**Dawn VME Products** ®

*Another Performance Design from the Team at Dawn*

# USB Multi-interface Adapter Board for SOSA Systems

## The Problem:

VPX cards typically have 1x RS-232 port for Management / configuration setup.

VPX cards hosting FPGAs or other programmable devices also have at least 1x JTAG port.

SOSA standard defines specific pin out definitions for a limited number of D38999 class connectors, and all SOSA connectors defined in the Technical standard have no more than 1x USB port, 1x RS-232 port, no JTAG ports.

1. How does one configure VPX systems for SOSA with multiple VPX cards having more than 2+ RS-232 ports and/or 2+ JTAG ports?

2. How Does one interface with I2C or SPI devices or sensors that do not support the VITA46.11 (IPMI)?

## The Solution:

Connect all these RS-232 / JTAG / I2C / SPI ports to a Dawn 06-1020853 USB 2.0 multi-interface adapter card, and combine all these ports (RS-232 / JTAG / I2C / SPI ) into a single USB access interface which is compatible with SOSA D38999 connector pinout standards.

No more need for a Non-SOSA standard connector with 2+ RS-232 / JTAG / other ports for front panel access to internal VPX card system configuration.

Have more than 8x RS-232 / JTAG / other interface ports, no problem, connect multiple 853 via built in USB expansion port to additional port groups (8 interface per 853 card).

### Technical spec:

Voltage: +3.3V

Current: 300mA typical

80mA Idle

Size: L/W/H: 2.5" x 1.7" x 0.5"

-40°C to 85°C industrial operating temperature range.

Additional stacking options

### Additional info:

*RS232/RS422/RS485 UART Transfer Data Rate up to 12Mbaud. (RS232 Data Rate limited by external level shifter).

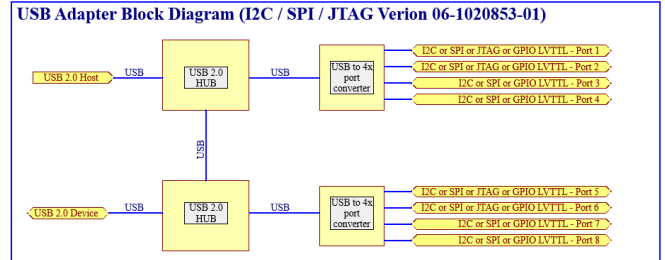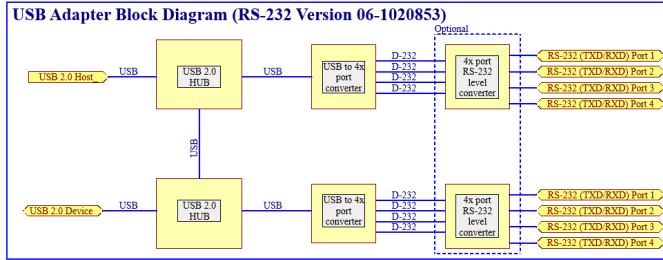*RTS/CTS available with external Level translator.

* Up to 2 ports configurable for RS-485 contact factory (Auto-transmit enable control for RS485 serial applications using TXDEN)

* UART Interface supports 7/8 bit data, 1/2 stop bits, and Odd/Even/Mark/Space/No Parity

* UHCI/OHCI/EHCI host controller compatible.

* USB Bulk data transfer mode (512 byte packets in High Speed mode).

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The Dawn 06-1020853 USB multi-interface adapter card is a compact unit measuring 2.5" x 1.7" with a 50 pin Samtec SFM connector and 2-56 mounting hardware for rugged host PCB connection.
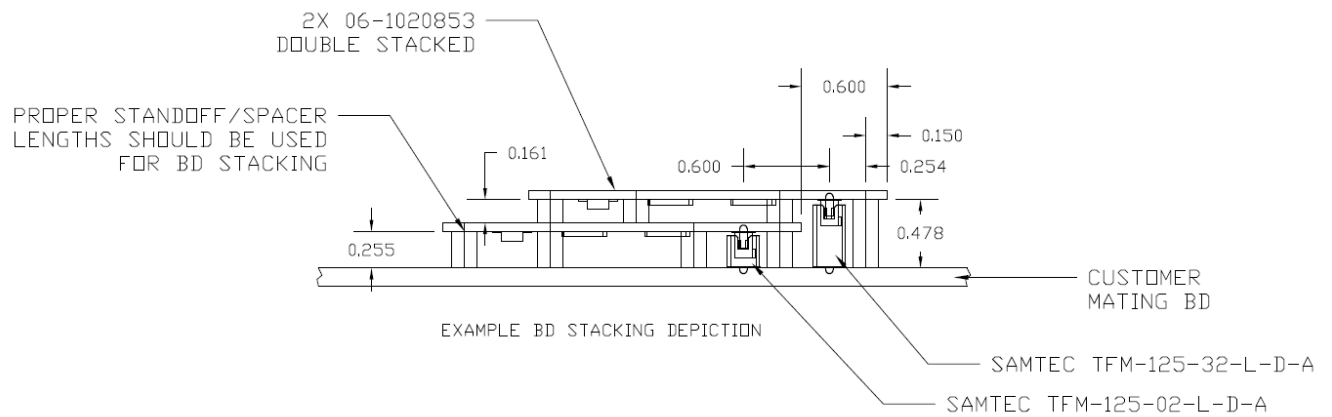
USB Adapter Block Diagram (RS-232 Version 06-1020853)

USB Adapter Block Diagram (I2C / SPI / JTAG Verion 06-1020853-01)

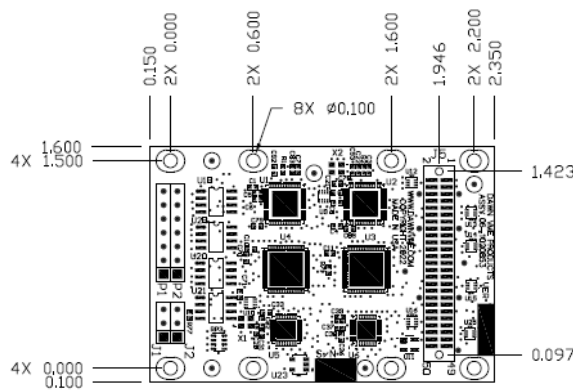## Order Options:

**06-1020853 = RS-232 only version**

**O61020853-01 = i2C / SPI / JTAG / GPIO version**

**O6-1020854 = Host Test PCB for docking 853 card.**

**Contact Factory for custom mixed port options**

2X 06-1020853
DOUBLE STACKED

PROPER STANDOFF/SPACER LENGTHS SHOULD BE USED FOR BD STACKING

0.600

0.150

0.161

0.600

0.254

0.255

0.478

EXAMPLE BD STACKING DEPICTION

CUSTOMER MATING BD

SAMTEC TFM-125-32-L-D-A

SAMTEC TFM-125-02-L-D-A

# Board size and mounting hole location

0.150
2X 0.000
2X 0.600
2X 1.600
1.946
2X 2.200
2.350

8X Ø0.100

4X 1.600
1.500

1.423

4X 0.000
0.100

0.097

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**<u>Optional 06-1020854 Host card for testing 06-1020853 functions in lab applications.</u>**

**06-1020853**
**USB to 8x RS-232 + 1x USB**
**Daughter card**
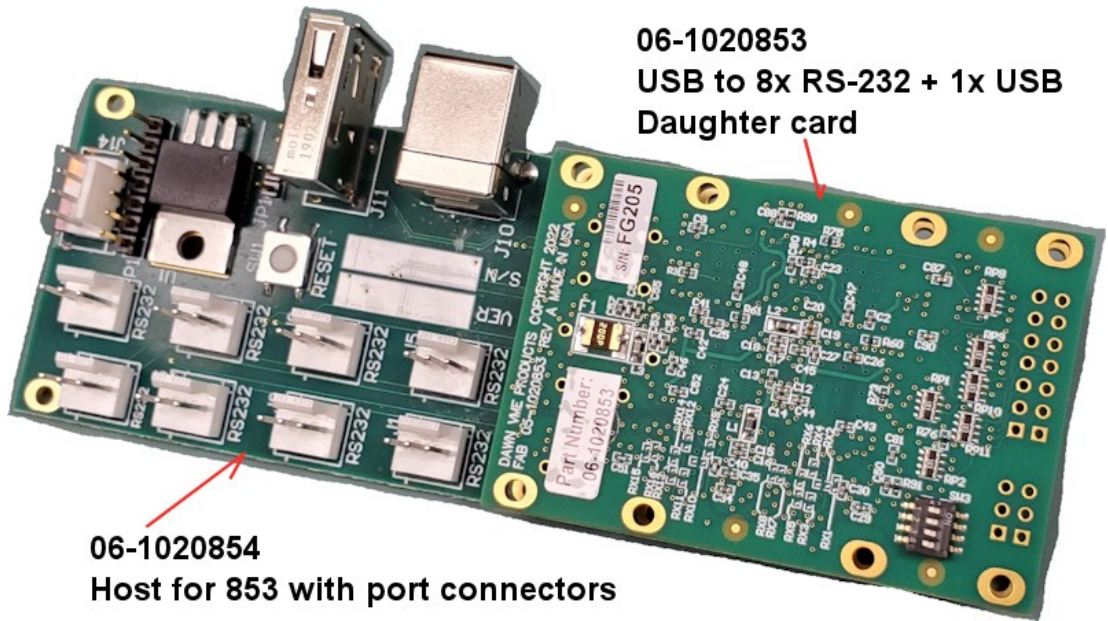
**06-1020854**
**Host for 853 with port connectors**

Pinout same for
J1-J8
RXD
TXD
GND

RESET (853)

P1 - Pin number / Function
1. = RESET
2. = GND
3. PWREN# Port 8
4. GPIO7 Port 8
5. PWREN# Port 4
6. GPIO7 Port 4
(Pin 3-6 = Special Options
Contact Factory)

GND (input power)

+3.3V (input power)

USB Type B
Host PC / SBC

USB Type A
Device port
(Connect to next 854 for additional ports or other USB device)