



EA1791

ETERE REDUNDANCY SWITCH

Presented by

Etere

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EA1791 Redundancy Switch

Introduction

What is EA1791 and What is it for?

The EA1791 is a redundancy switch able to carry out simultaneous switching of main/backup devices, whether controlled via serial (e.g. RS-232 and RS-422) or via GPI. The general characteristics of EA1791 are following:

- All connections are bidirectional (i.e. each connection can send and receive data).
- The switching is relay controlled.
- It doesn't add noise nor modifies the signal to be switched.
- Lines are independent one from another, the protocol of each serial line can differ from the others.
- The switching can be either manual from the front panel or remote controlled via GPI.
- Each playout channel requires an EA1791 device to enable redundancy switching.



Technical Features

Features	
Supported switching modes	4
No. of outputs on RJ45	8
No. of outputs on DB25	1
Remote control connector	RJ45
Switching current	300mA
Switching voltage	50VCC/VCA
Optical information	Output channels
Temperature field	From +5°C to +45°C
Relative humidity	< 90 %
Power supply	220 V 47-63 Hz
Power consumption	9W
Dimensions (mm)	(Rack standard 19" 1 U) - 45 (H)x442 (W)x245 (D)
Weight	1,9 Kg

The EA1791 device permits to switch both the GPI and Serial common data input/output to either the Line A or Line B input/output.

Configuring Jumpers

The EA1791 Redundancy Switch allows to activate/deactivate some of the available switching modes to use only one or both of them:

- **Switch via GPI Mode-A and GPI Mode-B:** To be enabled, the jumper **JP2** has to be closed inside the device.

Default Position (GPI-to-Device is disabled)

In the image below it is illustrated the default position of jumpers inside the device, the jumpers **JP1a** and **JP1b** are open whereas the **JP2** is closed:



Enabling ALL Switching Modes

All switching modes can be used at the same time by closing all Jumpers (i.e. JP1a, JP1b and JP2); in this case, all modes will coexist without any kind of priority (i.e. the latest switch will change the status of the previous one).

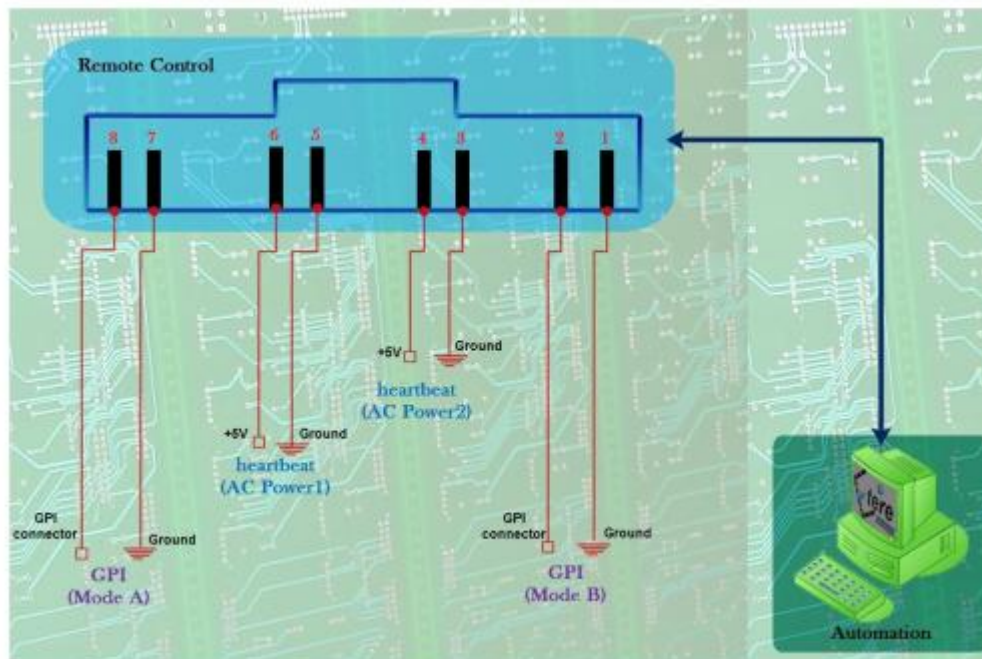
Wiring

Pinout

Please follow the information presented in this page for using the connections supported by EA1791:

FOR REMOTE CONTROL (RJ45 Pinout)

The connector for Remote Control is a RJ45, and its pins are configured as described below:



Remote Control PINS

Pins 1 and 2 (GPI Mode-B)

By using the pins 1(ground) and 2(Gpi contact) of the remote control connection, either the line A or line B can be forced. By opening contacts the device is set to A, by closing them (short-circuit them) it is set to B.

Pins 7 and 8 (GPI Mode-A)

By using the pins 7(ground) and 8(Gpi contact) of the remote control connection, it is equivalent to press the 'manual switch button' but remotely. In this mode, the A/B status varies each time pins 7 and 8 are short-circuited.

Power Supply PINS

Pins 3 and 4 (Heartbeat from AC-2)

The pins 3(ground) and 4(+5v) would continuously sending heartbeats of +5V to indicate that the second power supply (AC Power2) is working correctly; otherwise, if the heartbeat is not sent, it means that the related power supply is not working.

Pins 5 and 6 (Heartbeat from AC-1)

The pins 5(ground) and 6(+5v) would continuously sending heartbeats of +5V to indicate that the first power supply (AC Power1) is working correctly; otherwise, if the heartbeat is not sent, it means that the related power supply is not working.

NB: Heartbeats can be managed by Etere Automation to check the current status of both power supplies. See the Etere Automation >

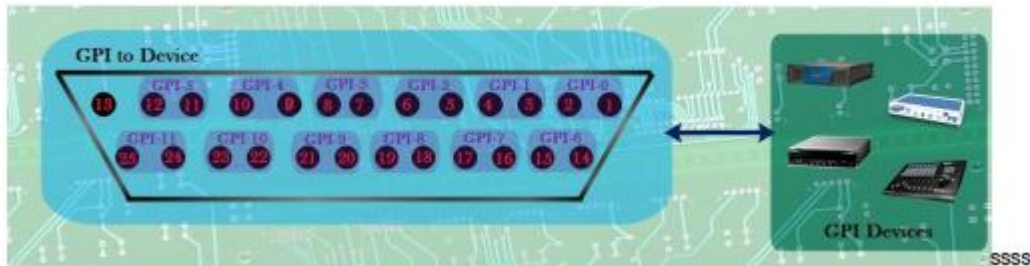
Automation Control manual for further information regarding how to use this feature to send a Snmp message in case of missed heartbeat:

FOR SERIAL CHANNELS (RJ45 Pinout)

Connections between Serial IN connectors (RJ45) and Serial Hubs are pin-to-pin. For further information about signals please consult the manual of the Serial Hub you are using.

FOR GPI CHANNELS (DB25 Pinout)

Each one of the GPI ports (2 input and 1 output) have 25 connectors that allow using up to 12 devices (GPI data connectors), connectors are numbered (i.e. GPI-0, GPI-1, GPI-2 and so on) from right to left from upwards to downwards:



NB: If the GPI-to-Device switching mode is enabled, the first connector (GPI-0) will be used to switch between lines A and B

Sample Configurations

In order to configure Etere Redundancy Switch within an Etere master/clone automation system for switching via either GPI Mode-A or GPI Mode-B, you need to follow the next steps:

1. Verify the Jumper n.2 (JP2) is closed.
2. Connect the Backup PC's GPI card to the Etere Redundancy Switch (EA1791) using a RJ45 cable with the following pin assignment schemes:

GPI PCL 725

Using GPI board PCL - 725:

DB37 M PCL - 725		Remote Control RJ45 (EA1791) - GPI Mode-A		Remote Control RJ45 (EA1791) - GPI Mode-B	
NO.*	01	07		01	
COM.*	02	08		02	

NO= normally open

COM = common pin

NB: Pins 01 & 02 activate the GPI 0 of the PCL-725 card

Advantech GPI 1750

Using a GPI board Advantech 1750:

GPI 1750		Remote Control RJ45 (EA1791) - GPI Mode-A	Remote Control RJ45 (EA1791) - GPI Mode-B
IGND.*	09	07	01
IDO.0*	11	08	02

IGND = ground IDO.0 = normally open

(*) Pins 09 & 11 activate the GPI 0 of GPI 1750 card

Advantech GPI 1760

Using a GPI board Advantech 1760:

GPI 1760		Remote Control RJ45 (EA1791) - GPI Mode-A	Remote Control RJ45 (EA1791) - GPI Mode-B
RO N.O.*	35	07	01
IDO.0*	37	08	02

IDO.0 = normally open

E.GND.1 = ground

Advantech GPI USB 4761

Using GPI board Advantech USB 4761:

GPI USB 4761		Remote Control RJ45 (EA1791) - GPI Mode-A	Remote Control RJ45 (EA1791) - GPI Mode-B
NO*	NO0	07	02
COM*	COM0	08	01

NO<0-7> = Normally open pin of relay output

COM<0-7>= Common pin of relay output