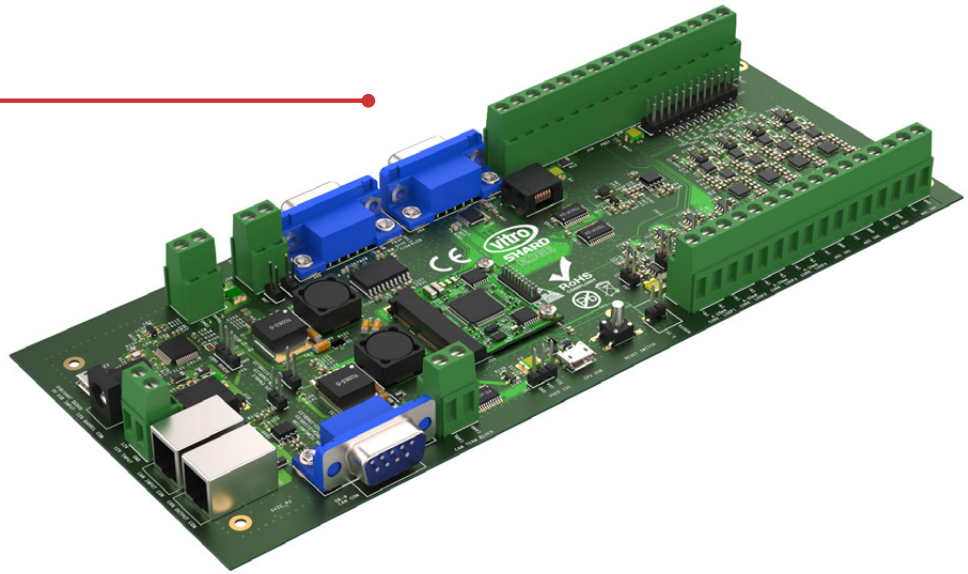
SHARD EDGE



KEY FEATURES

Power Input

- 12V power input (DC barrel Connector, Terminal block, RJ9 Connector)
- 5V power input (USB Debug connector)
- Input power reverse polarity protection
- Input power Filtering

Power Output

- 12V power output (RJ-9 Output Connector)
- 5V power output (Terminal Block)
- 3.3V Power output (Terminal Block)
- Output power reverse polarity protection
- Output power overcurrent Protection

Digital interfaces

- RS232
- RS485
- CAN
- I2C (3.3V standard)
- UART (3.3V Standard)
- SPI (3.3V standard)
- 10 GPIOs available on pin header (function switchable
- USB-OTG interface

General Purpose Ios Available for User

- 10x GPIO available on 2.54mm pin header

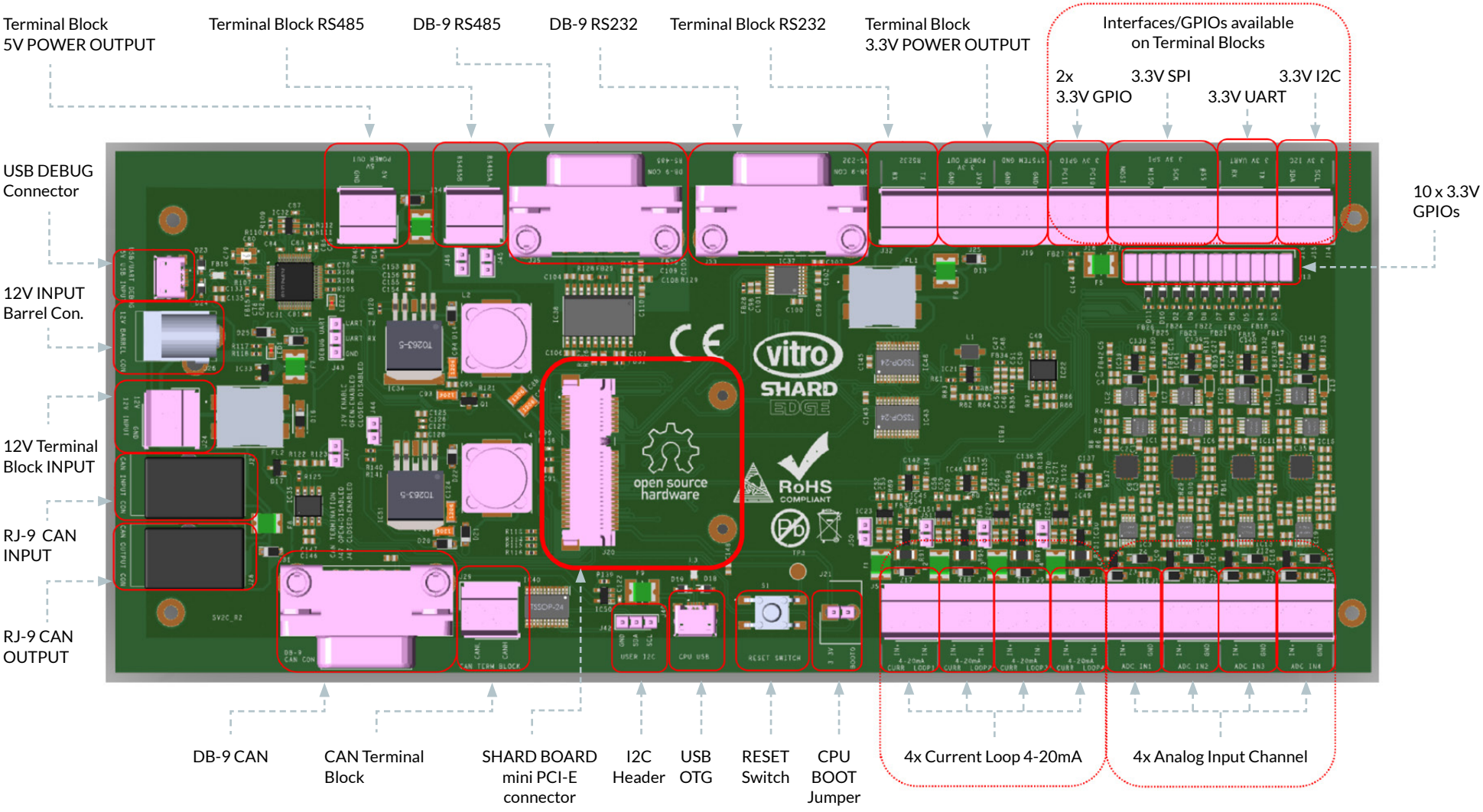
Analog inputs

- 4x analog input channel (0-30V capable input - with input voltage range selection between 0-5V, 0-12, 0-20, 0-30, 0-36)
- 4x current loop channels (4-20mA current measurement)

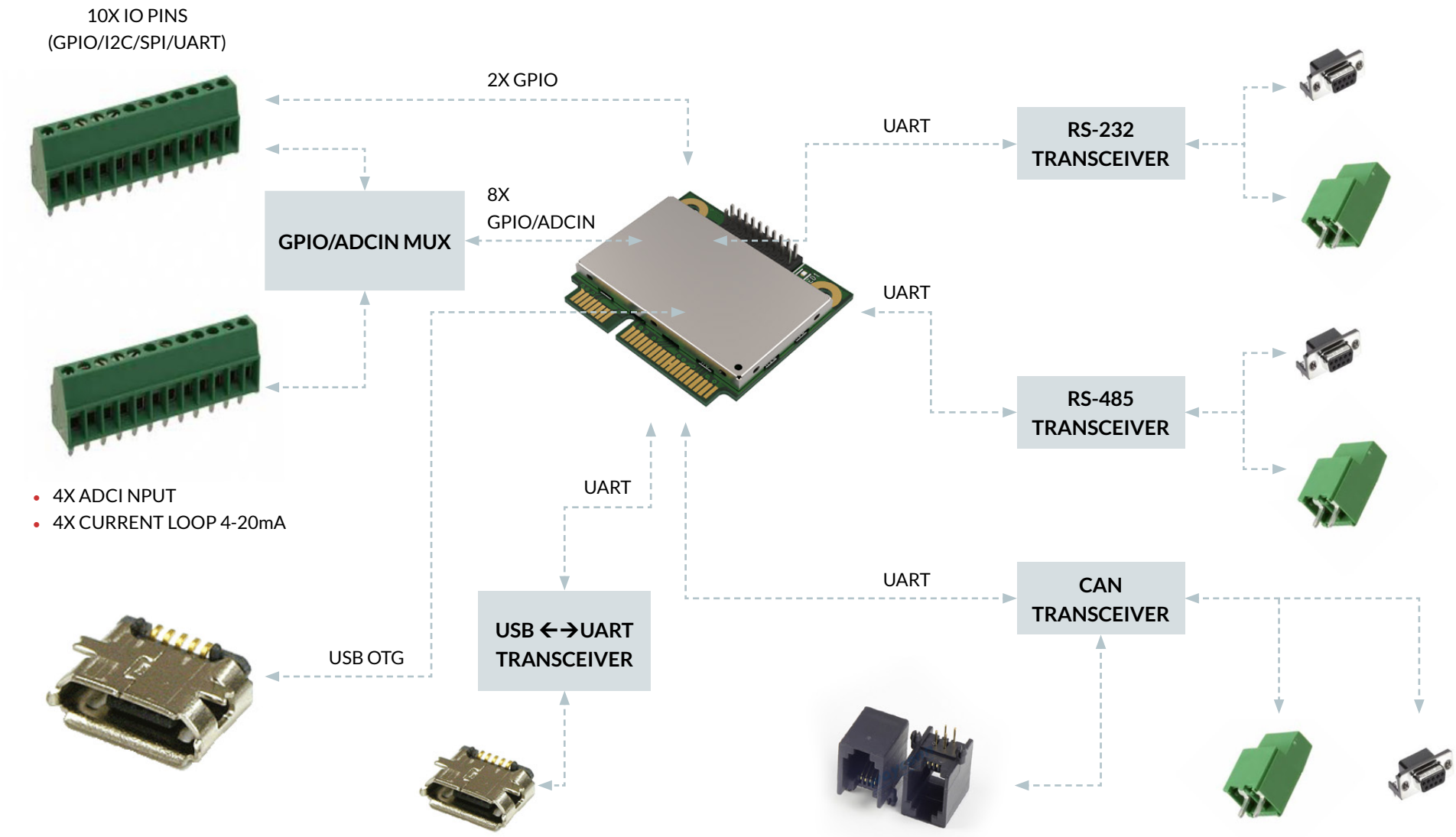
System Reset Tact switch

Connectors

- Mini-PCI-E type connector
- Terminal blocks for reliable wires connection
- DB9 connectors for popular interfaces (RS-232, RS485, CAN)
- RJ9 INPUT/OUTPUT connectors for daisychaining
- USB micro connector for Debug
- USB OTG connector



SHARD EDGE IOS CONNECTIVITY



SHARD EDGE POWER SUPPLY CONNECTIONS

5V

12V

12V

12V

PSU SECTION

- OVERVOLTAGE PROTECTION
- INPUT STAGE FILTERING
- REVERSE POLARITY PROTECTION
- VOLTAGE REGULATION

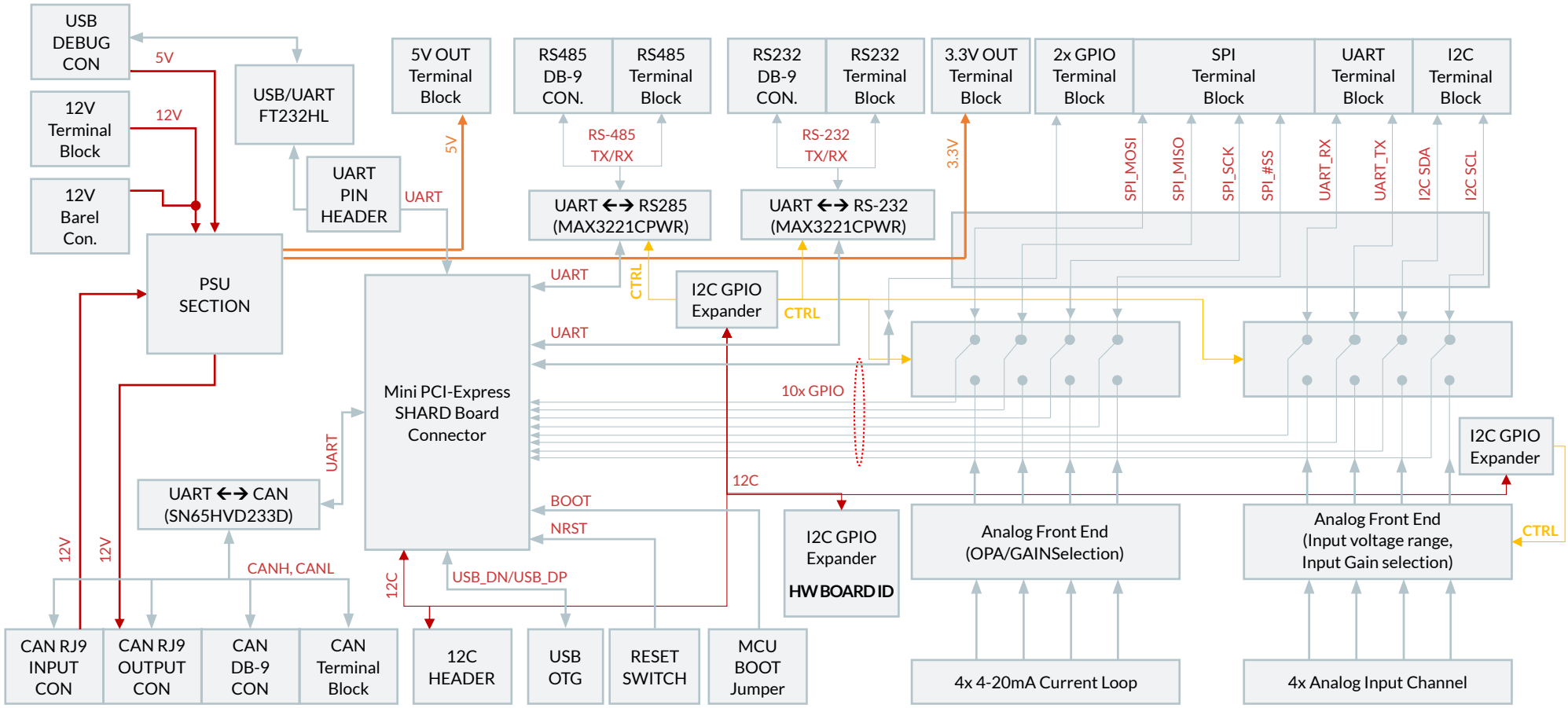
5V OUTPUT

3.3V OUTPUT

5V OTG VBUS

12V OUTPUT

SHARD EDGE BLOCK DIAGRAM



SHARD EDGE SPECIFICATIONS (ASSUMING THAT SHARD V2 IS PRESENT IN MINIPCIE SLOT)

Processor	**ARM® Cortex®-M4 STM32L4**
Processor Speed	80MHz
CPU Memory	1MB (1M x 8) FLASH
Security IC	ATECC508A-MAHDA-T
USB OTG	1
CAN BUS	RJ-11, DB-9 and Industrial Screw Terminals
RS-485	DB-9 and Industrial Screw Terminals
RS-232	DB-9 and Industrial Screw Terminals
Status LEDs	2
I/O	RESET button
	10X IO PINS (GPIO/I2C/SPI/UART)
	3 pin uart Header
	3pin I2C header
	4x 4-20mA current loop inputs
	4x 0-30V ADC inputs
Power Input	12V DC@1A or 5V DC @ 0.5A (micro USB connector)
Temperature Range	Commercial: 0° C to 85° C
	Industrial: -40° C to 100° C (optional)

SHARD V2 SPECIFICATIONS

Processor	**ARM® Cortex®-M4 STM32L4**
Processor Speed	80MHz
CPU Memory	1MB (1M x 8) FLASH
Security IC	ATECC508A-MAHDA-T
USB OTG	1
UART Interfaces	1x dedicated for RS-485 connection on carrier card
	1x dedicated for RS-232 connectionon carrier card
	1x dedicated for Debug interface on carrier card
	1x dedicated for user usage (switchable UART/ADCIN)
SPI Interface	1 x dedicated for user usage (switchable SPI/ADCIN)
I2C Interface	1x dedicated for user usage (switchable I2C/ADCIN)
	1x dedicated for internal usage
Status LEDs	1
I/O	10X GPIO PINS (multifunction pins: GPIO/I2C/SPI/UART/ADC)
Power Input	3.3V DC via miniPCIE slot
Temperature Range	Commercial: 0° C to 85° C
	Industrial: -40° C to 100° C (optional)
Mechanicals / board size	Standard Half size mini-PCIE board size