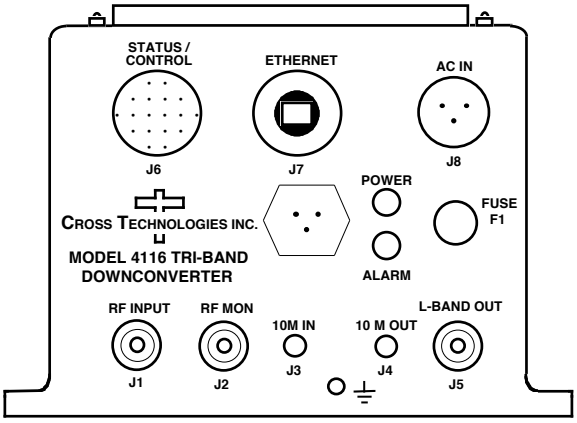
CROSS TECHNOLOGIES, INC.

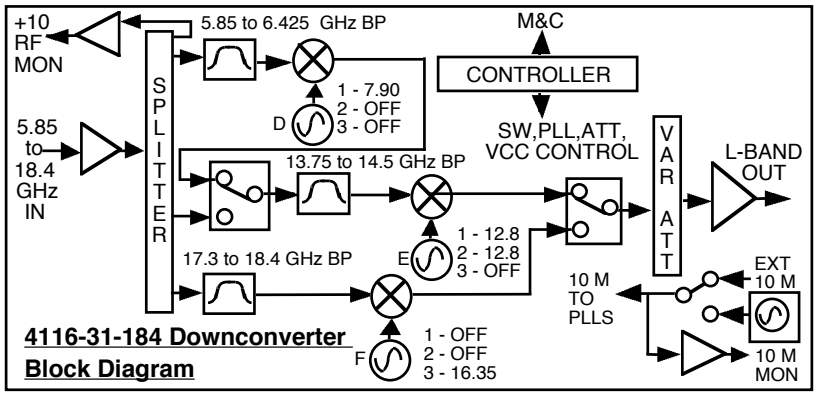
DATA SHEET

REV. A 8/17/21

4116-31-184 Tri-Band Block Downconverter, Weather Resistant*

The 4116-31-184 Block Downconverter converts one of three RF bands to 0.95 - 2.05 GHz. Front panel LEDs provide indication of DC Power, and PLL Alarm. The RF to L-band gain is +30 dB. Connectors are Type N female for the L-band, RF and RF Monitor and SMA female for the external reference input and reference output. Gain, band select, and internal 10 MHz frequency are controlled by the Ethernet M&C or via the Status/Control connector. In AUTO, the 10 MHz reference stays in external if the external level is in the +2 to +8 dBm range. It is powered by a 100-240 ± 10% VAC power supply, and in a 8" W X 6" H X 16" D Weather Resistant* enclosure.





4116-31-184 Downconverter Block Diagram

EQUIPMENT SPECIFICATIONS**

Input Characteristics

Impedance/Return Loss	50Ω/12 dB
Frequency (GHz)	BAND 1 - 5.85 to 6.425 BAND 2 - 13.75 to 14.5 BAND 3 - 17.3 to 18.4
Noise Figure, Max.	15 dB max gain
Input Level range	**-40 to -20 dBm**

Output Characteristics

Impedance/Return Loss	50 Ω /12 dB
Frequency (GHz)	BAND 1 - 0.95 to 1.525 BAND 2 - 0.95 to 1.70 BAND 3 - 0.95 to 2.05
Output Level Range	-20 to 0 dBm
Output 1 dB compression	+10 dBm, at max gain

Channel Characteristics

Gain **at F_C**	+30 ±3 dB, (0 to +30 dB variable in **0.5± 0.5 dB** dB steps)
Image Rejection	> 60 dB, min
Spurious, Inband	SIGNAL RELATED <-50 dBc, -20 to 0 dBm out; SIGNAL INDEPENDENT,<-60 dBm**; all at Gmax**
Spurious, Out of band	**-50 dBm, 0.5-0.94 GHz and 2.06 - 2.50 GHz; at Gmax**
Harmonics, in band	<-40 dBc at 0 dBm out, 0.95 to 2.05 GHz out (Band 3)**; at Gmax**
Intermodulation	<-50 dBc for two carriers at 4 MHz spacing, each at -5 dBm out**; at Gmax**
Frequency Response	±2 dB, over RF band; ± 0.5 dB, 40 MHz BW
Frequency Sense	Non-inverting

LO Characteristics

LO Frequency	Band Specific
Frequency Accuracy	± 0.05 ppm max over temp internal reference; ext. ref. input
10 MHz level In/Mon	Input=+2 to +8 dBm in; Monitor Output = Input Level **± 1.0** dB, 50 ohms

Phase Noise @ F (Hz) >	*100*	*1K*	*10K*	*100K*	*1M*
dBc	*60*	*70*	*80*	*90*	*100*

Controls, Indicators

Gain, Band, 10M Freq.	Gain, band select, and internal 10 MHz frequency via Ethernet M&C or Status/Control Connector.
PLL Alarm	Red LED, External contact closure
Power	Green LED

Other

Connectors*	Connector P/N	Mating Connector P/N
Status/Control Connector	MS3112E14-18S	MS3116F14-18P
AC Input Connector**	CL1M1102	CL1F1101
Ethernet Connector / RJ45	RJF21B	RJF6G

Additional Connector Specifications*			M&C Interface
RF In/ Mon	L-Band Out	10 MHz In/Out	RS232/422/485; Ethernet: Web Browser, SNMP & TCP/IP STD.
Type N (F) 50 Ω	Type N (F) 50 Ω	SMA (Female) 50 Ω	

* All cable connectors are Weather resistant. ** AC mating connector PROVIDED preassembled onto standard NEMA 5-15 U.S. power cord.

Size	8" Wide X 6" High X 16" Deep Weather Resistant* Enclosure
Power	100-240 ±10% VAC, 47 - 63 Hz, 25 watts max./ FCI Clipper Series CL1M1102 Connector

**+0 to +50 degrees C; Specifications subject to change without notice

***Weather Resistant** enclosures are designed to be water resistant for installation in an outdoor enclosure /antenna hut OR mounted outdoors on an antenna assembly at their specified temperature ranges. They are designed to be located "out in the elements" (water, sleet, snow, etc.) but they are *not* designed to be "submerged under" water.

If an extended temperature range is required, there is an **Extended Temperature** option (**Option W21**; -30˚C to +60˚C operating) available at an additional cost. Contact Cross for quote.

Options

W21 - -30˚C to +60˚C

Contact Cross for other options

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