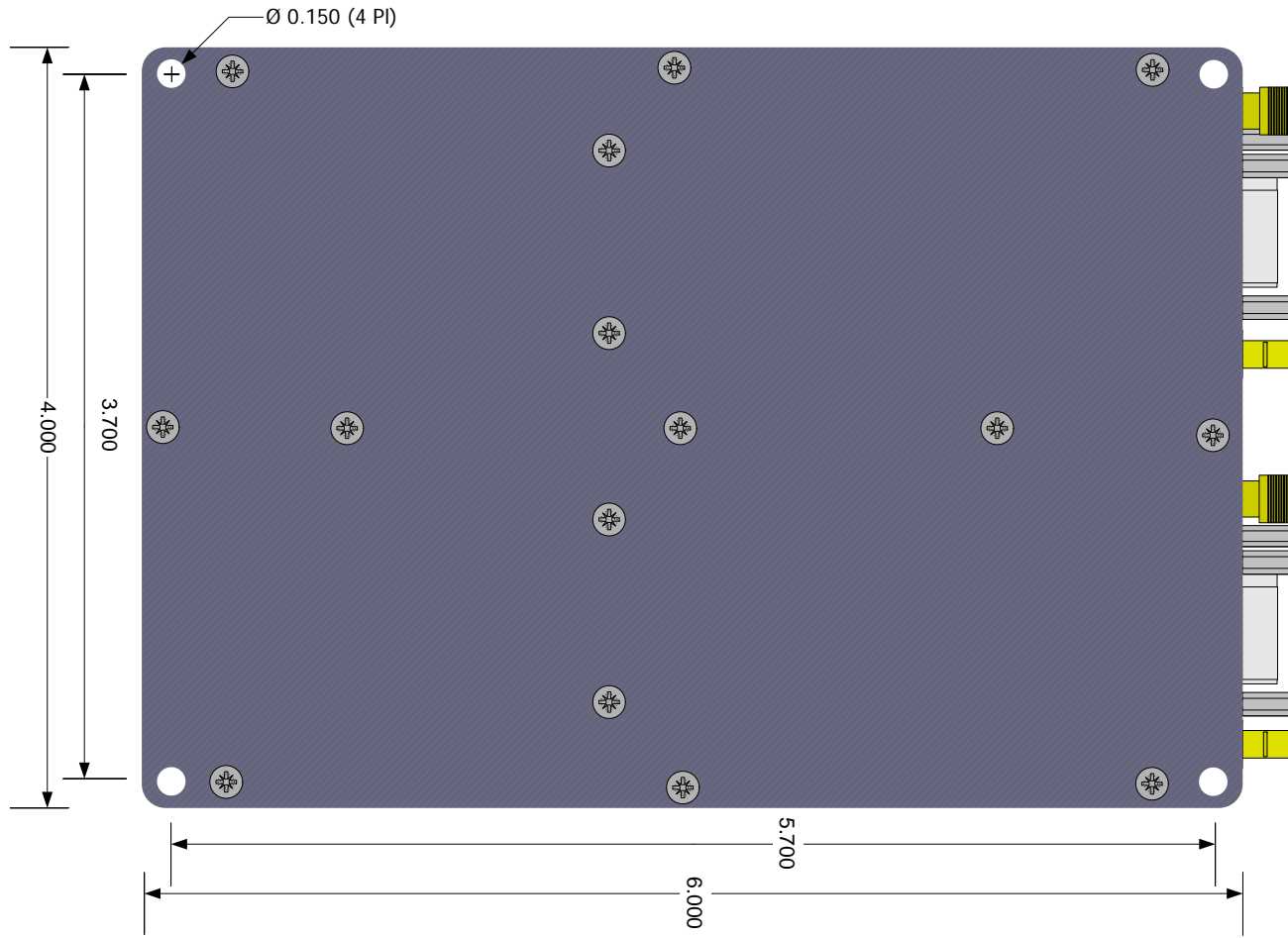


Top View

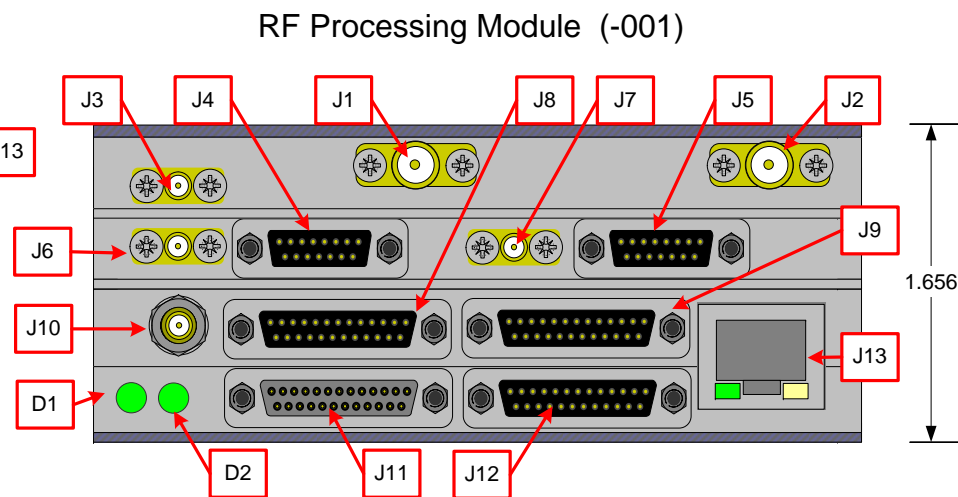
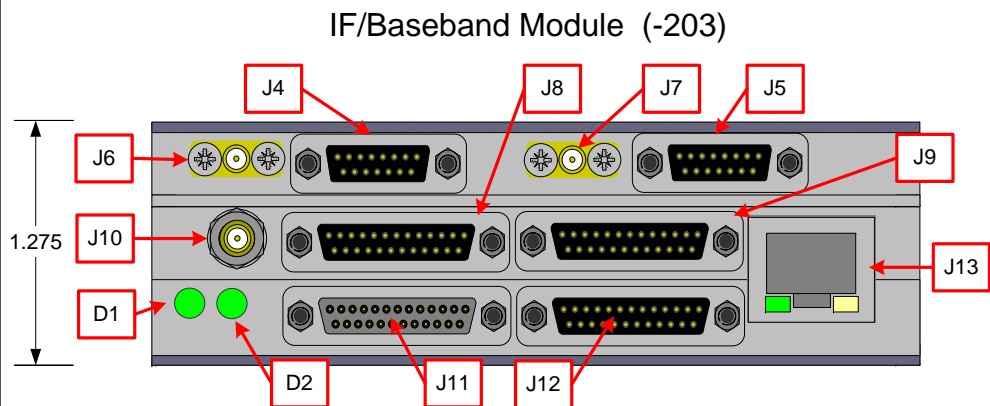
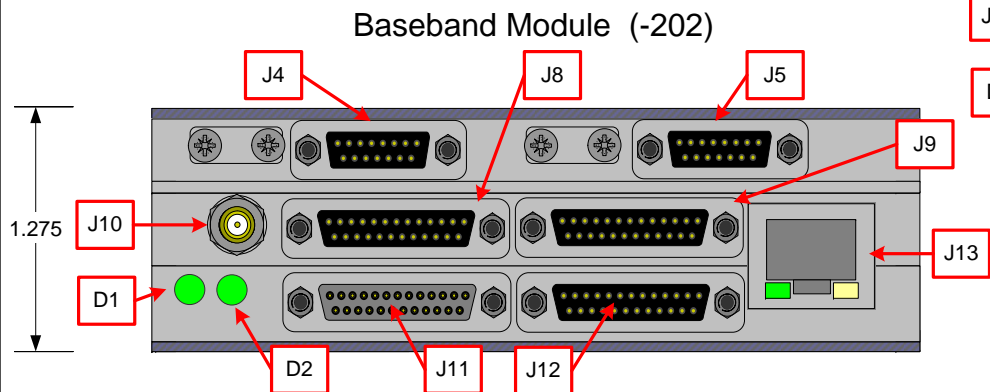
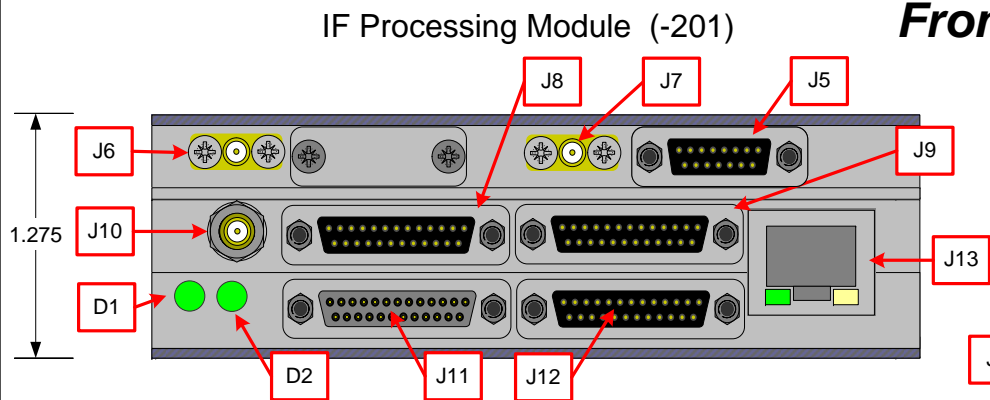


Notes:

- 1.) All dimensions shown are in inches.
- 2.) Tolerances are +/- 0.005 inches.

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Front View



Designator	Style	Signal Description
J1	SMA-F	Channel 1 RF/IF Input
J2	SMA-F	Channel 2 RF/IF Input
J3	SMB-M	10MHz Reference Input/Output
J4	uDSUB15	Channel 1 Analog I/O (AM, AGC, Video, BSync In)
J5	uDSUB15	Channel 2 Analog I/O (AM, AGC, Video, BSync In)
J6	SMB-M	Channel 1 70MHz IF Out Linear/DAGC
J7	SMB-M	Channel 2 70MHz IF Out Linear/DAGC
J8	uDSUB25	Channel 1 Digital I/O
J9	uDSUB25	Channel 2 Digital I/O
J10	SMB-M	IF Modulator Output
J11	uDSUB25	Combiner Digital I/O (Power)
J12	uDSUB25	User Digital I/O
J13	RJ45	Ethernet Control/Status/Data Interface
D1	Multi Color LED	Channel 1 Status LED
D2	Multi Color LED	Channel 2 Status LED

Notes:

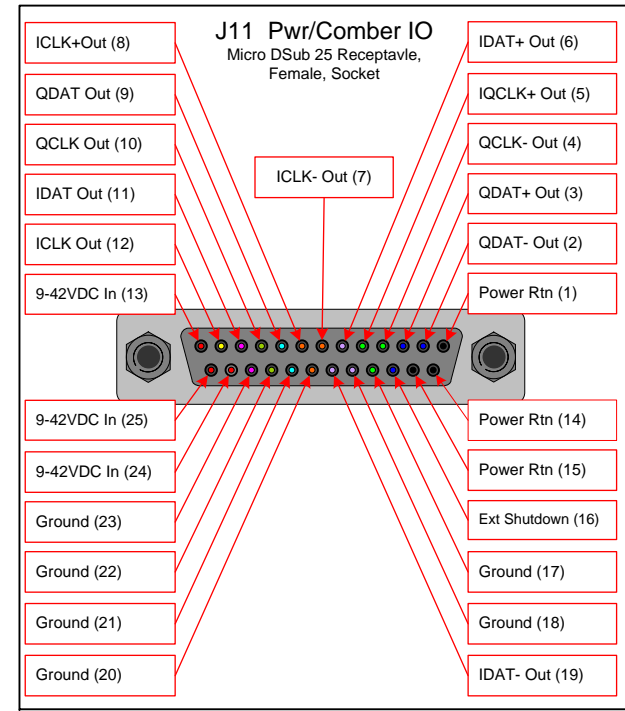
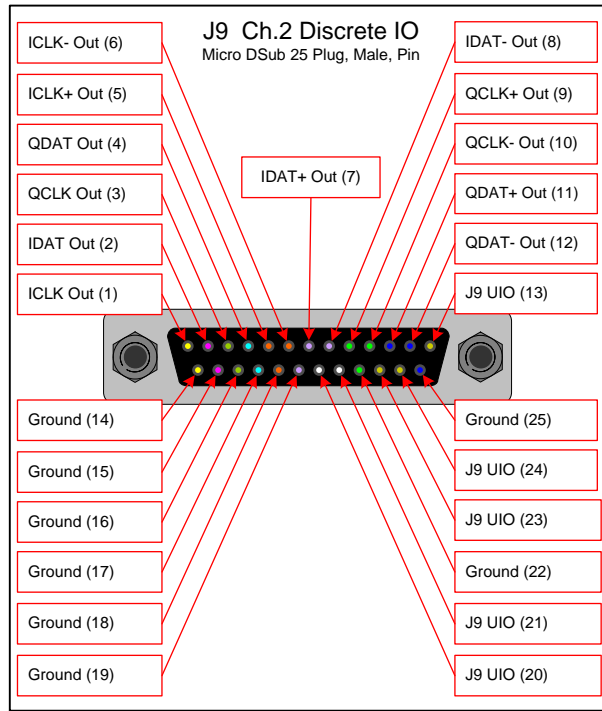
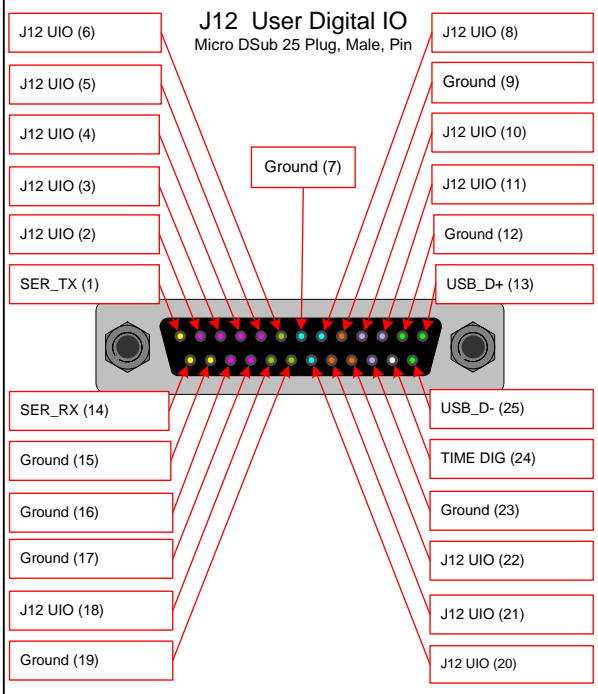
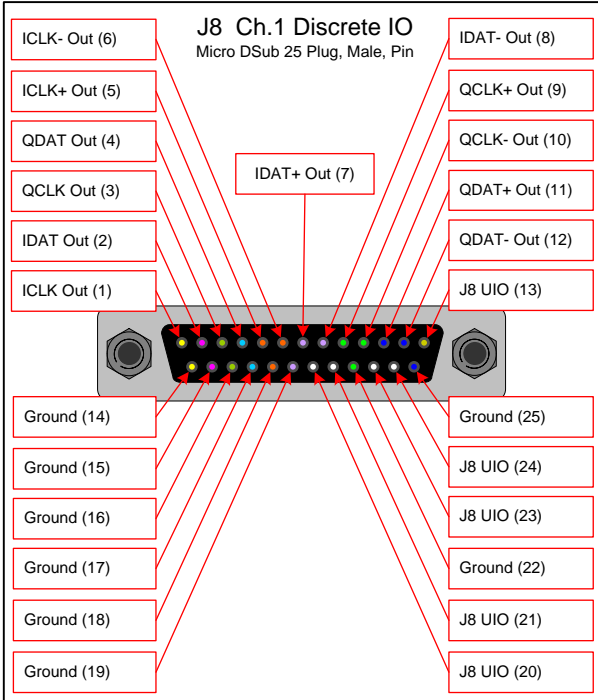
- 1.) All dimensions shown are in inches.
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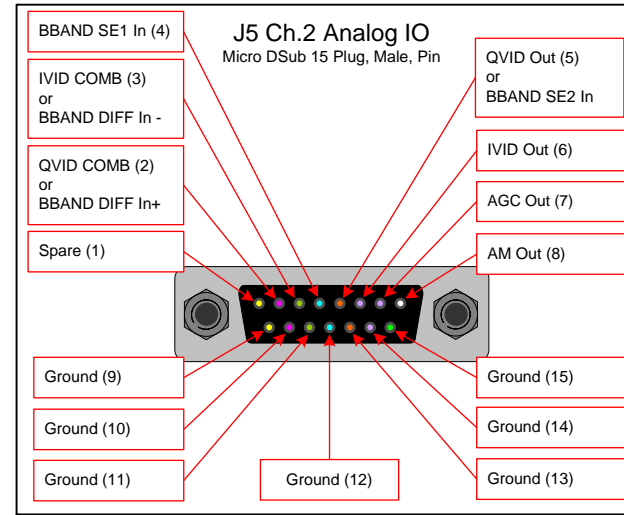
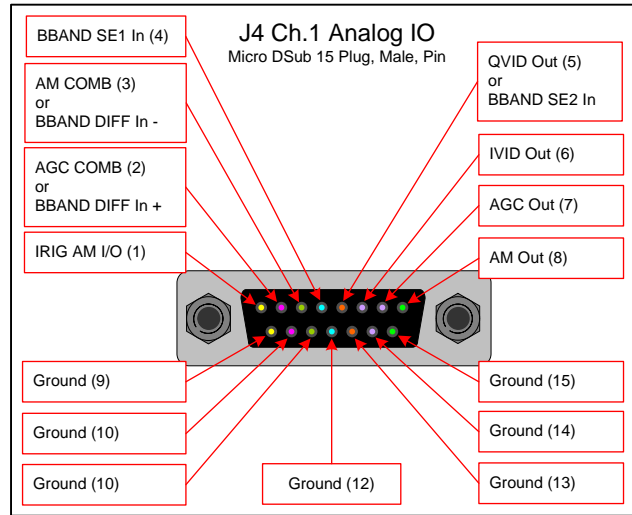
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Digital IO Connectors



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Analog IO Connectors



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Specifications

Receiver Specifications/Notes:

1.) RF Bandpass Frequencies (MHz):	215-320, 400-1150, 1435-1535, 1710-1850, 2200-2395, 2185-2485, 4400-4950, 5091-5150, 5091-5250, Custom
2.) RF Bands per channel:	1-5 plus 70MHz, (1-6 plus 70MHz optional)
3.) RF Tuning Step:	50 kHz steps (typical); as small as 10Hz is possible upon request
4.) Maximum RF Input Signal without damage:	+30 dBm
5.) RF Input P1dB:	+10 dBm
6.) RF Input Dynamic Range:	110dB (nom.) 120dB (max.)
7.) Receiver AGC range:	+4V to -4V, unipolar and bipolar user selectable, positive and negative slope user selectable; 12 user selectable ranges
8.) VSWR:	1.5:1 typical
9.) Frequency Accuracy:	0.002 ppm (internal)
10.) Noise Figure:	<4 dB typical, 6dB maximum
11.) RF Input Impedance:	50 ohms
12.) IF Outputs Ch1 and Ch2:	Linear, Limited, DAGC controlled; 50 Ohms
13.) 70MHz Test Modulator Output:	Can provide 70Mhz combined output in limited mode; can be used to modulate internal or external PCM data; adjustable output level and noise level
14.) IF Adjacent Channel Rejection Filters (3dB BW):	Up to 8 Bandwidths; Std = 250K, 500K, 1M, 2M, 5M, 10M, 20M, 40M; Custom
15.) Digital Data Demodulation modes:	Linear PM, MS-PCMF (Tier 0), BPSK, QPSK, OQPSK, SQPSK, SOQPSK (Tier 1), AUQPSK, AQPSK, MultiH CPM (Tier 2), PM w BPSK/QPSK subcarriers
16.) Analog Demodulation modes:	AM, Single Symbol PCMF (optional), FM Video w/wo de-emphasis (optional)
17.) Analog FM Demodulator bandwidth:	14MHz
18.) FM Video De-emphasis modes:	NTSC, PAL, bypass
19.) Analog AM Demodulator bandwidth:	32 User selectable; Ranges from 50Hz to 50kHz
20.) AM Output:	2Vp-p @ 50% AM Index; User Adjustable; 50 ohms
21.) Video Outputs:	Up to 16 user selectable Bandwidths for FM analog demodulation, digital reproduced I and Q video outputs for both channels and combined; variable output levels
22.) Baseband Input Range (Vp-p):	200mV to 10V
23.) Baseband Offset Range:	+/- 8V
24.) Baseband Sampling BW:	Up to 30MHz
25.) PCM Baseband Bit Rate:	100bps to 30Mbps (NRZ)
26.) PCM Baseband Loop BW:	0.001 to 5%; programmable
27.) Baseband Input Impedance:	50, 75, 100, 1K ohm (or custom); software selectable
28.) Single-ended Baseband Inputs:	2 per channel (only available where no SS-PCMF/VideoFM option is present)
29.) Differential Baseband Inputs:	1 per channel (only available where no SS-PCMF/VideoFM option is present)
30.) IF Input Impedance:	50 ohms
31.) 70MHz Test Modulator Output:	Can provide 70Mhz combined output in limited mode; can be used to modulate internal or external PCM data; adjustable output level and noise level (future)
32.) Digital Data Outputs:	5V TTL (50 ohm drive capable), High speed RS422/485 enhanced; simultaneous operation
33.) User Inputs/Outputs:	Total of 18 IO available (see sheet 6 for user IO details).
34.) Time Interfaces:	IRIG A, B, G input or output, Ethernet IEEE1588 with input trigger and output clock interfaces
35.) Data Streaming:	Two channels; Via Ethernet interface only (optional)
36.) Data Archive Storage:	8/16/32/64 GB of on-board data storage per channel (L/R/Combined)
37.) Decom Channels:	Up to three channels; raw mode and IRIG Ch4.
38.) FEC Capabilities:	Viterbi, LDPC, STC, Reed Solomon (optional)
39.) 3-slice DC Input Power (calculated):	9-42VDC; 26W (typ.) / 36W (max.); mode dependent
40.) 4-slice DC Input Power (calculated):	9-42VDC; 45W (typ.) / 75W (max.); mode dependent
41.) Control Interfaces:	(See below)

Control Interface Notes:

- 1.) Serial interface for control and general status only in USB 2.0 and RS232 format; simultaneous operation
- 2.) Ethernet interface supports 10/100/1000Mbps rates; IPv4, UDP (including multi-cast), TCP, ARP, ICMP, IGMP, PTP, and HTTP
- 3.) Ethernet provides multiple sockets for data, controls and status.
- 4.) Serial interfaces can operate simultaneously with Ethernet connection.

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User IO

Connector/ Pin	Direction	Speed	Default Signal Characteristics	Optional Factory Configured Signal Characteristics	Optional Factory Configured Signal Direction
J8-13	O	Low	Open Collector (*)	-	-
J8-20	I	High	5V	3.3V	O
J8-21	I	High	5V	3.3V	O
J8-23	O	High	5V	3.3V	I
J8-24	O	High	5V	3.3V	I
J9-13	O	Low	Open Collector (*)	-	-
J9-20	I	High	5V	3.3V	O
J9-21	I	High	5V	3.3V	O
J9-23	O	High	5V	3.3V, Open Collector (*)	I (*)
J9-24	O	High	5V	3.3V, Open Collector (*)	I (*)
J12-2	O/I	High	DIFF+	3.3V, 5V	-
J12-3	O/I	High	DIFF-	3.3V, 5V	-
J12-4	O/I	High	DIFF+	3.3V, 5V	-
J12-5	O/I	High	DIFF-	3.3V, 5V	-
J12-6	O/I	High	DIFF+	3.3V, 5V	-
J12-18	O/I	High	DIFF-	3.3V, 5V	-
J12-8	O/I	High	DIFF+	3.3V, 5V	-
J12-20	O/I	Low	DIFF-	3.3V, 5V	-
J12-21	O/I	Low	5V	3.3V, DIFF+	-
J12-22	O/I	Low	5V	3.3V, DIFF-	-
J12-10	O/I	Low	5V	3.3V, DIFF+	-
J12-11	O/I	Low	5V	3.3V, DIFF-	-

- Software Programmable Direction

(*) - Open Collector signals are outputs only

User IO Notes:

- 1.) Maximum signaling rate of low speed IO is 50Hz.
- 2.) Maximum signaling rate of high speed IO is 60MHz.
- 3.) Open Collector interfaces are 50V breakdown and are capable of sinking up to 500mA of current per IO point.
- 4.) Single-Ended 5V logic level interfaces are capable of driving 50 Ohm loads. Discrete logic signals can be factory configured for 3.3V logic levels. Consult factory
- 5.) Differential signals are functional to 60Mbps. RS422/485 interfaces; configurable in groups of two as inputs or outputs
- 6.) User IO configurations for J12 are can be directionally controlled via software selections. J8/J9 connector IO directions are fixed.

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