

DESCRIPTION:

BPB-1 BBus Power Booster
 LBPN: 9080.50050

REVISIONS / UPDATES:

Ver	Date	Author	Changes Summary
1.0	02/18/2011	MK	Initial Document approved for customer release



OVERVIEW

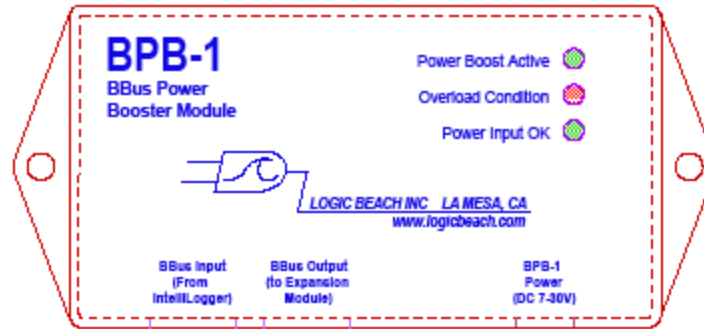
The BBus is a daisy-chain serial data link used for communication between the IntelliLogger System Base and one or more I/O expansion Interface Module(s). In addition to communication, the BBus also provides a limited amount of power for Interface Modules such as the ILIM-7 and ILIM-2. The IntelliLogger's BBus port can provide approximately 300mA of current at 10V. Under normal circumstances this is enough to power approximately 5 additional Interface Modules. Length of the BBus cables (ie CAT 5 Ethernet cabling), number of expansion modules, power requirements of modules, and connection quality are all factors that limit the size of an IntelliLogger BBus network.

The BPB-1, BBus Power Booster is an optional device that extends the BBus capabilities by injecting additional power for downstream (ie further away from the IntelliLogger) modules allowing an IntelliLogger BBus network to expand to include to greater than 5 expansion modules and/or longer distances.

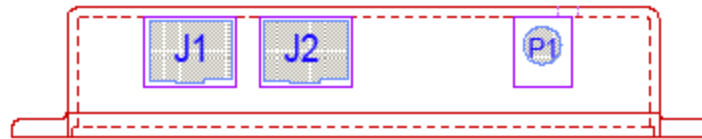
The BPB-1 has two BBus connectors (input and output) and is daisy-chained into a BBus network just like any Interface Module with the exception that unlike expansion modules, BBus cables must be plugged into the appropriate BBus port. The BBus port labeled Input is to be connected to expansion modules and/or cabling that originates at the IntelliLogger (ie "upstream"). The BBus port labeled Output connects to cabling and expansion modules further away from the IntelliLogger (ie "downstream").

The BPB-1 gets its power from a plug-in wall adapter or external battery source; it provides approximately 750mA at 10V for additional downstream devices. Installing a BPB-1 in-line with other Interface Modules on the BBus will increase the maximum possible cable length, and increase the number of additional devices that can be connected to the BBus at any one time.

Top view



Side View



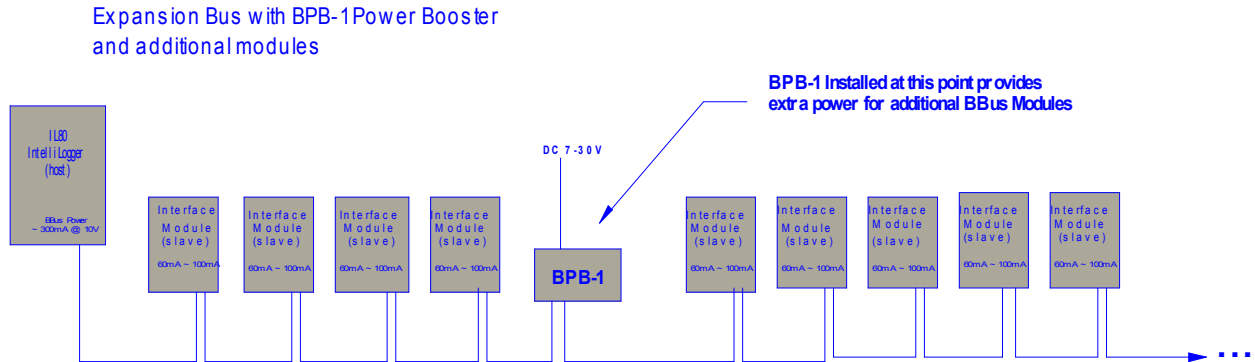
DESCRIPTION OF CONNECTORS AND LEDs

CONNECTOR	TYPE	NOTES
P1	2.1, 5.5mm DC Power input	Accepts DC power 7-30V
J1	RJ45 Ethernet Jack	BBus Input (From IntelliLogger)
J2	RJ45 Ethernet Jack	BBus Output (to Expansion Module)

LED INDICATORS	COLOR	NOTES
Power Input OK	GREEN	Internal 5V-power supply ready
Overload Condition	RED	BBus Voltage is below operational minimums (< 9V)
Power Boost Active	GREEN	BPB-1 is supplying 10V to BBus downstream

INSTALLATION

- 1) Connect the BBus cable from the IntelliLogger or upstream modules to connector J1 (“BBus Input”)
- 2) Connect the downstream BBus cabling and expansion modules to connector J2 (“BBus Output”)
- 3) Connect a 7-30V DC power source to P1 (2.1, 5.5mm DC power jack)
- 4) Apply power on the BPB-1 to power-up Interface Modules installed past the BPB-1.



BPB-1 INSTALLATION NOTES

Pay attention when installing the BBus cables! The BPB-1 uses specific connectors for upstream and downstream BBus connections. The additional 10V BBus power is only provided at the downstream connector (J2). *Cables installed “backwards” will stop the BBus communication and may damage your system.*

Interface Modules installed downstream from the BPB-1 will not communicate with the Host IntelliLogger unless the BPB-1 is powered “on” and the downstream modules are all connected to the BPB-1. Downstream devices may also stop logging data if the BPB-1 loses power momentarily or if BBus voltage falls below 9V (See “Overcurrent LED”).

The BPB-1 only adds power to the BBus. All BBus control and data lines pass directly through the BPB-1 and are not amplified, read, or changed in any way.

Multiple BPB-1 units can be installed onto the expansion bus, but the overall maximum cable length will be determined by distance and signal-quality of the Data and Control lines.

The total distance capable for a BBus network depends on many factors including the inter-module cable lengths, electrical environment, number of modules, type of module, etc. For this reason, it is not possible to specify an exact maximum BBus network length however for quick reference, a BBus network with 5 modules evenly spaced and powered from the IntelliLogger directly can typically span a distance of approximately 100 feet. With the addition of a BPB-1, this distance can typically be doubled.



BPB-1 POWER

BPB-1 power boosters can be installed at any point in the Expansion Bus. The recommended starting location is after every 4th or 5th Interface Module on the BBus. The optimal placement may be closer or farther apart depending on the total distance and number of modules connected.

Each BPB-1 can safely provide up to 750mA of Bus power at 10V. Most Interface Modules (such as the ILIM-7 and ILIM-2) will typically consume between 60mA and 100mA of power. The maximum number of Interface modules that can be driven by a single BPB-1 will depend on the length of cable between each module, and the number and type of sensors connected at each module.

With proper power to support all additional devices, the IntelliLogger can address a maximum of 16 separate Interface Modules on the BBus.

OVERCURRENT LED

The BPB-1 has a red LED on the top cover marked "Overload Condition." This LED will turn-on whenever the BBus power boost is enabled but voltage falls below 9V. In most cases, this simply means there are too many devices on the end of the BBus, but it could also mean that there is a short-circuit condition somewhere downstream.

If the red "Overload" LED is on, remove power from the BPB-1 and check all devices and connections beyond the BPB-1. Troubleshoot your system by removing Interface Modules or cable lengths from the BBus and re-starting the System. The Red LED will turn-off when the excessive load has been removed from the Bus. Under normal operating conditions, the BPB-1 should be able to maintain a BBus voltage above 9 volts, and the red "Overload Condition" LED should always be off.