



Description

The QBPU is the newest and most capable Bus Protection Unit offered by Silver Engineering, Inc. The "BUS" refers to a spacecraft or payload's power distribution BUS. The BPU is designed to provide voltage and current protection to critical and expensive spacecraft/payload equipment during test and integration activities. Typically during test and integration, spacecraft are powered by commercial rack mounted power supplies that are connected to an AC power source. The supplies are configured and controlled via Ethernet or manually. A software glitch or power supply failure could attempt to supply out-of-range voltage to the spacecraft. Also, a fault condition on the spacecraft could load down the power BUS and draw excessive current. The QBPU monitors these conditions and disconnects the power source from the spacecraft or payload. The QBPU has adjustable over/under voltage and separate positive/negative over current settings. The separate positive (source) and negative (sink) over current settings allow for different current thresholds when the BPU is connected to a battery simulator.

The QBPU is very programmable and can be customized for your specific operation.

Features

- Four Isolated Channels, each 50VDC, +/- 40 Amp
- Adjustable BUS Over Voltage Protection
- Adjustable BUS Under Voltage Protection
- Adjustable Positive BUS Over Current Protection
- Adjustable Negative BUS Over Current Protection
- Enable/Disable of Under Voltage Detection
- Auto Enable for Under Voltage Detection
- Standalone box, half rack width, dual rack mount options
- Rackmount kits for single unit or dual units
- Programmable filtering time for trip conditions
- No Trim Pots, all adjustments are via high resolution touch screen with automatic storage of settings
- Low ohms switched path, typical 0.005 Ohms
- All fault conditions are latched and displayed
- Transient Voltage Suppressors (TVS) on BUS
- Amp Kickback Diode across load
- Front Panel Tip Jacks for BUS In/Out measurements with 5.1K source resistance
- Dry contact for each channel indicating BUS on plus a dry contact that indicates any channel is on.
- Turn on rise time 1usec typical.
- Channel Grouping and selectable channel interaction.
- External/Remote Bus off for convenience or support for Bus off panic switch
- Monitoring for reverse voltage on supply side.
- Scope Channel recording and dump. Each channel's Vin, Vout, Iout are written into an internal memory which can be examined after a trip event occurs.
- CRC calculated on settings and displayed on main screen for quick verification of setup
- On Screen labeling of channels.
- Programmable Pulse outputs for ordnance or timed out applications
- Ethernet interface for remote command, status, and scope capture dumping

Specifications

Mechanical (desktop)
 +5V Input Power

Height 5.22", Width 8.0", Depth 10.1", 9.0 lbs
 +5VDC @ 4A. 2.5 x 5.5 x 9.5mm center contact is positive
 Fuse 5A/250V 5x20mm Slow Blow
 Unit supplied with external power supply 120VAC to 5VDC.

BUS INPUT / BUS OUTPUT

+/- 50VDC, +/- 40 Amp DC (each channel). -1 CH Cards Positive Voltage, -2 CH Cards Neg Voltage

J1 Channel Card
 BUS Input (power supply)

Positronic Scorpion Family, SP6N5YNYN54M0TB9A2
 Male 8 position. Mating connector with pins and backshell supplied

J2 Channel Card
 BUS Output (load)

Positronic Scorpion Family, SP6N5YNYN54S0TB9A2
 Female 8 position. Mating connector with pins and backshell supplied

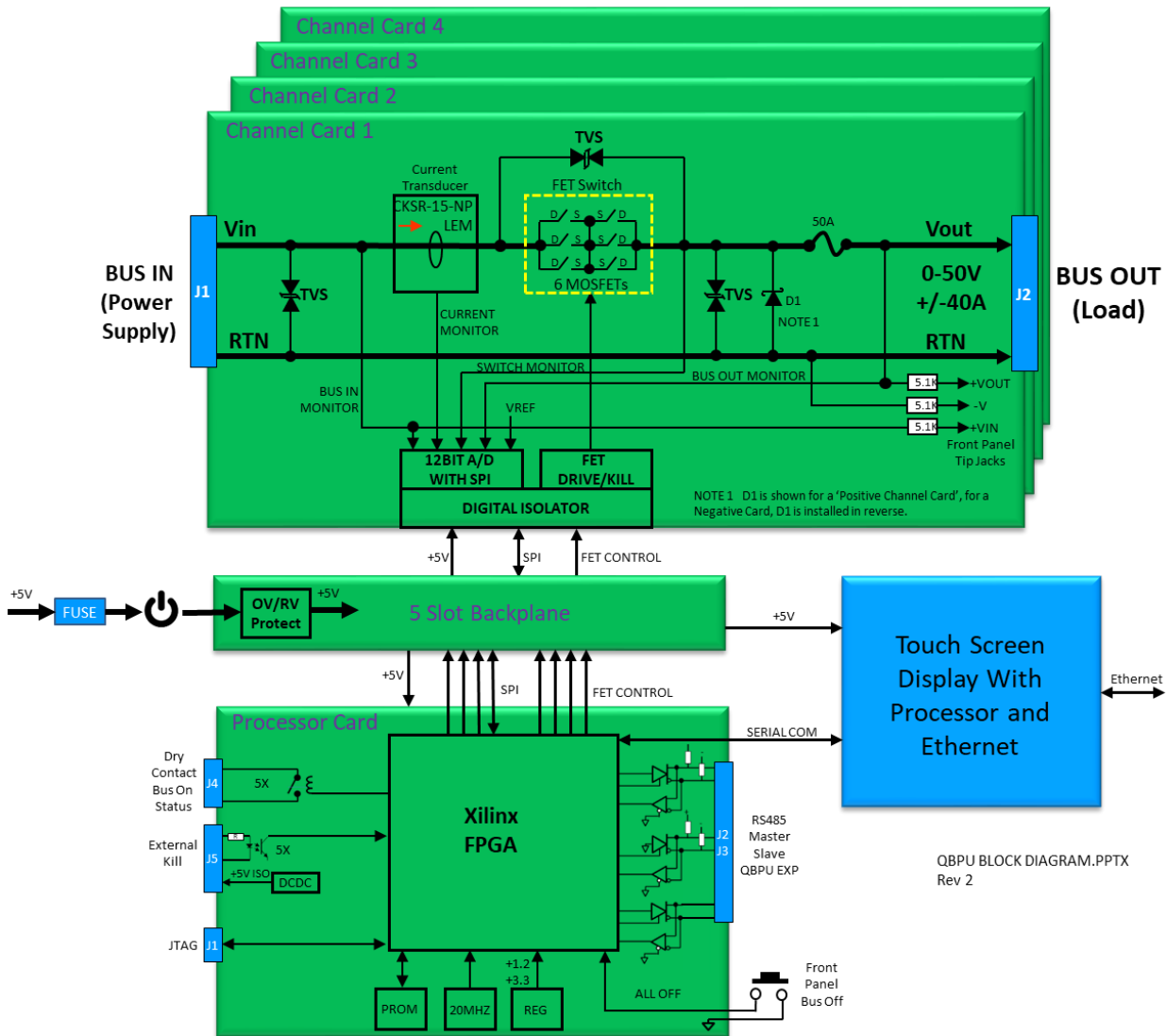
J1 Processor Card
 J2/J3 Processor Card
 J4 Processor Card
 J5 Processor Card

JTAG, 14Pin Box
 9D Female, Master Slave, Identical Pinout for ease of daisy chain connection
 15HDD Male, 5 Dry Relay Contacts, Ch 1-4, Any On
 15HDD Female, 5 External Bus Kills, Ch 1-4, All Kill, connects to opto coupler diode with 5v
 Isolated power output

LAN

Ethernet, RJ45

Note: Specification subject to change without notice.
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QBPU BLOCK DIAGRAM

Photo Gallery



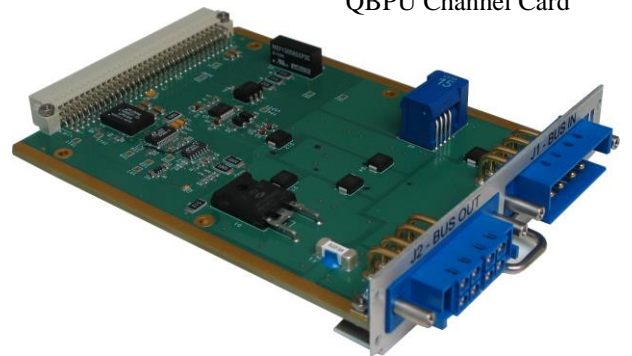
Single Rackmount QBPU with custom I/O panel



Dual QBPU Rackmount



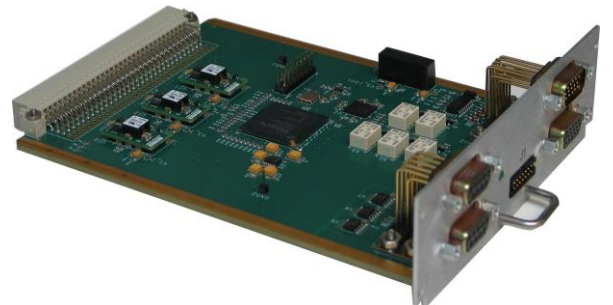
QBPU Benchtop with feet



QBPU Channel Card



5V Power Supply



QBPU Processor Card