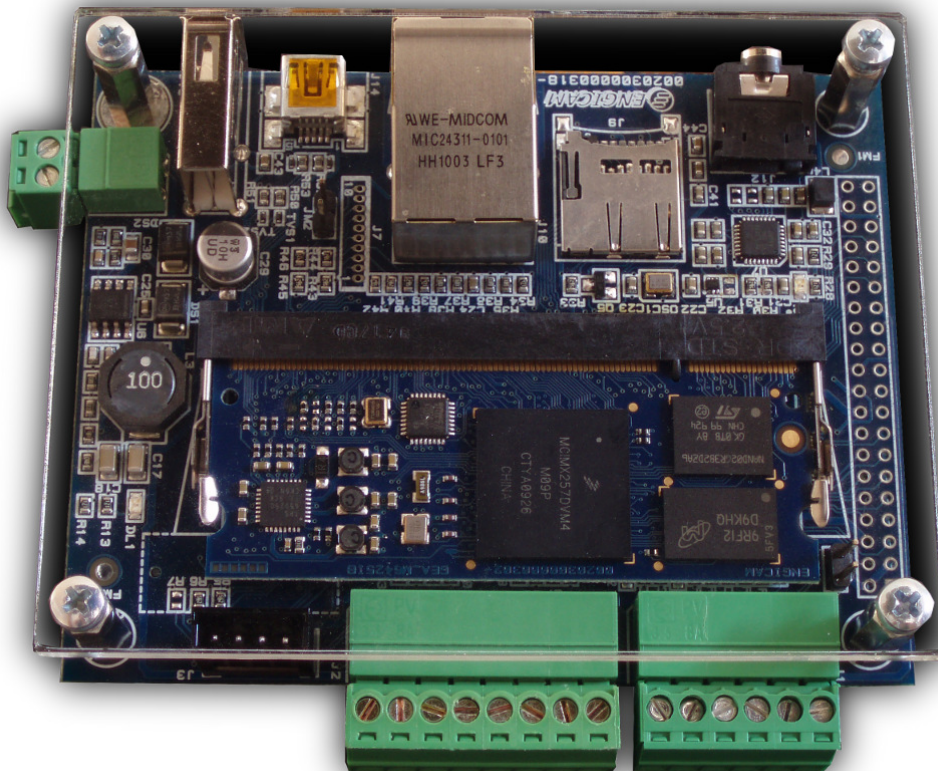


GEA M6425 IB Main Board

Cable Map Manual



REV A

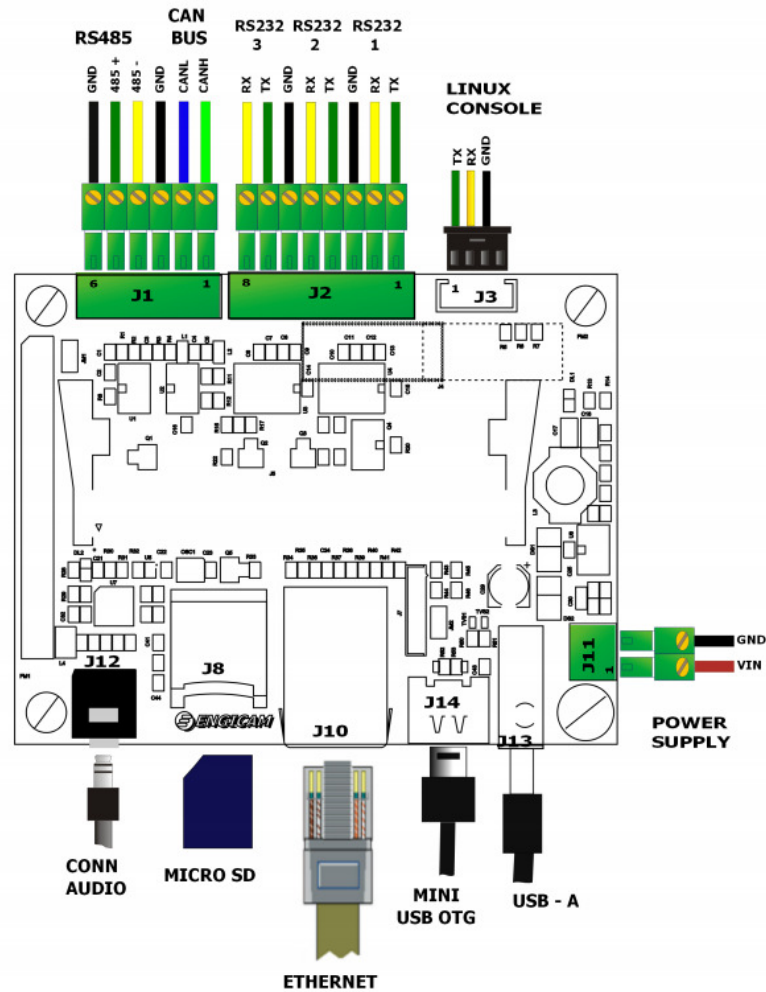
ATE	REVISION	CHANGE DESCRIPTION
20/09/10	-	Creation
21/09/10	A	Added features

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GEA MB Cable Map Overview

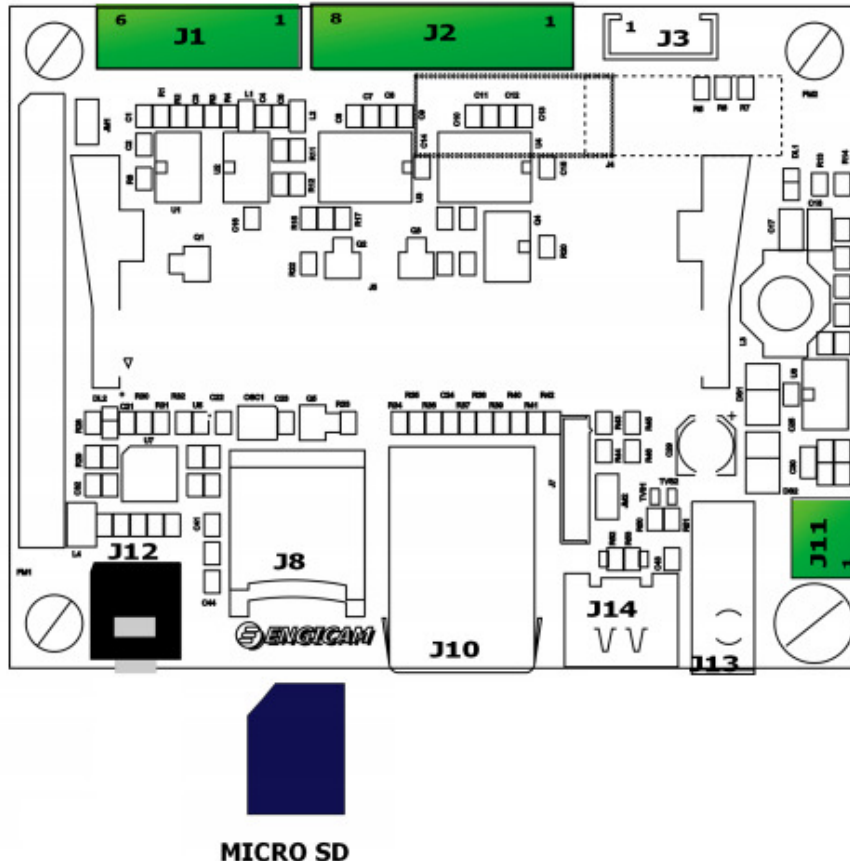
This document is an overview about cable connecting map of GEA system.
It describes the connector and the interface unit available to user, and it specifies the electrical characteristic of signals



Power supply 7-14 Vdc

The figure1 shows the whole wiring map and its join connectors.
This document'll try to analyze all type of used connections to help the the user's start up.

Micro SD Connections



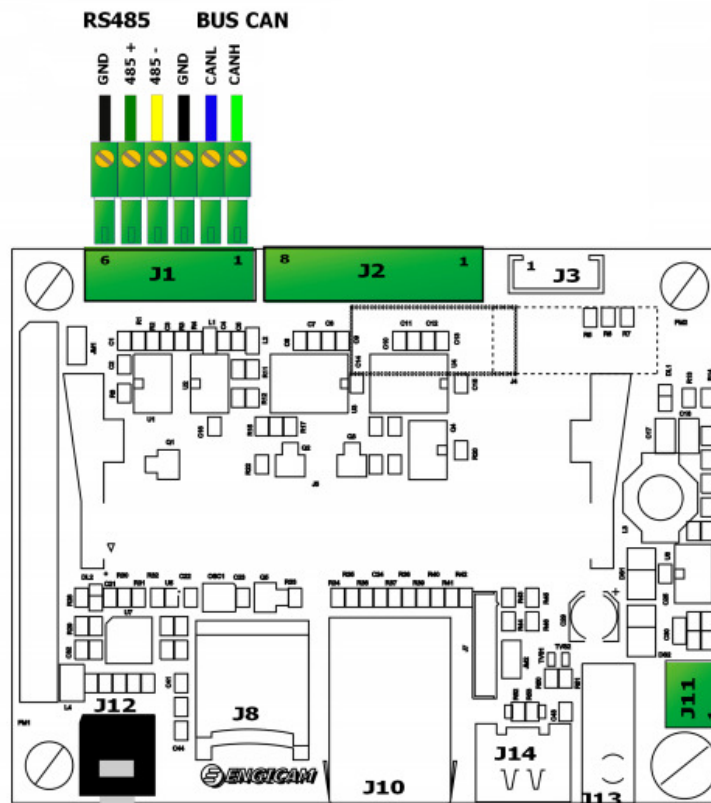
The GEA Main Board has a MicroSD switch detected connector. It uses both SD standard type card and SD High Capacity type card

Micro SD card features are:

- Capacity: variable from 32 MB to 32 GB
- Length: 15 mm
- Depth: 11 mm
- Height: 1 mm
- Voltage supply 2,7 V 3,6 V
- Slot : TransFlash
- MTBF: 1.000.000 h/e
- Operating temperature min.: -25 °C
- Operating temperature max: 85 °C

RS 485 & CAN Bus Connections

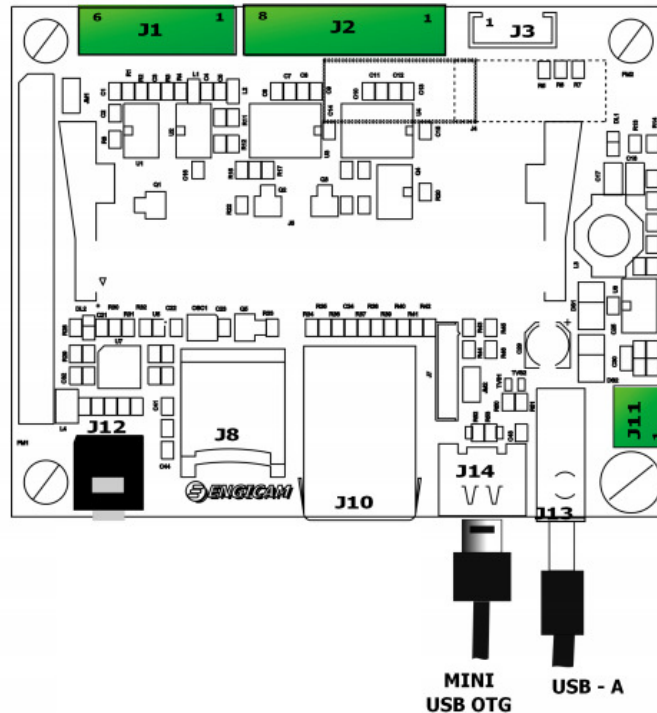
The following figure represents the connections of the RS485, and CAN bus's signals. Both RS485 and CAN bus are connected through a terminal male connector (EUROCLAMP code PV06-3.5-V-P 6) mounted on PCB and referenced J1.



The wiring map of female connector (EUROCLAMP code SH06-3,5) used for Uart&Can is shown in the following table.

Pin Number	Signal Name	Function Description	Voltage
1	CAN H	High level can bus line	Standard CAN Compliant
2	CAN L	Low level can bus line	Standard CAN Compliant
3	GND	Power Signal	-
4	RS485 N	Non Inverting Receiver In/Driver Out	UART Standard
5	RS485 P	Inverting Receiver In/Driver Out	UART Standard
6	GND	Power Signal	-

USB e Mni USB Connections

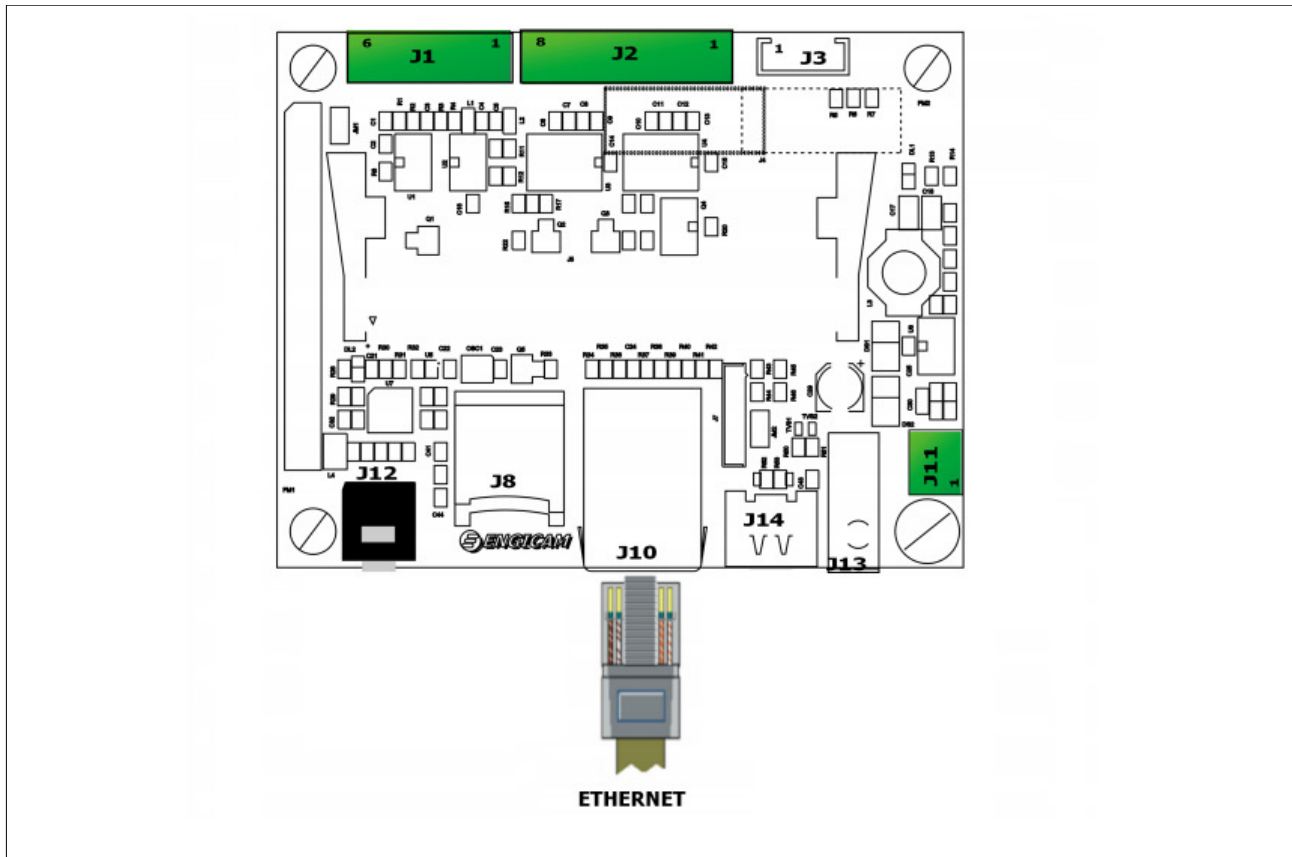


In the following tables are represented the electrical connection of USB interface, the first table shows the USB standard interface connections (USB type A plug), the second table shows the USB OTG interface connections (USB OTG type mini B plug)

Pin Number	Signal Name	Function Description	Voltage
1	VBUS	Power Signal	Standard USB
2	DM	Data N	Standard USB
3	DP	Data P	Standard USB
4	GND	Power Signal	Standard USB

Pin Number	Signal Name	Function Description	Voltage
1	VBUS	Power Signal	Standard USB
2	DM	Data N	Standard USB
3	DP	Data P	Standard USB
4	ID	Standard USB OTG	Standard USB
5	GND	Power Signal	Standard USB

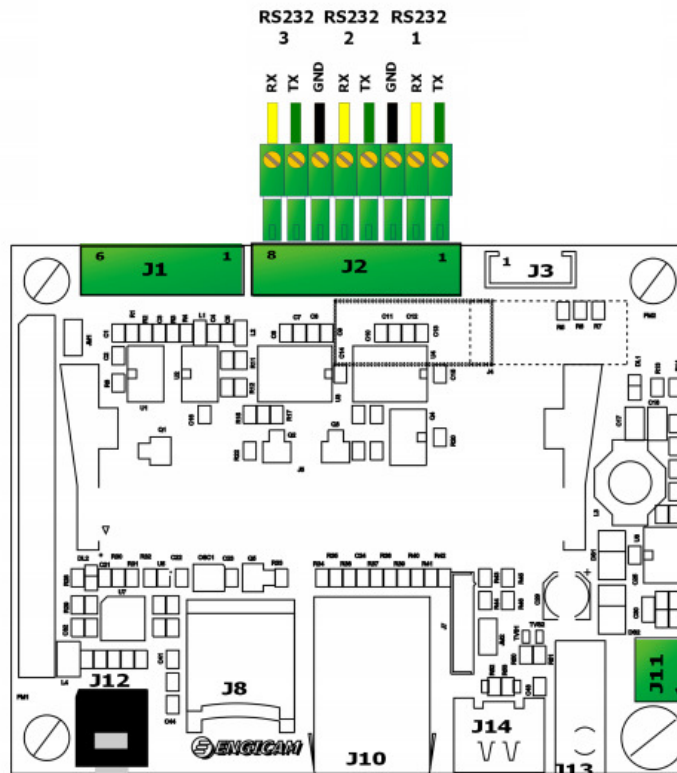
Ethernet Connections



The figure represents the Ethernet connection. This connection uses a RJ45 standard plug (8 wires) and the following table shows the wiring map.

Pin Number	Signal Name	Function Description	Voltage
1	TX-	Transmit positive signal	Standard Ethernet
2	TX+	Transmit negative signal	Standard Ethernet
3	RX+	Receive positive signal	Standard Ethernet
4	NC	-	-
5	NC	-	-
6	RX-	Receive negative signal	Standard Ethernet
7	NC	-	-
8	NC	-	-

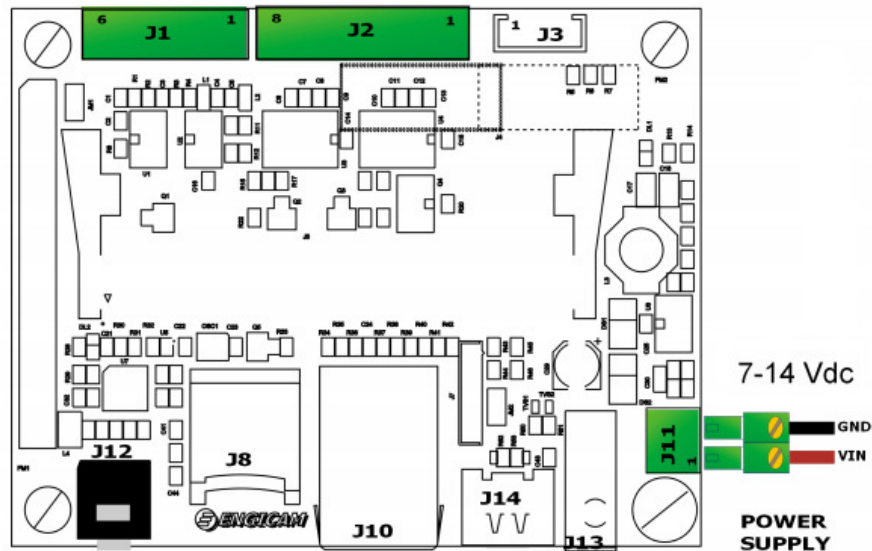
RS232 Connections



GEA MB has also three RS232 connections (see figure) which use a terminal connector interface. The connector used is type EUROCLAMP code PV06-3.5-V-P 6 (referenced J2). The following table shows the wiring map and the electrical features of connections

Pin Number	Signal Name	Function Description	Voltage
1	UART2_TXD	Transmit Signal	RS232 Standard
2	UART2_RXD	Receive Signal	RS232 Standard
3	GND	Power Signal	-
4	UART4_TXD	Transmit Signal	RS232 Standard
5	UART4_RXD	Receive Signal	RS232 Standard
6	GND	Power Signal	-
7	UART5_TXD	Transmit Signal	RS232 Standard
8	UART5_RXD	Receive Signal	RS232 Standard

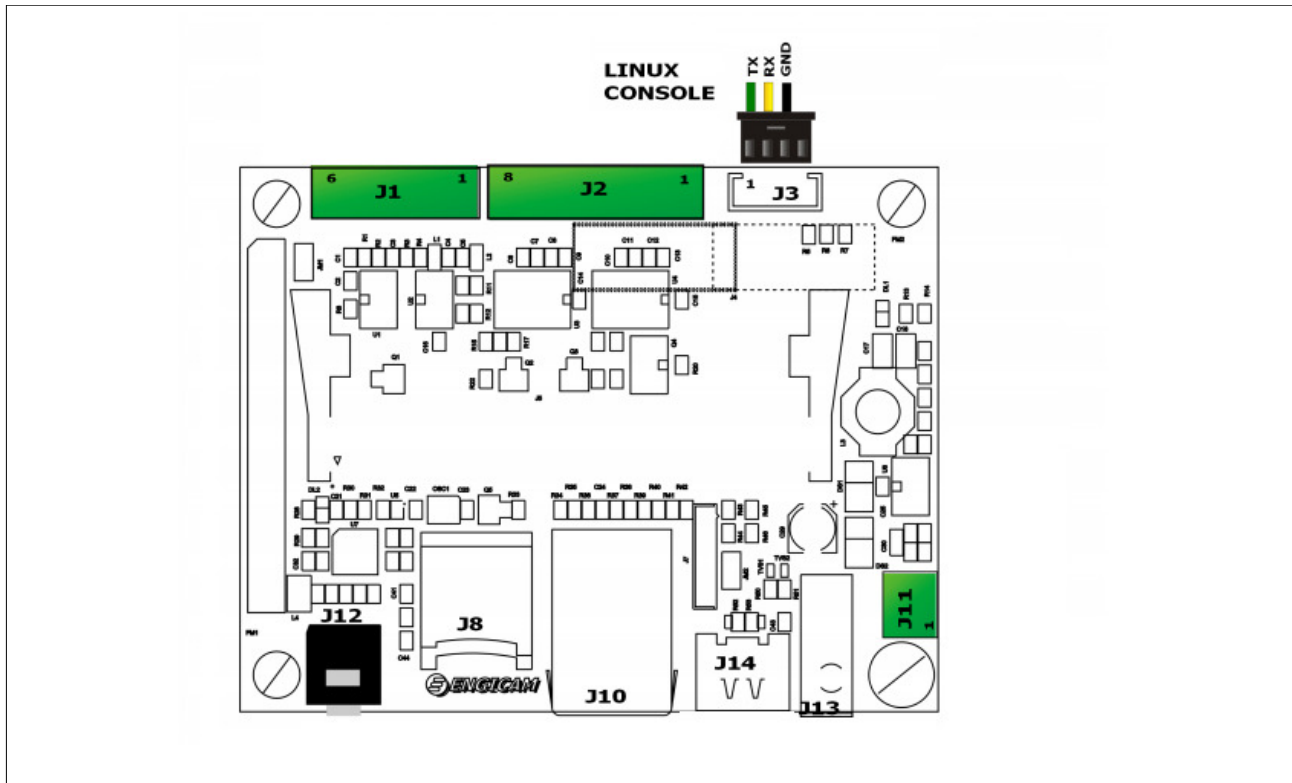
Power Supply Connections



The figure shows the power supply connection. The GEA MB receives an input DC voltage, which ranging from +8V to +26V. J9 is EUROCLAMP PV02-3.5-V-P, 2 positions p.3.5mm, Vertical Male connector, linked as follows:

Pin Number	Signal Name	Function Description	Voltage
1	+VIN	Power Signal	Up 7 to 14 VDC
2	GND	Power Signal	-

Linux Console Connections



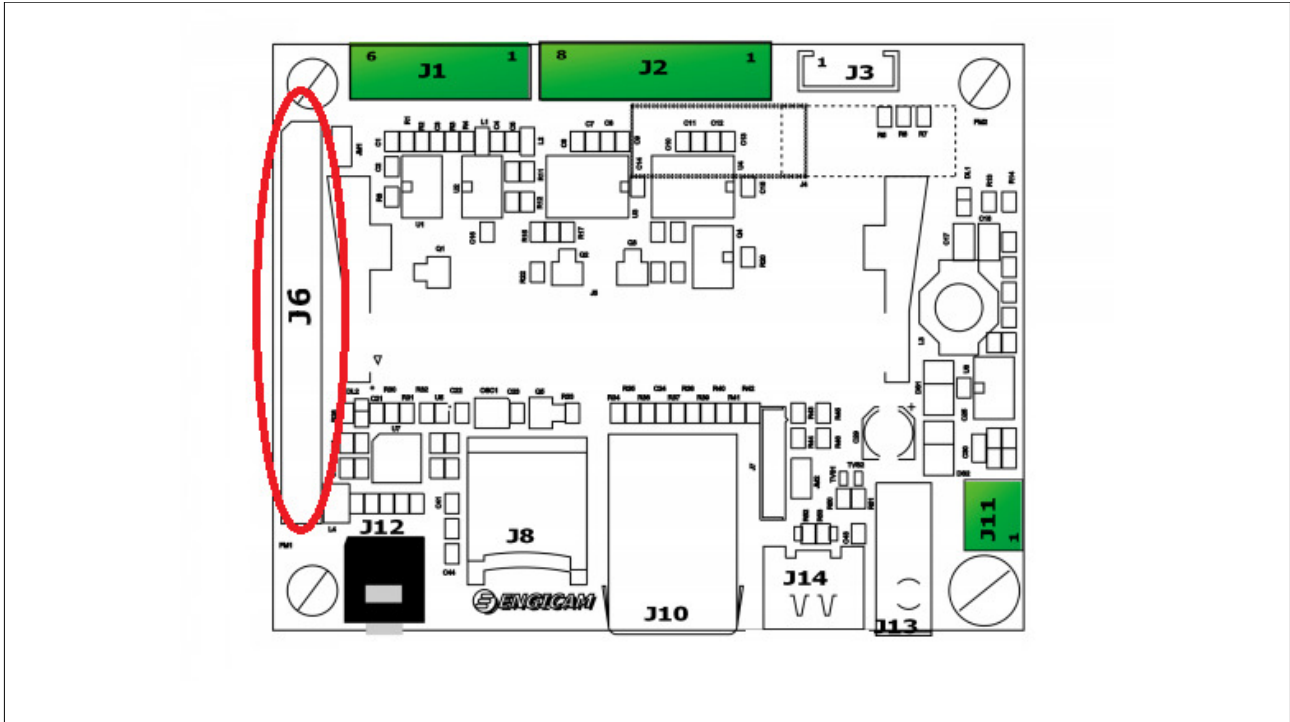
When Linux is installed on a GEA module, UART1 is used like console. The connector used is Modu II type, the following table shows the electrical features:

Pin Number	Signal Name	Function Description	Voltage
1	TX	Transmit Signal	Standard RS232
2	RX	Receive Signal	Standard RS232
3	GND	Power Signal	-
4	NC	-	-

The default communications settings is shown in following table

Linux console default settings	
Baud rate	115200
Data length	8 bit
Parity	none
Stop	1bit

Expansion Connector



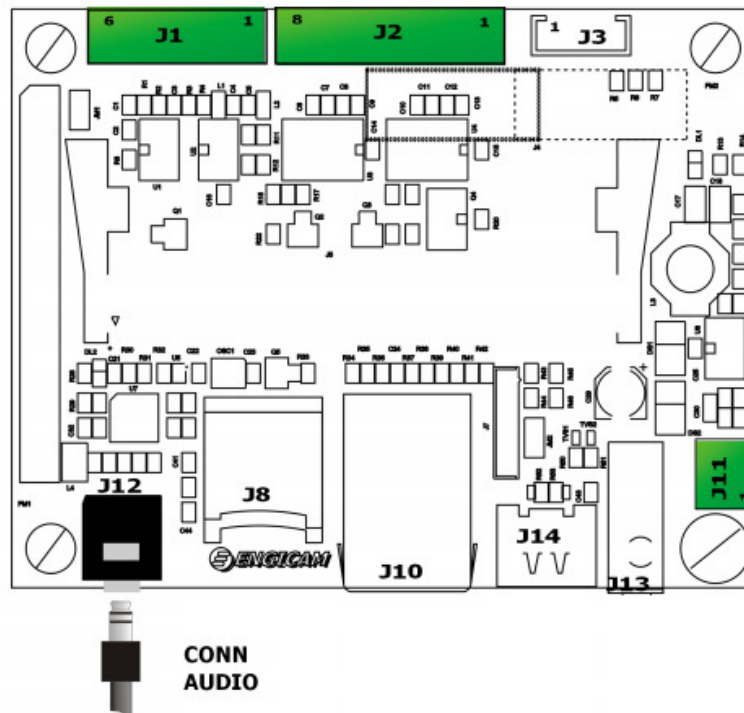
Gea Main Board is provided of Expansion connector (STRIP 2x20 Pole, 2.54mm step referenced J6) which allows to connect the following signals:

Pin Number	Signal Name	Function Description	Voltage
1	+VIN	Power Signal	Up 8 to 26 VDC
2	+3V3	Power Signal	-
3	+3V3	Power Signal	-
4	UART4_TXD	UART4 TXD signal	+3,3V
5	UART4_RXD	UART4 RXD signal	+3,3V
6	+1V8	Power PIN	-
7	GND	Power PIN	-
8	UART3_RXD	UART3 RXD signal	+3,3V
9	UART3_TXD	UART3 TXD signal	+3,3V
10	UART3_CTS	UART3 CTS signal	+3,3V
11	UART3_RTS	UART3 RTS signal	+3,3V
12	MISC_GPIO03	Generic GPIO (3,3V)	+3,3V
13	ADC_2	ADC input 2	+3,3V
14	I2C1_SDA	I2C SDA Signal	+3,3V
15	CANTX/USBOTG_PWR_EN	CAN 1 transmit signal / USB on the go interface	+3,3V/1,8V
16	CANRX/USB_OTG_OC	CAN 1 receive signal / USB on the go interface	+3,3V/1,8V

17	MISC_GPIO04	Generic GPIO (3,3V)	3,3V
18	+1V8	Power PIN	-
19	ADC_1	ADC input 1	+3,3V
20	GND	Power PIN	-
21	I2C1_SCL	I2C SCL Signal	+3,3V
22	+5V	Power PIN	-
23	CSI_PIXCLK	CMOS Sensor Interface Pixel Clock	+3,3V
24	CSI_VSYNC	CMOS Sensor Interface Vertical Sync	+3,3V
25	CSI_MCLK	CMOS Sensor Interface Sensor Master Clock	+3,3V
26	CSI_HSYNC	CMOS Sensor Interface Horizontal Sync	+3,3V
27	+5V	Power PIN	-
28	CSI_D2	CMOS Sensor Interface Data 2	+3,3V
29	CSI_D6	CMOS Sensor Interface Data 6	+3,3V
30	CSI_D4	CMOS Sensor Interface Data 4	+3,3V
31	CSI_D9	CMOS Sensor Interface Data 9	+3,3V
32	CSI_D8	CMOS Sensor Interface Data 8	+3,3V
33	CSI_D5	CMOS Sensor Interface Data 5	+3,3V
34	CSI_D7	CMOS Sensor Interface Data 7	+3,3V
35	GND	Power PIN	-
36	CSI_D3	CMOS Sensor Interface Data 3	+3,3V
37	CSPI_MOSI/UART3_RXD	CSPI MOSI	+3,3V
38	CSPI_CLK	CSPI CLK	+3,3V
39	CSPI_MISO/UART3_TXD	CSPI MISO	+3,3V
40	CSPI_SS0	CSPI SS0	+3,3V

Audio Connection

The following figure shows the audio mode connection, which is done by bushing without tread connector (6mm dia)



(See also Hw Manual document to design the connections)

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Evidence:

[GEAM6425-3.5](#) [GEAM6425-7](#) [GEA-MODULE](#)