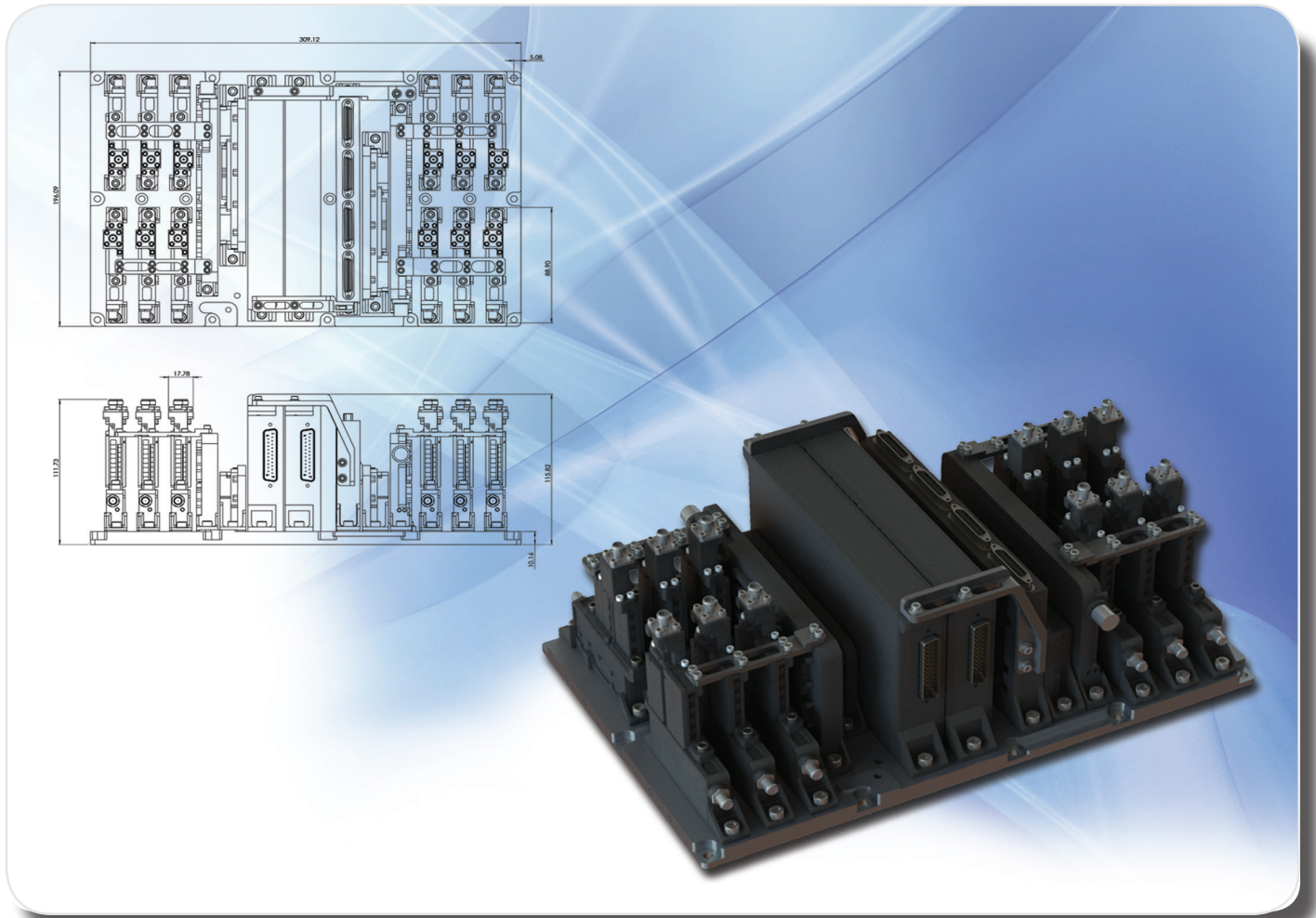


DOWNCONVERTER/RECEIVER MULTIPACK ASSEMBLY UNIT



FEATURES

- Weight per channel < 500 g for 12-pack downconverter configuration
- 2 for 1 redundancy for local oscillator, Ref TCXO and power supply
- Configurable for downconverter, receiver or a mix of both types
- Scalable from 4- to 14- Channels, with up to 2 different Local Oscillator (LO) frequencies
- 8 db gain control available upon request
- Parallel pulse command and telemetry interface (Standard)
- 8-bit, 16-bit serial interface for command and telemetry (Optional)
- Redundant serial bus configurable for various command/telemetry protocols
- Temperature telemetry (Optional)
- < 4 ppm LO stability over life of product and temperature, tighter stability upon request
- < 2.6 db NF over life and temperature for receivers

DOWN CONVERTER/RECEIVER MULTIPACK ASSEMBLY UNIT

OVERVIEW

L3 Narda Microwave–West's Receiver/ Downconverter Multipack system design introduces a unique distribution of Local Oscillator (LO) signals, command, control signals and DC power for optimum size, mass and power consumption.

Designed for manufacturability utilizing plug and play features, the baseplate is designed to accept a redundant Local Oscillator/TCXO slice, and up to 16 RF Converter/Receiver slices, a redundant DC-DC converter slice, and a redundant T & C interface slice. The use of plug-in LO and DC connectors provide a compact and flexible assembly without external cabling or individual harnessing.

Heavy use of Space Heritage module designs and manufacturing processes ensure reliability, performance and quality.

DEFINITION

4- to 12-pack Rx and/or DNC/UPC, Integration of channel filter available
2:1 EPC, cross strapped externally, separate A/B ON/OFF command
2:1 Parallel, pulsed command or Serial T & C interface, separate primary and redundant
2:1 LO slices

FREQUENCY (UP TO 2 DIFFERENT LO FREQUENCIES)

PARAMETER	UNITS	SPECIFICATION
Input frequency range	MHz	27500 to 31000
Bandwidth RF (slices) (Others available upon request)	MHz	500 1000 1500 2500
Output frequency range	MHz	17700 to 21200
Internal translation frequency (LO) range (Custom frequency available)	MHz	7800 to 11800 in 100 MHz steps

INTERFACE/CONTROL UNIT

Commands EPC LO TCXO Individual RF downconverter slices		ON/OFF, A/B Select A/B Select A/B Select ON/OFF
Telemetry EPC LO TCXO Temperature (Optional) Individual RF downconverter slices		ON/OFF A/B Select A/B Select Analog ON/OFF

DC/DC CONVERTER

VOLTS

DC voltage	36 / 50 / 70 / 100
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ENVIRONMENTAL

° C

Temperature Acceptance temperature range Qualification temperature range Survival temperature range Cold start capability	-20 to +65 -25 to +75 -30 to +80 -35.0
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LOCAL OSCILLATOR		
PARAMETER	UNITS	SPECIFICATION
LO stability		
Initial accuracy	ppm	± 0.50
Over any 10 deg C within AT range	ppm	± 0.15
Over any 15 deg C within AT range	ppm	± 0.20
Over any 30 deg C within AT & EOL	ppm	± 0.25
Over AT & EOL, including initial setting	ppm	± 4.00
Over Life at constant temperature	ppm	± 1.00
Phase noise on output carrier		
Offset from carrier		
10 Hz	dBc / Hz	-40
100 Hz	dBc / Hz	-70
1 kHz	dBc / Hz	-90
10 kHz	dBc / Hz	-100
100 kHz	dBc / Hz	-105
1 MHz	dBc / Hz	-115
10 MHz	dBc / Hz	-120

RECEIVER/DOWNCONVERTER			
PARAMETER	UNITS	SPECIFICATION	
Maximum operational input level			
Receiver	dBm	-50	
Downconverter	dBm	-20	
Overdrive survivability (continuous)			
Receiver	dBm	+10	
Downconverter	dBm	+15	
(Higher overdrive available)			
Gain (BOL at 25 deg C)			
Receiver high gain	dB	60 ± 1.5	
DNC high gain	dB	30 ± 1.0	
Gain setting	dB	8.0	
Gain step	dB	1.0	
Step accuracy	dB	± 0.25	
Gain @ EOL & Acceptance Temperature			
Receiver	dB	60 ± 2.5	
Downconverter	dB	30 ± 1.5	
Gain stability			
Over 15° C	dB p-p	0.4	
Over acceptance temperature range	dB p-p	1.0	
Over life (15 years)	dB p-p	1.5	
Gain flatness			
Over any 40 MHz	dB p-p	0.30	
Over any 125 MHz	dB p-p	0.50	
Over any 250 MHz	dB p-p	0.80	
Over any 500 MHz	dB p-p	1.00	
Over full 3500 MHz bandwidth	dB p-p	1.50	
Gain slope	dB / MHz	0.02	
Amplitude linearity			
OIP3	dBm	31.0	
Phase shift, Maximum			
At maximum operational input level	degree	1.0	
Group delay variation			
Over any 40 MHz	ns p-p	0.50	
Over any 125 MHz	ns p-p	0.60	
Over any 250 MHz	ns p-p	0.70	
Over any 500 MHz	ns p-p	0.80	
Over Full 3500 MHz bandwidth	ns p-p	1.00	
Spurious responses			
Discrete spurious modulation outputs	dBc	-65.0	
In-band mixer intermodulation products	dBc	-65.0	
Out-of-band spurious outputs	dBc	-65.0	
LO harmonics	dBm	-45.0	
Receiver/Downconverter RF interfaces			
Input	--	WR28 or WR34	
Output	--	K,F (2.92 mm F)	
Return loss			
Input	dB	20.0	
Output	dB	20.0	

SPECIFICATIONS (2 LOCAL OSCILLATOR CONFIGURATION)

Multipack Assembly Unit	Length		Mass (kg)		Power (Watts)	
	Inches	mm	Total	Per Slice	Total	Per Slice
8-pack Receiver Downconverter	11.52	293	6.190 5.824	.774 .728	52.5 45.1	6.56 5.64
12-pack Receiver Downconverter	13.95	354	7.206 6.652	.601 .554	73.1 62.1	6.09 5.18

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