RZ5 Z-Series Processor

This fast fact sheet provides basic reference information for the RZ5 Z-Series Processor and related devices. *See the System 3 Manual for more detailed information.* **Note:** The RZ5 is available with one or two processors.

Connecting the RZ5 to the Preamplifiers
The base station acquires digitized signals from a preamplifier over a fiber optic cable. Both ends of the cable are the same but the two sides of the connector are different. See the illustration to the right to determine the correct way to make the connection.

Front Panel Display
The front panel VFD Screen displays a variety of status indicators. Cycle through the options using the Mode button below the right side of the display. Push and release the button to manually change the display options or push and hold the button for one second then release to automatically cycle through each of the following display options:

Cyc:	percentage of cycle usage
Bus%:	percentage of internal device's bus capacity used
I/O%:	percentage of data transfer capacity used
Opt:	connection (sync) status of amplifiers

The VFD screen may also report system status such as booting status (Reset).

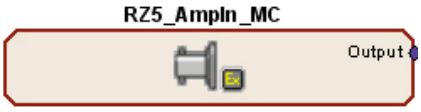
Note: When burning new microcode or if the firmware on the RZ5 is blank, the VFD screen will report a cycle usage of 99% and the processor status lights will flash red.

Pattern	DSP Status
Steady green	Device on
Flash red	DSP cycle usage > 99% or burning microcode

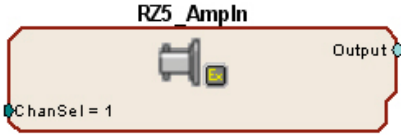
Fiber Optic Input Ports
The RZ5 is equipped with two fiber optic amp input ports. The channel numbers for each port begin at a fixed offset regardless of the number of channels available on the connected device.

Channels are numbered as follows:	AMP-A	*17-32*
	AMP-B	*33-48*

The RZ5_AmpIn_MC and RZ5_AmpIn macros should be used to acquire data from Medusa PreAmps via the RZ5's two amp input ports. The RPvdsEx macros apply appropriate scale factors and offsets auto-matically.



Amp -A-, 16 Chans (1-16)



Onboard Analog I/O
Onboard analog I/O can be accessed using AdcIn and DacOut components.

Channels are numbered as follows:	ADC Inputs	*1-4*
	DAC Outputs	*9-12*

Onboard Monitor Speaker
The speaker output is connected to DacOut channel 9.

For custom circuit design, see the RPvdsEx Manual.

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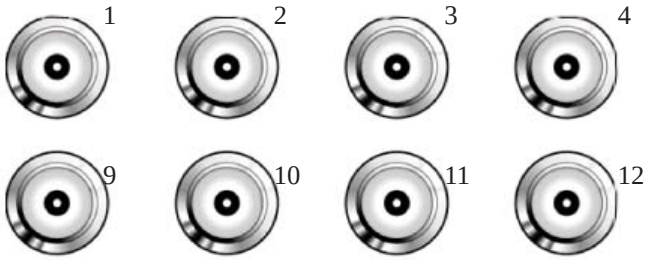
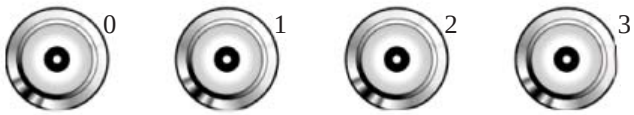
BNC Channel Mapping

Analog Input - ADC Ch 1-4



Analog Output - DAC Ch 9-12

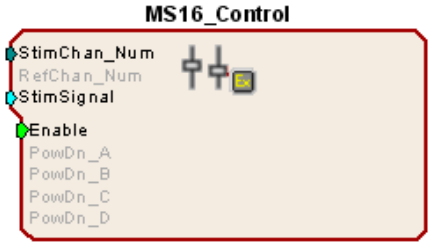


Digital I/O - Byte C, Bits 0-3

See the System 3 Manual for DB25 Analog Input/Output Connector Pinouts.

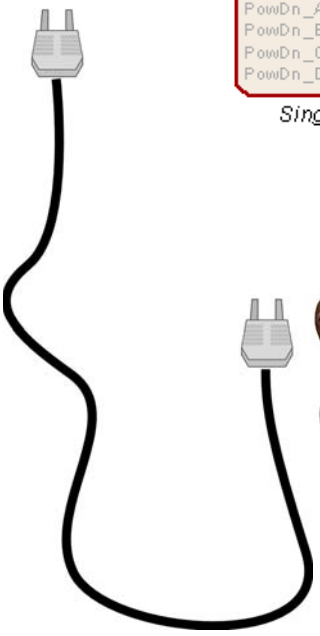
Fiber Optic Output (STIM) Port

The RZ5 output port labeled STIM is used to transfer signal data to the Stimulus Isolator's D/As or to control its 16 word-addressable digital output bits. The MS16_Control macro is used to configure and control the Stimulus Isolator, *see the TDT System 3 Manual for more information.*



Single Ended Stim Mode (RZ5)

To the processor, Stimulator port.



Both ends of the fiber optic connection cable are the same but the two sides of the connector are different. See the illustrations to the left to determine the correct way to make the connection.

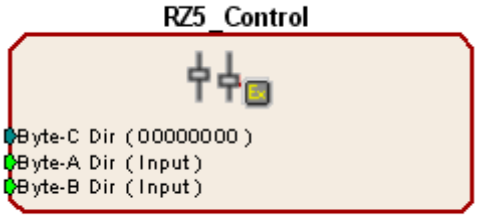
Digital Input/Output

The digital I/O circuits include 24 bits of programmable I/O.

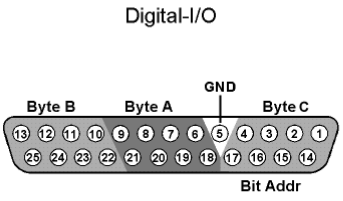
Byte A = bits 0 - 7 (byte addressable)
Byte B = bits 0 - 7 (byte addressable)
Byte C = bits 0 - 7 (bit addressable)

Digital I/O lines are accessed via the 25-pin connector on the front of the RZ5. Four bits of bit addressable I/O are also available from the front panel BNCs.

The data direction for the Digital I/O is configured using the RZ5_Control macro in RPvdsEx, allowing the data direction to be dynamic under circuit control.



DB25 Digital Input/Output Connector Pinouts



Byte B			
Pin	Bit	Pin	Bit
10	1	22	0
11	3	23	2
12	5	24	4
13	7	25	6
Byte A			
Pin	Bit	Pin	Bit
6	1	18	0
7	3	19	2
8	5	20	4
9	7	21	6
Bit Addr Byte C			
Pin	Bit	Pin	Bit
14	1	1	0
15	3	2	2
16	5	3	4
17	7	4	6

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