

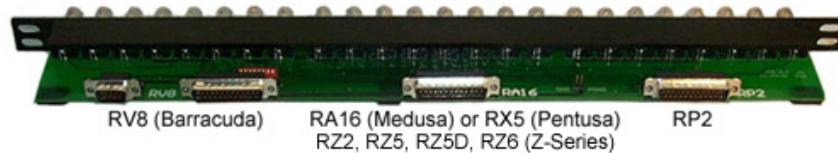
PP16 Patch Panel



The PP16 Patch Panel provides convenient BNC connections for easy access to the digital and analog inputs and outputs of a variety of System 3 devices. Originally designed for use with the RP2 Real-time Processor, RA16 Medusa Base Station, and RV8 Barracuda; the PP16 back edge is equipped with a nine pin and three 25-pin connectors, which have been marked with the corresponding device label to minimize the possibility of miswiring.

To connect the PP16 to a device:

Connect the male end of the 9- or 25-pin ribbon cable to the desired module and connect the female end to the correct PP16 input according to the following table.



PP16 Device Connectors

Connector:	RV8 9-Pin	RV8 25-Pin	RA16 25 Pin		RP2 25 Pin
Devices:	RV8 Optional I/O*	RV8 Digital I/O	RA16BA RA8GA SA8 RX5 RX6 RX7 RX8	RZ2 RZ6 RZ5	RP2 RP2.1 PM2R

*GND Jumper: When using the PP16 and the RV8 Barracuda, the jumper located on the PP16 connects the analog ground of the DB9 connector to the device ground on the RV8.

*DIP-Switch: The DIP-switches located on the PP16 is used to control the input of either digital signals or the output of analog signals on the RV8. When the DIP switches are in the ON position, digital input bits 8-15 are connected and will be available on the PP16 BNCs A1-A8. Do not attempt to output any analog signals from the RV8 while the DIP-switches are in the ON position. When the DIP-switches are in the OFF position the analog outputs are available on the PP16 BNCs A1-A8.

Mapping the Inputs and Outputs for Each Device

Each device has a unique input and output configuration. The table below shows the configuration of the BNC connectors.

Device & Connector	A1-A8	B1-B8	C1-C8
RP2, RP2.1 Digital I/O Connector	Digital Inputs Channels 1-8	Digital Outputs Channels 1-8	C1=Trigger C2=Volt out (3.3v)
RA16BA Analog/Digital I/O Connector	Analog Outputs Channels 1-8	Digital Outputs Channels 0-7	Digital Outputs Channels 8-15
RV8, RV8D Digital I/O Connector	Digital Inputs Channels 8-15	Digital Outputs Channels 0-7	Digital Inputs Channels 0-7
RV8D* Optional I/O Connector	Analog Outputs Channels 1-8	Not Used	Not Used
RA8GA Analog I/O Connector	Analog Input Channels 1-8	Not Used	Not Used
PM2R Signal Out Connector	Analog Output Channels 0-7	Analog Output Channels 8-15	Not Used
SA8 Power Outputs Connector	Analog Output Channels 1-8	Analog Output Signal and Ground: Channels 1-4	Analog Output Signal and Ground: Channels 5-8

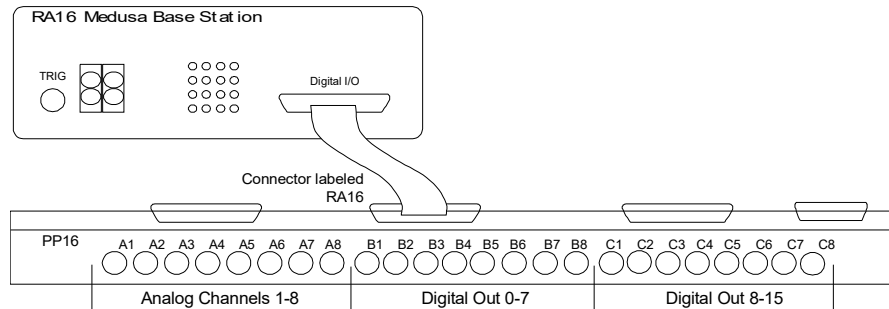
*To use the RV8D Optional I/O analog output connector, move all the DIP switch positions to the OFF setting on the PP16. Once the switches are in this position digital inputs 8-15 are not accessible. Do NOT attempt to output analog signals when the switches are in the ON position.

The PP16 can also be used with the RX and RZ devices, however, the PP24 is recommended.

Device & Connector	A1-A8	B1-B8	C1-C8
RX5, RX6, RX7, RX8 Digital I/O Connector	Bit Addressable Digital I/O Channels 0-7	Digital I/O, Byte A Channels 0-7	Digital I/O, Byte B Channels 8-15
RX5, RX7 Multi I/O Connector	Analog Outputs A2, A4, A6, A8 = Channels 1-4 A1, A3, A5, A7 = Not Used	Digital I/O, Byte C Channels 16-23	Digital I/O, Byte D Channels 24-31
RX8 Analog I/O Connector	Analog I/O Block A Channels 1-8	Analog I/O Block B Channels 9-16	Analog Output Block C Channels 17-24
RZ2 Digital I/O Connector	Bit Addressable Digital I/O, Port C Channels 0-7	Digital I/O, Port A Channels 0-7	Digital I/O, Port B Channels 0-7
RZ5, RZ5D, RZ6 Digital I/O Connector	Bit Addressable Digital I/O, Byte C Channels 0-7	Digital I/O, Byte A Channels 0-7	Digital I/O , Byte B Channels 0-7
RZ2 Analog I/O Connector	Not used	Analog Inputs Channels 1-8	Analog Outputs Channels 9-16
RZ5, RZ5D Analog I/O Connector	Not used	Analog Inputs Channels 1-4	Analog Outputs Channels 9-12

Mapping RA16BA I/O

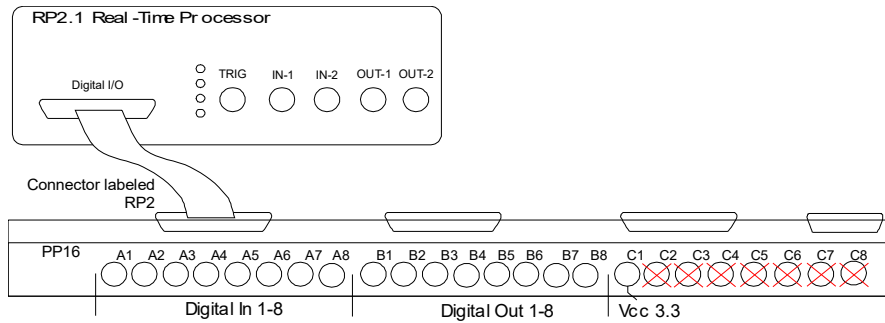
The diagram below maps the RA16BA Digital I/O connection to the PP16.



RA18BA to PP16 Connection Diagram

Mapping RP2/RP2.1 I/O

The diagram below maps the RP2 Digital I/O connection to the PP16. The last seven BNC connectors are not used. BNC C1 maps to VCC 3.3.



RP2.1 to PP16 Connection Diagram

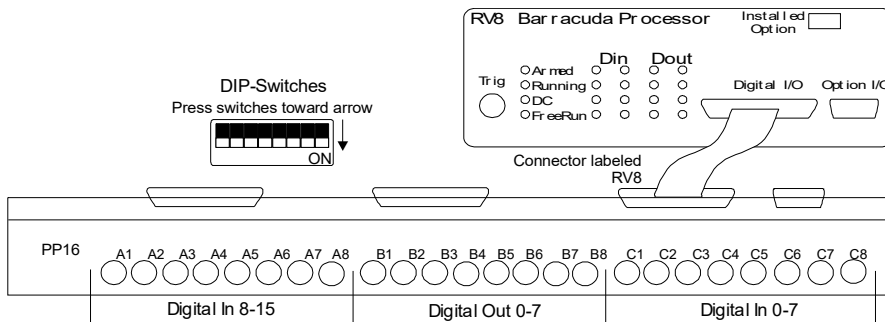
Mapping RV8 I/O

There are two connectors for the Barracuda on the rear edge of the PP16. The optional analog channels are on the DB9 connector and the digital I/O are on the DB25 connector. The PP16 is configured to accommodate 24 of the 32 inputs, outputs, and channels on the Barracuda, at any given time.

TDT ships a special cable that connects between the DB9 connector and the RV8.

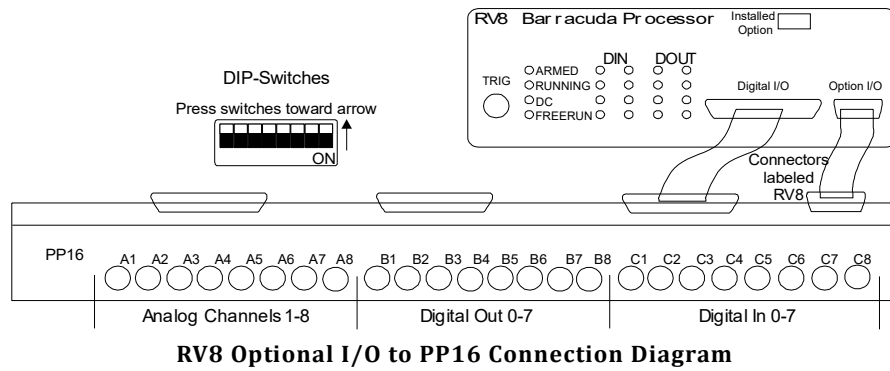
Connect the analog ground on the back of the PP16 to produce adequate signal quality.

The default connection for the Barracuda is shown below. In this format, sixteen digital inputs and eight digital outputs are configured as follows:



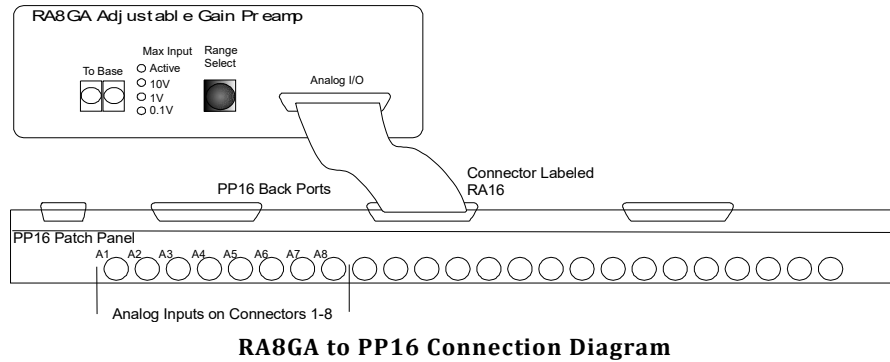
RV8 to PP16 Connection Diagram

The optional connection for the Barracuda is shown below and uses both the DB25 and DB9 cables provided with the PP16. In this format, eight digital inputs, eight digital outputs, and the eight optional analog channels are configured as follows:



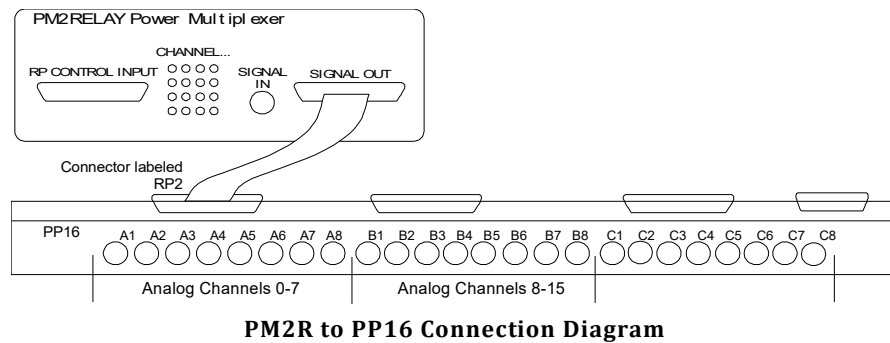
Mapping RA8GA

A PP16 patch panel can be used to simplify connection to the preamplifier's analog inputs. A ribbon cable can be connected from the RA8GA Analog I/O connector to the RA16 connector on the back of the PP16 allowing acquisition of signals via the first eight BNC connectors on the front of the PP16.

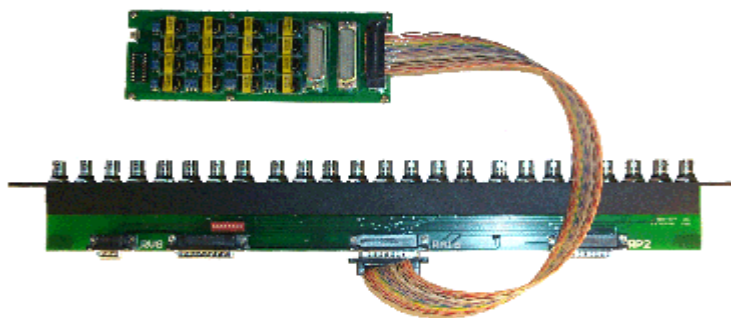


Mapping PM2R I/O

The diagram below maps the PM2R signal out connection to the PP16.



Connect to the ETM1



ETM1 to PP16 Connection

The connector labeled J1 is used to connect the ETM1 to a PP16. Plug one end of a serial DB25 male-female cable into the J1 connector and plug the other end into the RA16 port of the PP16. Channels 1 - 8 and 9 - 16 of the headstages can be accessed through the patch panel BNCs labeled A1-A8 and B1 - B8, respectively. Also, a custom cable can be fabricated to connect the ETM1 (connector J1) to virtually any signal source.