET/QTV below), Tally and 12V power output for a viewfinder and accessories.

The DTS2071 GPIO Tally Monitor Unit supplied with cable can be connected to provide a front mounted Tally Lamp if required.

9. REMOTE (NOT USED BY VLT FOR CAMERA CONTROL.)

The Remote connection between the Fibre Adaptor and camera carries RS-422 camera control data. This RS-422 Serial Channel can also be used for connection to other external equipment.

The Remote connector also includes a video cable as some cameras often have composite video available on the remote connector.

The DTS system can also transmit a 625/525 composite video signal and so in the Setup Menu of the Fibre Adaptor the composite input can be selected between this video connection through the remote port or the MON BNC.

10. GENLOCK (VLT USES HD RET FOR GENLOCK/SYNC.)

The Analogue Genlock output can be 625/525 Black and Burst or Tri-Level. Format selection is automatic.

11. RET/QTV.

The RET/QTV connector can output a composite Video signal that is input to the base station. When no video is connected to the base station a test pattern is generated and transmitted to the Fibre Adaptor.

However, when a monitor composite video channel is also present this output can be switched, using the RET button on the FA, between the Live Video from this monitor input and the Return video input to the base. Therefore providing a composite Return Video function for Camcorders where this is not available.

Additionally, it can also be configured to provide an HD-SDI output signal sourced from the HD IN for use with an on board monitor or viewfinder.

This is useful when the system is used with a VariCam 35 and QL3G inputs.

NOTE:

1. For correct operation of this function the DTS1810S base station must have an analogue Genlock signal connected.
2. The Composite video connected to the Composite Return Video Input at the base station must be locked to this same Genlock reference.
3. The Genlock output from the Fibre Adaptor must be connected to the Genlock Input of the camera.

12. MONITOR INPUT.

The MON BNC Input allows a composite video signal to be input to the fibre adaptor and transmitted to the base station. When no video is connected the Fibre Adaptor generates a test pattern that is transmitted to the base station.

13. INCOM 1.

The Intercom 1 connector is for connection of a headset.

14. INCOM 2.

The Intercom 2 connector is for connection of a second headset.

1810-U6GPD Base Station.**1. HD OUT.**

The HD OUT connector has been configured to provide the 1.5G Viewfinder Monitor channel to display status and allow access to camera menus remotely.

2. HD IN.

The HD IN Connector is used for input of the 1.5G Return/Sync Video Signal.

3. OUT 1 to Out 4.

The OUT1 to OUT4 connectors provide the 3G or QL3G outputs.

4. OUT 6G1 & 6G2/SL12G (OPTION.)

The OUT 6G1 & 6G2/SL12G connectors provide either 3G, Dual Link 6G or Single Link 12G debayered Programme Video outputs.

5. CAM & ERI RJ45 Ethernet Connections.

Provides an Ethernet channel for Panasonic ROP.

When installed with an ERI performing protocol translation this is linked to the ERI Ethernet Port with the supplied Flat Ethernet Cable (Please see installation section below.)

6. REMOTE/RS422.

15 Way D-type Camera Control and RS422 channel.

7. VBS OUT.

VBS OUT connector outputs the composite video channel from the camera for monitoring purposes (where available.)

When no video signal is input to the fibre adaptor MON input then the Fibre Adaptor generates a test pattern that is transmitted and received at the base station.

8. VBS IN.

The VBS IN connection allows a composite video channel to be transmitted for output at the FA for e.g. a TELEPROMPT or the RETURN VIDEO function described in the FA Connector section.

When no video signal is present the Base Station generates a test pattern that is transmitted and received at the fibre adaptor.

9. INTERCOM/CALL I/O.

The 15W D-type Intercom connector has Inputs/Outputs for the Engineering and Production analogue audio intercom signals as well as their corresponding Call logic signals.

10. ANALOGUE AUDIO.

The Analogue Audio output provides a programme audio output that is derived from the digital audio embedded on the received 3G video (Not currently available.)

11. TALLY/PV.

Red and Green Tally connections and DTS2050 Operational Control Unit Preview contacts.

12. OPTION BNC.

Provides debayered 3G Video output without VF status displays.

13. AES OUTPUT.

The AES Audio output provides a programme audio output that is derived from the digital audio embedded on the received 3G video (not currently available.)

14. RS485 SERIAL CHANNEL.

RS485 connection for accessories such as Lens Controllers.

15. RS232 SERIAL CHANNEL.

RS232 connection for accessories such as Lens Controllers.

16. ANALOGUE GENLOCK.

Black and Burst 625/525 and Tri Level Syncs input.

4. VLT Camera Control Setup.

4.1. Adjusting the IP address of the ERI.

NOTE: The ERI IP address is the IP address assigned to the ERI.

- A. Power on system and wait for ERI to boot. On the Base station main status screen, next to the ERI entry a coloured indicator will be present when the ERI has booted.
- B. Press the up or DOWN navigation keys to access the ERI main menu.
- C. Press the RIGHT navigation key to access the ERI adjustment menu.
- D. **IP Adjust:** > will be highlighted, press the RIGHT navigation key to access the IP Adjust Menu.
- E. **ERI Adjust:** > will be highlighted, press the RIGHT navigation key to access the ERI IP Adjust screen.
Address: will be highlighted, press the RIGHT navigation key, the first value of the ERI IP address will be highlighted in red.
- F. Using the UP or DOWN navigation keys set the value required. Press the RIGHT navigation key to select the next value and adjust as before. Repeat until all four values are as required. The default setting is 192.168.001.001. Press the RIGHT navigation key so that only **Address:** is highlighted.
- G. Press the DOWN navigation key to highlight **Submask:** Press the RIGHT navigation key, the first value of the Submask will be highlighted in red.
- H. Using the UP or DOWN navigation keys set the value required. Press the RIGHT navigation key to select the next value and adjust as before. Repeat until all four values are as required. The default setting is 255.255.255.000. Press the RIGHT navigation key so that only **Submask:** is highlighted.
- I. Press the DOWN navigation key to highlight **Gateway:** Press the RIGHT navigation key, the first value of the Gateway address will be highlighted in red.
- J. Using the UP or DOWN navigation keys set the value required. Press the RIGHT navigation key to select the next value and adjust as before. Repeat until all four values are as required. The default setting is 192.168.001.001. Press the LEFT or RIGHT navigation keys so that only **Submask:** is highlighted.
- K. Press the LEFT navigation key. **Reboot: No** will be displayed. Press the RIGHT navigation key to highlight it in red. Press the UP navigation key to select **Reboot: Yes.** Press the LEFT navigation key to reboot the ERI.
- L. The screen will display **REBOOTING.** When rebooting has finished the unit will return to the Basestation main status screen.

4.2. Adjusting the Camera IP address setting in the ERI.

NOTE: This setting is to allow the ERI to know the IP address assigned to the VLT.

- A. With the system powered on and the ERI booted as above.
- B. Press the up or DOWN navigation keys to access the ERI main menu.
- C. Press the RIGHT navigation key to access the ERI adjustment menu.

- D. **IP Adjust:** > will be highlighted, press the RIGHT navigation key to access the IP Adjust Menu.
- E. **ERI Adjust:** > will be highlighted, press the DOWN navigation key to highlight **Cam Adjust:** > Press the RIGHT navigation key. **Address:** will be highlighted, press the RIGHT navigation key, the first value of the Camera IP address will be highlighted in red.
- F. Using the UP or DOWN navigation keys set the value required. Press the RIGHT navigation key to select the next value and adjust as before. Repeat until all four values are as required. The default setting is 192.168.001.002. Press the LEFT or RIGHT navigation keys so that only **Address:** is highlighted.
- G. Press the LEFT navigation key. **Reboot: No** will be displayed. Press the RIGHT navigation key to highlight it in red. Press the UP navigation key to select **Reboot: Yes**. Press the LEFT navigation key to reboot the ERI.
- H. The screen will display **REBOOTING**. When rebooting has finished the unit will return to the Basestation main status screen

4.3. Adjusting the ROP IP address setting in the ERI.

NOTE: This setting is to allow the ERI to know the IP address assigned to the ROP.

- A. With the system powered on and the ERI booted as above.
- B. Press the up or DOWN navigation keys to access the ERI main menu.
- C. Press the RIGHT navigation key to access the ERI adjustment menu.
- D. **IP Adjust:** > will be highlighted, press the RIGHT navigation key to access the IP Adjust Menu.
- E. **ERI Adjust:** > will be highlighted, press the DOWN navigation key to highlight **ROP Adjust:** > Press the RIGHT navigation key. **Address:** will be highlighted, press the RIGHT navigation key, the first value of the IP address will be highlighted in red.
- F. Using the UP or DOWN navigation keys set the value required. Press the RIGHT navigation key to select the next value and adjust as before. Repeat until all four values are as required. The default setting is 192.168.001.003. Press the LEFT or RIGHT navigation keys so that only **Address:** is highlighted.
- G. Press the LEFT navigation key. **Reboot: No** will be displayed. Press the RIGHT navigation key to highlight it in red. Press the UP navigation key to select **Reboot: Yes**. Press the LEFT navigation key to reboot the ERI.
- H. The screen will display **REBOOTING**. When rebooting has finished the unit will return to the Basestation main status screen.

4.4. Setup of Panasonic AK-HRP1000 ROP for use with DTS1810U Basestation ERI.

NOTE: Check for the latest ROP Firmware.

4.4.1 CONNECT Setting adjustment.

- A. Press the **MENU** button, rotate the right hand knob to highlight **24 CONNECT SETTING**, Push the right hand knob to select it.
- B. Rotate the knob under **CAM1** to select **LAN (AU)**. Push the knob down to save the setting.

- C. Press the **MENU** button to exit.

4.4.2 ROP IP address setting.

Note: This must be the same as address set in the ERI - IP Adjust: - ROP Adjust menu. In this example 192.168.1.003. The Port setting should be 35200.

- A. Press the **MENU** button, rotate the right hand knob to highlight **25 ROP IP SETTING**, Press the right hand knob to select it.
- B. Using the knobs beneath the **IP ADDRESS** number that you want to change, set the address values required.
- C. Rotate the right hand knob clockwise to select the next set of **IP ADDRESS** values, using the knobs beneath the number that you want to change, set the address values required.
- D. Rotate the right hand knob clockwise to highlight the **PORT** number, using the knob beneath the **PORT** number set the number to be 35200.
- E. Rotate the right hand knob clockwise to select page 2/4 to set the SUBNET MASK i.e. 255.255.255.0 This must be the same as set in the ERI - IP Adjust menu.
- F. Using the knobs beneath the **SUBNET MASK** number that you want to change, set the address values required.
- G. Rotate the right hand knob clockwise to select the next set of **SUBNET MASK** values, using the knobs beneath the number that you want to change, set the address values required.
- H. Rotate the right hand knob clockwise to select page 3/4 to set the DEFAULT GATEWAY i.e. 192.168.1.1 This must be the same as set in the ERI - IP Adjust: menu.
- I. Using the knobs beneath the **DEFAULT GATEWAY** number that you want to change, set the address values required.
- J. Rotate the right hand knob clockwise to select the next set of **DEFAULT GATEWAY** values, using the knobs beneath the number that you want to change, set the address values required.
- K. Rotate the right hand knob clockwise to select **UPLOAD (push)**. Press the knob below **UPLOAD (push)**. A popup will appear. Press the 3rd knob from the left. Then reboot the ROP.

4.4.3 CAMERA IP address setting.

Note: This must be set to match the IP address of the ERI. In this example 192.168.001.001 with the Port set to 49152.

- A. Press the **MENU** button, rotate the right hand knob to highlight **26 CAMERA IP SETTING**, Push the right hand knob to select it.
- B. Using the knobs beneath the **CAM1 IP ADDRESS** number that you want to change, set the address values required.

- C. Rotate the right hand knob clockwise to select the next set of **CAM1 IP ADDRESS** values, using the knobs beneath the number that you want to change, set the address values required.
- D. Rotate the right hand knob clockwise to highlight the **PORT** number, using the knob beneath the **PORT** number set the number to be 49152.
- E. Press the knob below **CAM1 INF UPLOAD (push)**. A popup saying COMPLETE will appear. Press the 3rd knob from the left.
- F. Press the **MENU** button to exit.

4.5 Setup of Panasonic VariCam LT for use with DTS1810U Basestation ERI.

- A. On the VLT Control Panel press the **MENU** button.
- B. Highlight and select **LAN PROPERTY**.
- C. Select **DCHP** and set to **DISABLE**.
- D. Select **IP ADDRESS** and set to the required address. In this example, 192.168.1.002. This must be the same as address set in the ERI - IP Adjust: - CAM Adjust: menu. Select **OK** when finished.
- E. Select **SUBNET MASK** and set to the required value i.e 255.255.255.0. This must be the same as set in the ERI - IP Adjust: - menu. Select **OK** when finished.
- F. Select **DEFAULT GATEWAY** and set to the required address i.e 192.168.1.1. This must be the same as set in the ERI - IP Adjust: menu. Select **OK** when finished
- G. Highlight **EXIT** and select it. The Network will restart.
- H. Highlight and select **NETWORK SEL** and set to **LAN**.
- I. Highlight **EXIT** and select it.
- J. To set up a User Account Refer to Panasonic 'Multicam White Paper'
- K. NOTE: for ROP operation select SCENE 1 under Main Colour Setting.

5. VLT Settings for Cine Live 4K.

5.1 Notes on Video Setting.

Resolution: 3840 x 2160.

Frequency: 50/59.94P

SDI OUTPUT: Ensure Processed RAW not RAW is selected.

Codec: AVC-I4KLT

