



TRESOR

Datasheet

31/10/2017



VERSION V1.1

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.1 REVISION HISTORY

Date	Revision	Description
13/09/2017	V1.0	Draft version
31/10/2017	V1.1	Reviewed by FAE Technology, 3D models updated

.2 INTRODUCTION

Board was manufactured by FAE Technology commissioned by Arrow Electronics.

.3 DESCRIPTION

The TRESOR Mezzanine Board is a solution that enables the 96Boards to implement different security elements in the projects. The Board consists of three key components. The SLB9670x provides Trusted Platform Module (TPM) 2.0 functionality through SPI communication on the standard 96Boards LS expansion connector. For more compatibility the board contains the SLB9645x chip as well for supporting the TPM 1.2 Standard through I2C communication on the standard 96Boards LS expansion connector. The third secure element is the SLS32AIA020A TRUST-E authentication chip, sharing the same I2C bus with the TPM 1.2 module. This authentication functionality is mainly dedicated to the 96Boards IoT Edition platforms.

In addition the board is equipped with an UART to USB conversion chip which makes the debugging possible through a standard usb→micro_usb cable.

.4 ABSOLUTE MAXIMUM RATING

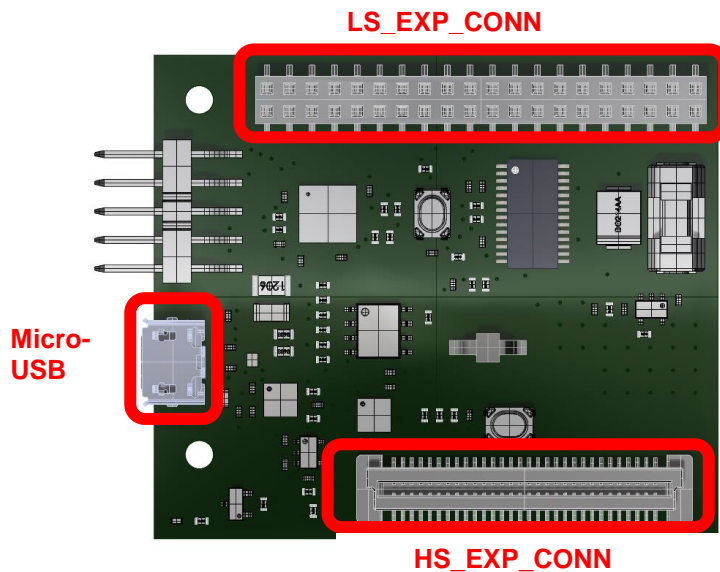
	min	max	unit
Supply voltage ¹	-0.3	20	V
Storage Temperature	-40	85	°C

1. Supply voltage is supported by the host board through the LS expansion connector. The voltage should not differ from 5V.

.5 OPERATING CONDITION

	min	typ	max	unit
Supply Voltage	2.7	5	18	V
Operating temperature	0		70	°C
TPM 1.2 Module				
SCL frequency Stand. Mode			100	kHz
SCL frequency Fast Mode			400	kHz
Default I2C address		0x20		HEX
TRUST E/X Module				
SCL frequency Fast Mode			400	kHz
Default I2C address		0x30		HEX
TPM 2.0 Module				
SPI SCLK frequency @VDD=1.8V			22.5	MHz
SPI SCLK frequency @VDD=3.3V			43	MHz
EPROM				
SCL frequency Stand. Mode @VDD=1.7...2.5V			100	kHz
SCL frequency Fast Mode @VDD=2.5...5.5V			400	kHz
I2C address set by HW		0x55		HEX

.6 CONNECTORS AND INTERFACES



.6.1 LS – Low Speed connector fully compliant to 96Boards specification

40 pin low profile female 2mm receptacle (20x2) 4.5mm height is specified

- UART0
- UART1 (optional)
- SPI bus
- I2C x2
- I2S
- GPIO x12
- Reset and Power button
- 1.8V, 5V and DC_IN power supplies

Pins used by the Mezzanine card:

UART0_CTS_N, UART0_TX, UART_RX, LS_EXP_GPIO_A, LS_EXP_GPIO_C, LS_EXP_GPIO_E,
I2C0_SCL, I2C0_SDA, SPI0_CLK, SPI0_MISO, SPI0_CS_N, SPI0_MOSI, LS_EXP_GPIO_B,
LS_EXP_GPIO_L

.6.2 HS – High Speed connector fully compliant to 96Boards specification

60 pin 0.8mm high speed Board to Board low profile receptacle connector is specified

- MIPI DSI
- USB
- SD or SPI interface
- MIPI CSI-2 (x2 optional)
- I2C (x2 optional, but 1 shall be provided if CSI interface(s) are provided)
- HSIC (optional)

All the pins of the HS expansion connector is available on the TRESOR Board.

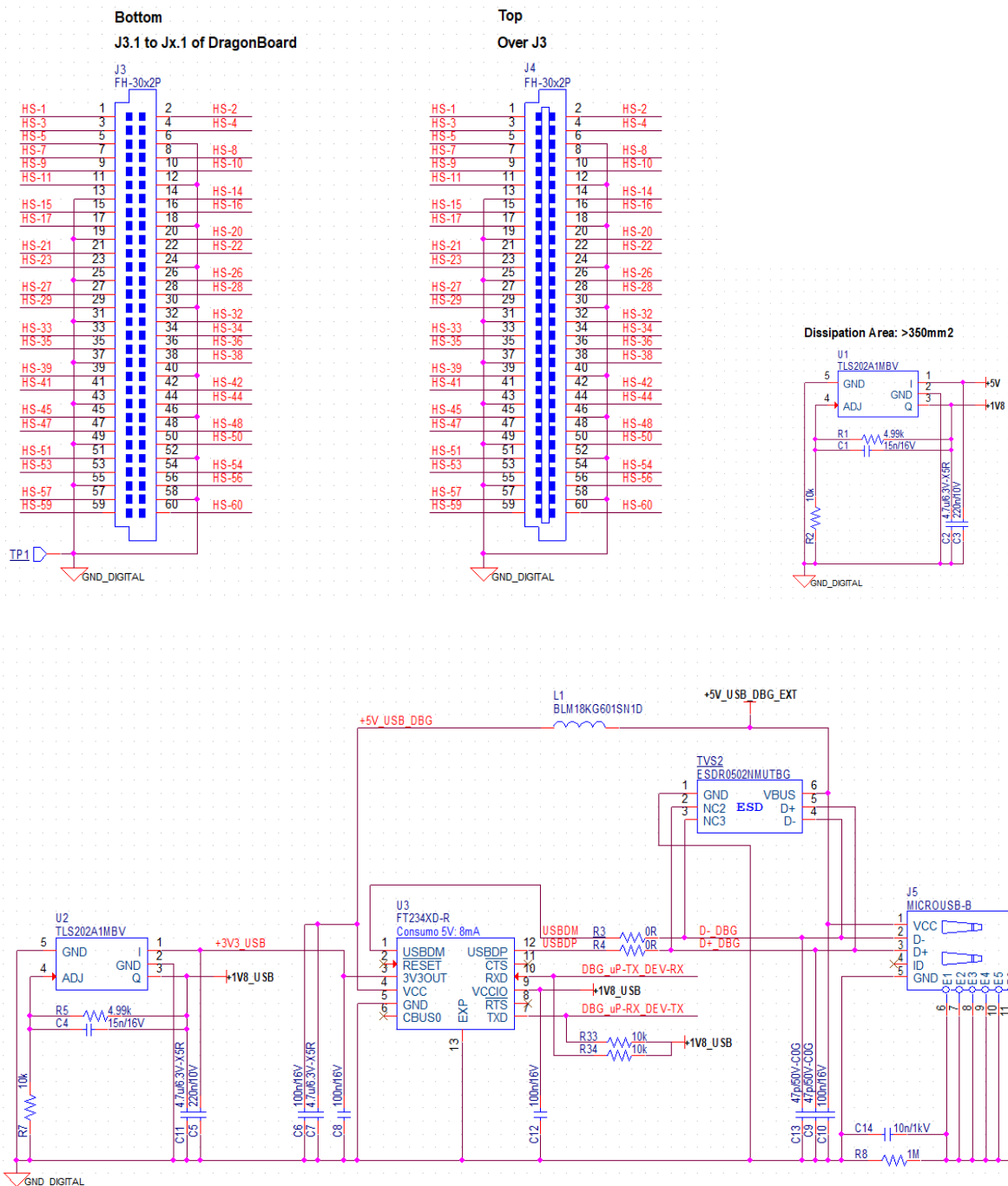
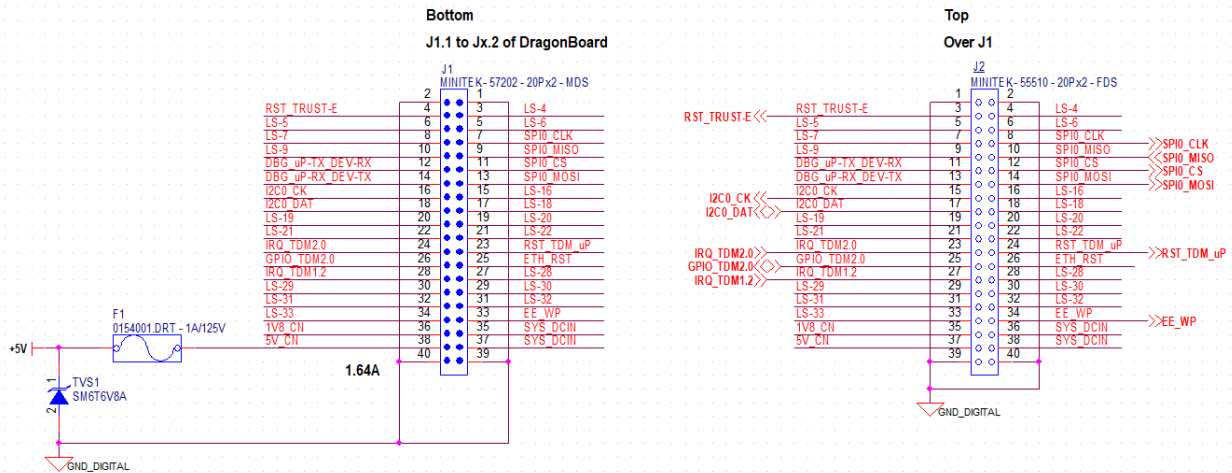
.6.3 Micro-USB Connector

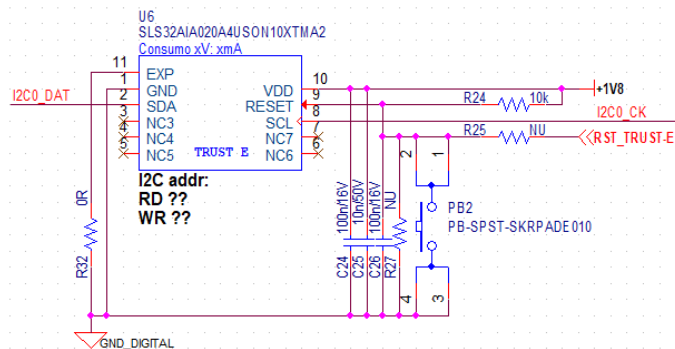
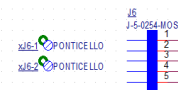
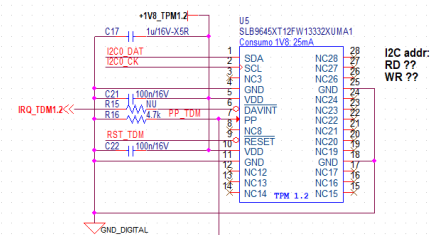
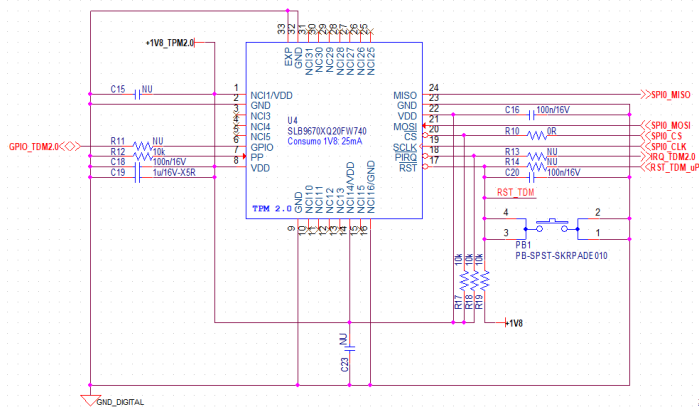
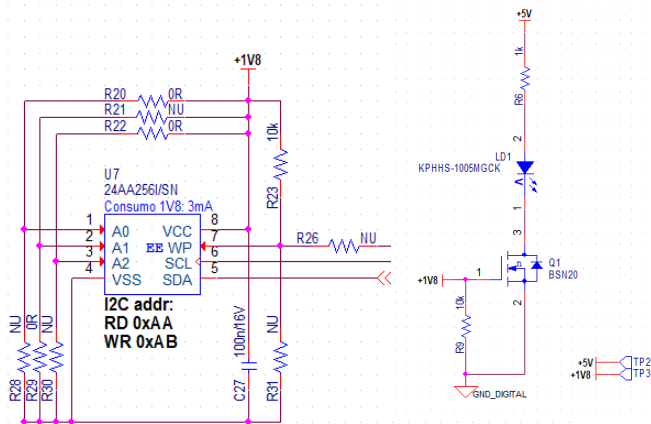
Debug interface for the Dragonboard, via UART0 to USB bridge.

Default setting for the Serial communication is:

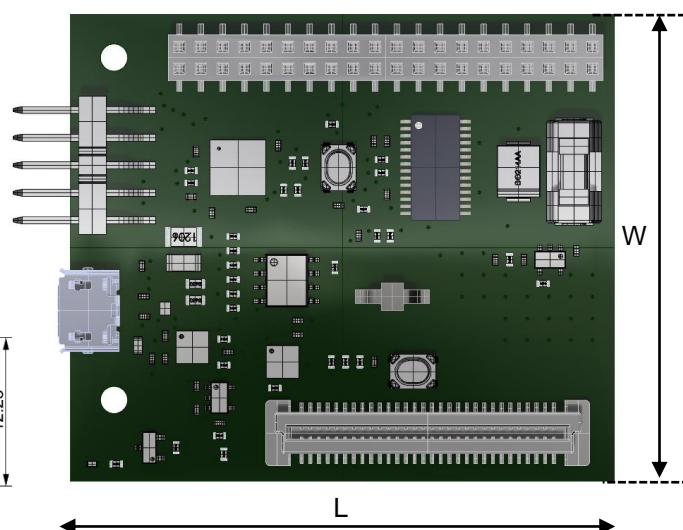
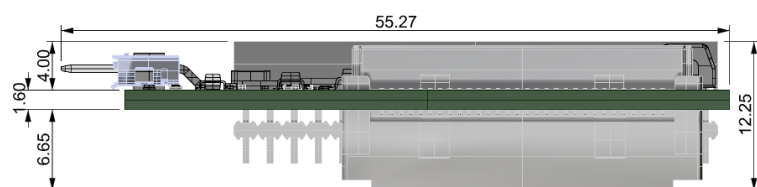
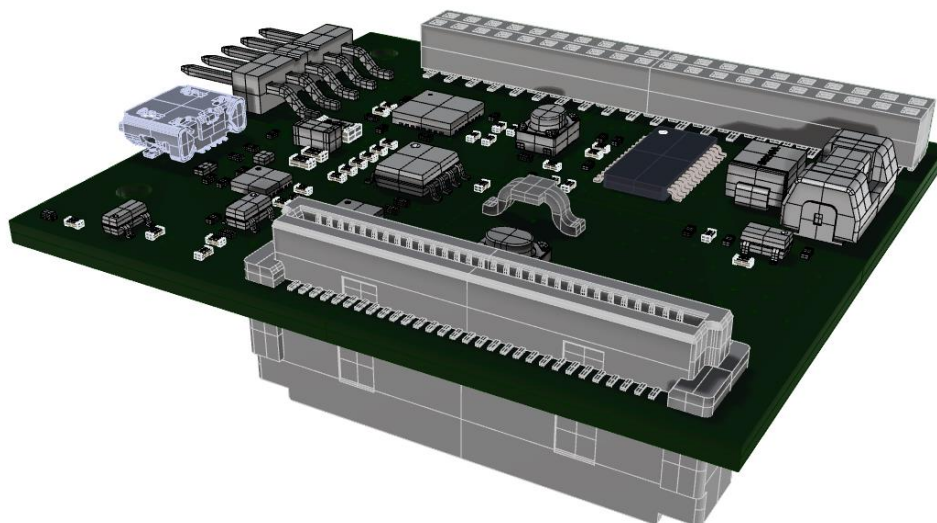
Baud rate: **115200**
Data: **8bit**
Parity: **none**
Stop: **1bit**
Flow control: **none**

.7 SCHEMATICS





.8 MECHANICAL DIMENSION



Dimensions: L x W x H = **55.27mm x 43mm x 12.25mm**

.9 NOTES

ARROW ELECTRONICS

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