

# IQD1EDH-D1 EDH Inserter



## DESCRIPTION

The IQD1EDH-1 and IQD1EDH-2 are two modules for monitoring and inserting EDH data in a D1 data stream.

An error log gives the user information about both the rate of errors and the position of the error by means of EDA (Error Detected Already) and EDH (Error Detected Here) flags.

The module can be fully controlled by either a front panel display, or remotely by use of Rollcall™ and a PC.

Automatic switching between 525 and 625 line formats with the input standard information being fed back to the user enables fast integration into a multistandard video editing suite.

The incoming EDH flags and checksum values can be displayed in Rollcall™. Outgoing EDH flags can be forced to be on, off or left to be calculated as normal.

The IQD1EDH-1 module provides 3 serial outputs, the IQD1EDH-2 provides 4 serial outputs and an error status output is available from both units.

## FEATURES

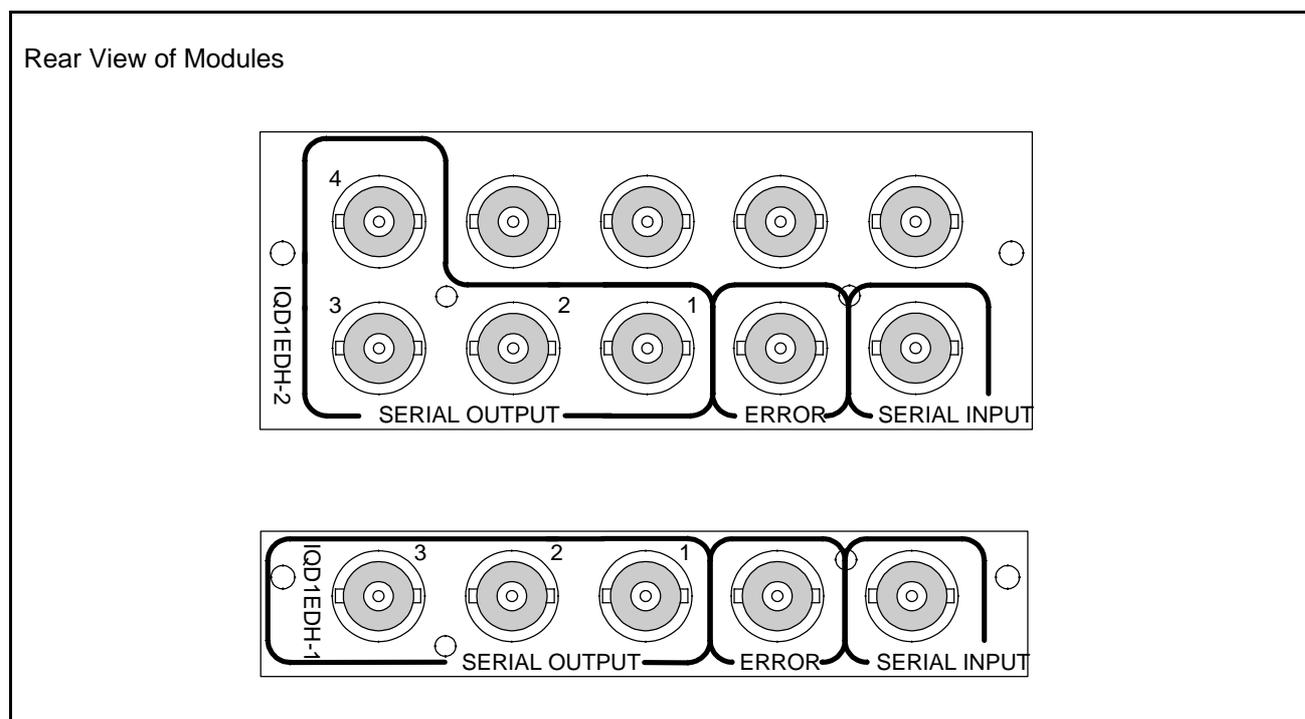
- D1 Serial Input With Serial Output
- Error Status Report in Accordance with SMPTE 269M
- Single Modular Card, (IQD1EDH-2 double width, IQD1EDH- single width)
- Checks, Adds and Extracts EDH Information
- 4:2:2 Sample Data Output
- Returned Data displayed in 4 numbering standards

Versions of the module cards available are:

IQD1MON-1	3 Serial outputs.EDH processing, Gamut and level Checking	Single width module
IQD1MON-2	4 Serial outputs.EDH processing, Gamut and level Checking	Double width module
IQD1EDH-1	3 Serial outputs EDH processing	Single width module
IQD1EDH-2	4 Serial outputs EDH processing	Double width module

## IQD1EDH-D1 EDH Inserter

### SPECIFICATIONS



#### INPUT SIGNALS

Serial Digital D1

Serial Digital D1 via a BNC socket terminated in 75 Ohms.

Input return loss better than -15 dB @ 270 MHz

The input equaliser contains an automatic equaliser allowing input cable lengths of up to 140 m when high quality cable is used.

#### OUTPUT SIGNALS

Serial Digital D1

Four or two isolated D1 serial digital outputs are available via BNC connectors for connection to 75 Ohms systems.

Output level 800 mV  $\pm$ 10%

Output return loss better than -15 dB @ 270 MHz

*Note that to ensure reliable transmission of serial digital signals without causing unacceptable levels of radiated emissions, only high quality 75 Ohm co-axial cable should be used.*

*The cable must also be terminated with a precision 75 Ohm load.*

Error

A single BNC connector providing error status reporting in accordance with SMPTE 269M. This is an Opto-coupled output, open for OK, closed for fault or power fail and 2 ms pulse to indicate a field error.

## **IQD1EDH-D1 EDH Inserter**

### **TECHNICAL DATA**

#### **Serial D1 Input**

Input Impedance                      75 Ohms  
Return Loss                            > -15 dB to 270 MHz

#### **Serial Outputs**

Output Impedance                    75 Ohms  
Output level                           800 mV +10%  
Return loss                            >15 dB to 270 MHz

#### **Error Output**

See Appendix for more details.

**Card edge controls for**            Reset EDH error log

**LED Indications for**                Any errors in the last second, hour, day and week.  
Error Detected Here  
Error Detected Already

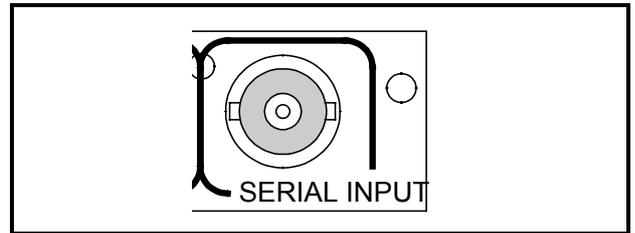
**Rollcall™ Control for**              Full EDH packet information  
Long term error logging (Error Seconds)  
Extract sample values

**Power**                                    +7.5 V@ 850 mA  
    -7.5 V @ 280 mA                      Supplied via rack connector.

## IQD1EDH-D1 EDH Inserter

### SERIAL INPUT

The serial digital input to the unit is made via this BNC connector which terminates in 75 Ohms.

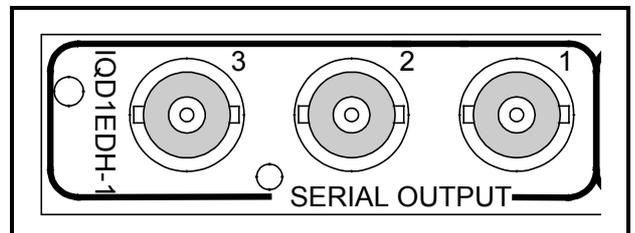
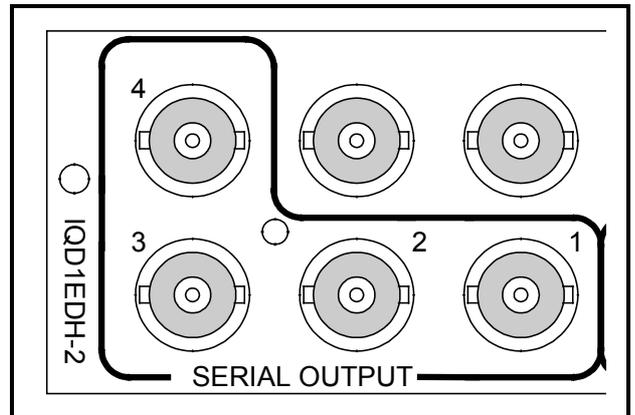


### SERIAL OUTPUTS

Serial digital signals are available from the unit via BNC connectors for 75 Ohms.

The IQD1MON-2 provides four outputs and the IQD1MON-1 provides three outputs.

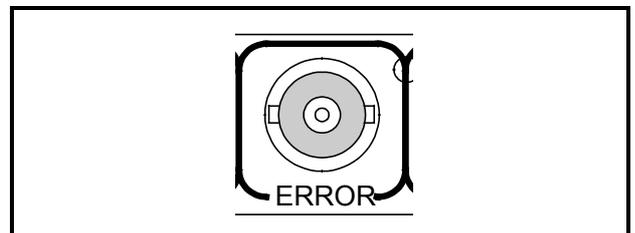
These are the three (IQD1EDH-1) or four (IQD1EDH-2) isolated Serial Digital outputs of the unit via BNC connectors for 75 Ohms.



### ERROR

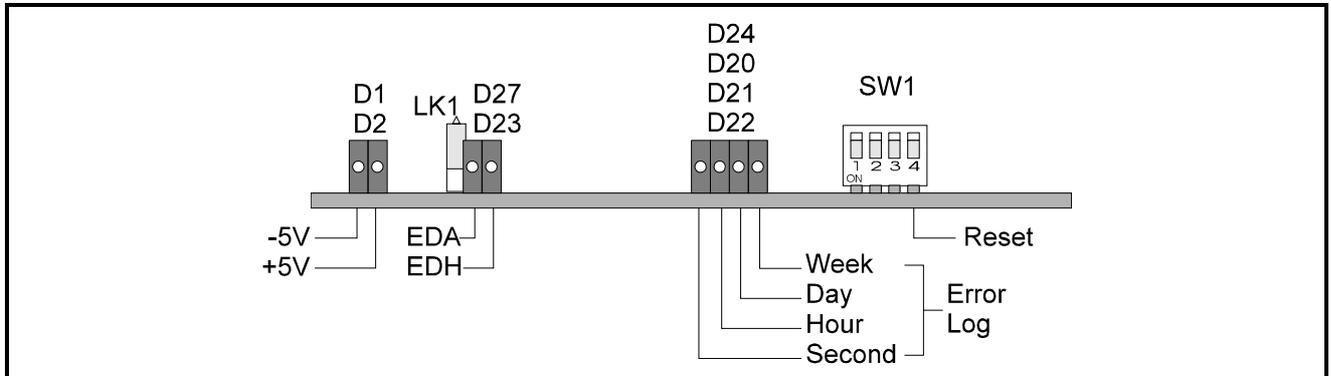
This BNC connector provides an output for error status reporting in accordance with SMPTE 269M. This is an Opto-coupled output, open for OK, closed for fault or power fail and 2 ms pulse to indicate a field error.

For more details refer to the Appendix.



# IQD1EDH-D1 EDH Inserter

## CARD EDGE CONTROLS



Adjustment of the settings for the IQD1EDH is available either via card edge controls (Reset only on this module) and/or via a more comprehensive remote control system using RollCall™

*Note that the unit will respond to both local and remote control, one system overriding the settings of the other.*

*For cards using the RollCall™ remote control system, activating these switches will override the remote control settings. The RollCall™ control panel will then follow these settings.*

*Note that in Main-frames where RollCall™ is not available the remote link, LK1, located at the front of the card, should be removed. This ensures that when the unit is powered-up the factory default settings are loaded.*

*With LK1 fitted the card will power-up with the last settings sent by the remote control panel.*

### SW1

By setting these switches various modes of operation may be selected.

#### Position 1

This position has no function on this unit

#### Position 2

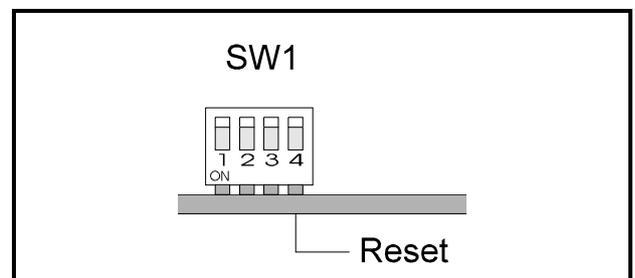
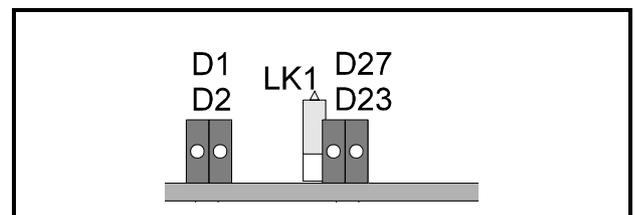
This position has no function on this unit

#### Position 3

This position has no function on this unit

#### Position 4

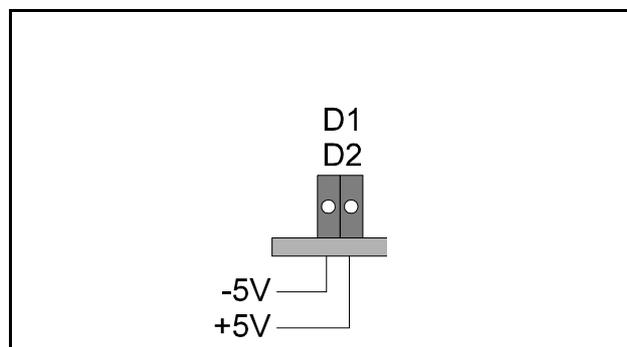
Setting this switch to the ON position resets the error log indicators.



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### LED INDICATORS

When illuminated D1 indicates that the -5V power supply is present and D2 indicates that the +5V supply is present.



### EDH REPORTING

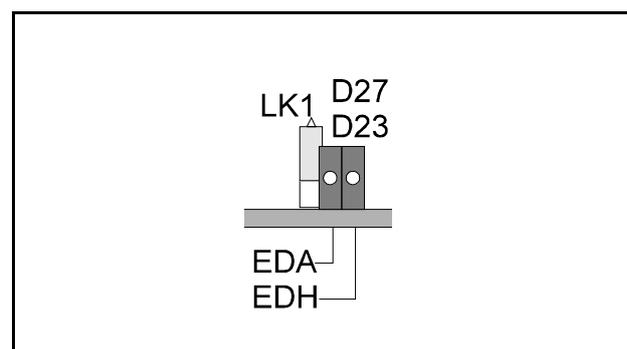
EDA (Error Detected Already) D27  
EDH (Error Detected Here) D23

These LED's have three conditions:

OFF (not illuminated) indicates that there is no EDH or EDA information available in the data stream (no flags set)

FLASHING indicates that EDH/EDA information is available in the data stream and there are EDH or EDA errors.

ON (illuminated) indicates that EDH/EDA information is available in the data stream and there are no EDH or EDA errors.



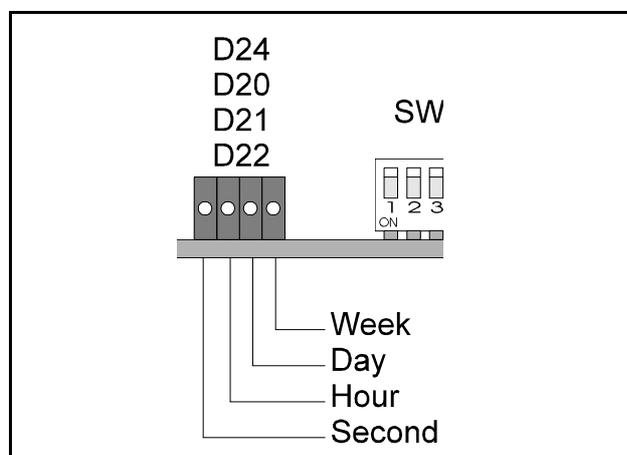
D24, D20, D21 and D22 indicate that EDH errors have occurred during a particular time period.

D24 indicates that an error has occurred in the last second

D20 indicates that an error has occurred in the last hour

D21 indicates that an error has occurred in the last day

D22 indicates that an error has occurred in the last week



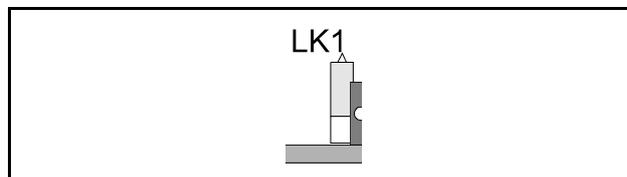
## IQD1EDH-D1 EDH Inserter

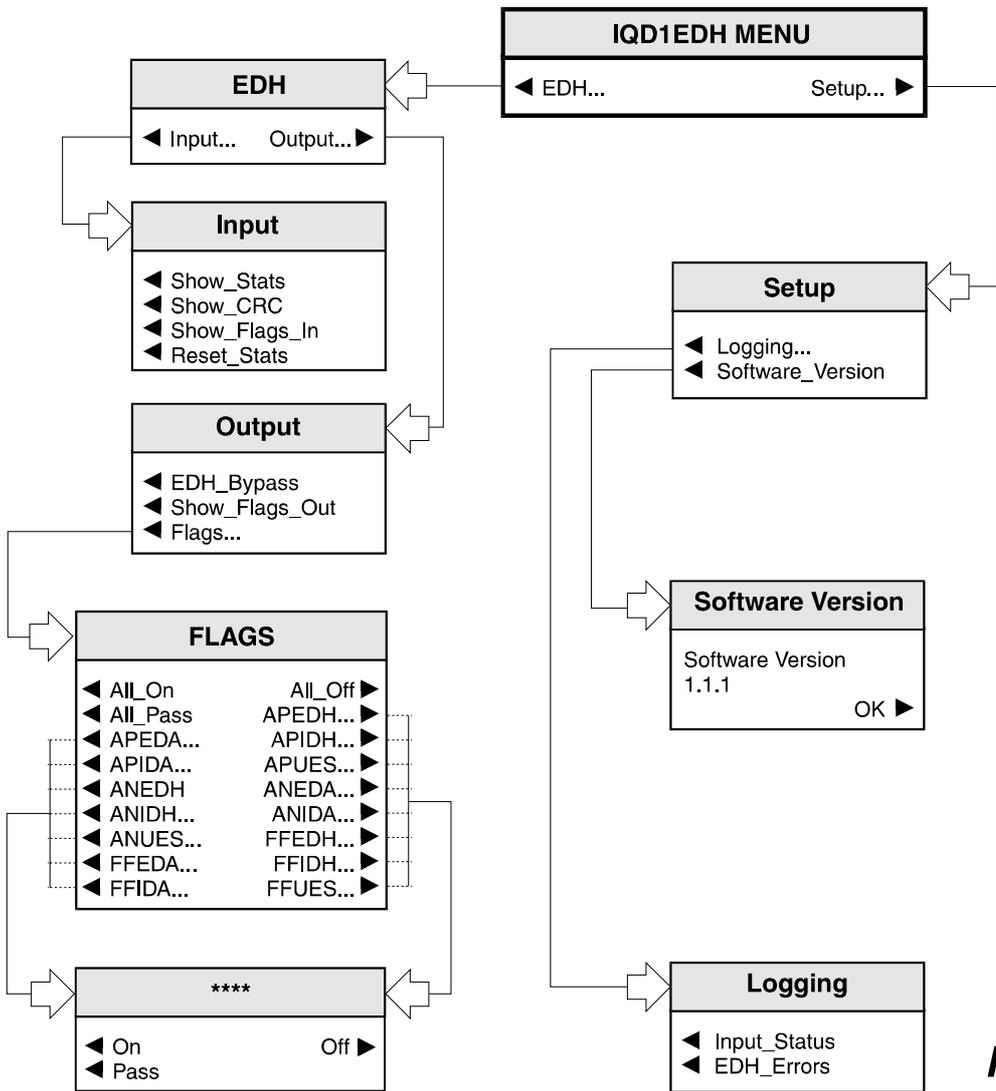
### LINK LK1

This link allows the default settings at power-up to set.

When the link is fitted the module will power-up in the same state as when the module was powered-down. When the link is not fitted the module will power-up using the factory default settings.

*Note that the settings are saved every 10 seconds*





***IQD1EDH  
Menu System***

# IQD1EDH-D1 EDH Inserter

## OPERATION FROM AN ACTIVE CONTROL PANEL

The card may be operated with an active control panel via the RollCall™ network.

The menus available for this card are shown on page opposite and will appear in the **Control** display window.

Operational details for the remote control panel will be found in SECTION 1 of the Modular System Operator's Manual.

### MENU DETAILS

*(see IQD1EDH Menu System Opposite)*

#### MAIN MENU

The main, or top level menu allows various sub-menus to be selected by pressing the button adjacent to the required text line.

*Note that where a menu item is followed by three dots (...) this indicates that a further sub-menu may be selected.*

Whenever a menu item is selected the parameters of that selection will be displayed in the **Information** window of the front panel. Where the selection is purely a mode selection and does not enable a sub-menu, the text will become reversed (white-on-black) indicating that the mode is active. If the mode is not available for selection the text will remain normal.

### SUB-MENU DETAILS

#### EDH

This selection reveals a sub-menu that allows various Input or Output EDH parameters to be enabled.

#### Input

This sub-menu allows input signal EDH information to be displayed in the information window.

#### Show Stats (Statistics)

When this function is enabled (text reversed) the information window will display the number of errors from the time the function was enabled. The elapsed time in hours, minutes and seconds is also displayed.

#### Show\_CRC

When activated the information window will display the Cyclic Redundancy Check (CRC) code for fields 1 and 2 of Active Picture (AP) and Full Field (FF)  
The hexadecimal number is calculated according to the CRC-CCITT polynomial  $x^{16} + x^{12} + x^5 + 1$

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### Show Flags In

When this function is activated the information window will display the status of the various input flags.

Three error checking data locations are shown:

AP	Errors during the active picture
AN	Ancillary data errors
FF	Full Field errors

These locations are followed by a five digit number of logical 1's and 0's indicating the status of the error flags.

The error flags are (from left to right)

EDH - error detected here:

Signifies that a serial transmission data error was been detected. In the case of ancillary data, this means that one or more ANC data blocks did not match its checksum.

EDA - error detected already:

Signifies that a serial transmission data error has been detected somewhere upstream. If device B receives a signal from device A and Device A has set the EDH flag, when B retransmits the data to device C, the EDA flag will be set and the EDH flag will be cleared if there is no further error in the data.

IDH - internal error detected here:

Signifies that a hardware error unrelated to serial transmission has been detected within a device. This is provided specifically for devices which have internal data error checking facilities, as an error reporting mechanism.

IDA - internal error detected already:

Signifies that an IDH flag was received and there was a hardware device failure somewhere upstream.

UES - unknown error status:

Signifies that a serial signal was received from equipment not supporting this error-detection mechanism.

### Reset Stats (Statistics)

Selecting this function will reset the EDH error count and the timer shown in the information window, to zero.

### Output

This sub-menu allows output signal EDH flags to be set and the information displayed in the information window.

#### Output Enable

Selecting this item (text highlighted) will enable EDH generation onto the output data stream.

### Show Flags Out

When this function is activated the information window will display the status of the various output flags.

Three error checking data locations are shown:

AP	Errors during the active picture
AN	Ancillary data errors
FF	Full Field errors

These locations are followed by a five digit number of logical 1's and 0's indicating the status of the error flags as in 'Show Flags In'

#### Flags

This function reveals a sub-menu of flags that may be set on the output data.

**ALL On** sets all available flags to the ON state.

**All Off** sets all flags to the OFF state.

**All Pass** allows all input signal flags to be passed through, unchanged, to the output.

A particular flag may be selected from the list (see below) and another sub-menu will be revealed that allows the flag to be set to **ON**, to **OFF** or **PASS** through from the input to the output.

## IQD1EDH-D1 EDH Inserter

### List of Flags

ANEDH	Ancillary Data: Error Detected Here
ANEDA	Ancillary Data: Error Detected Already
ANIDH	Ancillary Data: Internal Device Error Detected Here
ANIDA	Ancillary Data: Internal Device Error Detected Already
ANUES	Ancillary Data: Unknown Error Status
APEDH	Active Picture: Error Detected Here
APEDA	Active Picture: Error Detected Already
APIDH	Active Picture: Internal Device Error Detected Here
APIDA	Active Picture: Internal Error Detected Already
APUES	Active Picture: Unknown Error Status
FFEDH	Full Field: Error Detected Here
FFEDA	Full Field: Error Detected Already
FFIDH	Full Field: Internal Device Error Detected Here
FFIDA	Full Field: Unknown Error Status
FFUES	Full Field: Unknown Error Status

### SETUP

#### Logging

If a logging device is attached to the RollCall™ network, information about various parameters can be made available to such a device.

Selecting this item reveals a display that allows information about three parameters to be made available for logging.

#### Input\_Status

When activated, a loss of input signal condition will be available for the logging device.

#### EDH\_Errors

When activated, EDH error reports will be available for the logging device.

#### Software\_Version

Selecting this item reveals a display showing the version of the software fitted in the module. Select OK to return to the System Menu.