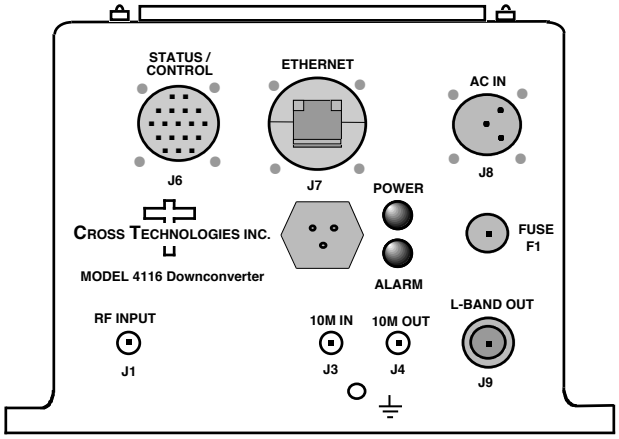
CROSS TECHNOLOGIES, INC.

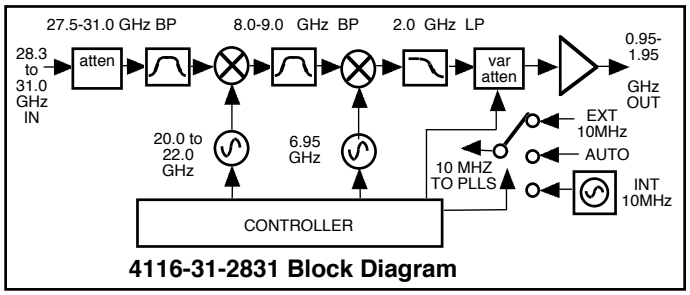
DATA SHEET

REV. 0 3/03/21

4116-31-2831 Ka-band Block Downconverter, Weather Resistant*

The 4116-31-2831 Ka-band Block Downconverter converts 28.3 - 31.0 GHz to 0.95 - 1.95 GHz in three selectable fixed bands. Front panel LEDs indicate DC Power and PLL Alarms. The RF to L-band gain is +30 dB maximum and is adjustable in 0.5 ± 0.5 dB steps. Connectors are 2.92 mm for RF In, SMA for external reference input and output, and Type N (all female) for L-band out. Gain, band select, and internal 10 MHz frequency are controlled by the Ethernet M&C. 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 is mounted in a 8"W X 6"H X 16"D Weather Resistant* enclosure.





4116-31-2831 Block Diagram

***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

W74MKA - 0dB Input Monitor

Contact Cross for other options

EQUIPMENT SPECIFICATIONS*

Input Characteristics

Impedance/Return Loss	50Ω/12 dB
Frequency (GHz)	BAND1 - 28.3 to 28.7 BAND2 - 29.2 to 29.9 BAND3 - 30.0 to 31.0
Input Level range	-30 to -10 dBm

Output Characteristics

Impedance/Return Loss	50Ω/12 dB
Frequency (GHz)	BAND1 - 0.95 to 1.35 BAND2 - 0.95 to 1.65 BAND3 - 0.95 to 1.95
Output Level Range	-20 to 0 dBm
Output 1 dB compr.	+10dBm, Gmax

Channel Characteristics

Gain at Fc	+30 ±3 dB, (0 to +30 dB variable in 0.5± 0.5 dB steps)
Image Rejection	> 60 dB, min
Spurious, Inband	SIGNAL RELATED <-50dBc, -20 to 0dBm out; SIGNAL INDEPENDENT,<-60 dBm; all at Gmax
Spurious, Out of Band	<-50 dBm, 0.5-0.94 GHz and 1.96 - 2.45 GHz; at Gmax
Harmonics, in band	<-40 dBc at 0 dBm out, 0.95 to 1.95 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

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/Hz	*-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/ 2.92 mm (F) 50 Ω	L-Band Out Type N (Female) 50 Ω	10 MHz In/Out SMA (Female) 50 Ω	RS232/422/485; Ethernet: Web Browser, SNMP & TCP/IP STD.

* 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

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