PRODUCT BRIEF

RELEASE DATE 7/16/20

Model 3U RF Up/Down Converter with Preselection 0.5-18 GHz SOSA- aligned RF Playload Card

Designed to be a RF front end for electronic warfare, ELINT and electronic support/surveillance/attack, this 0.5 – 18 GHz wideband converter is a SOSA-aligned, conduction cooled, VPX RF Payload Card, which provides one channel up, one channel down, and a synthesizer in a single, 3U slice. It offers multiple pickets mixed with the DDS and fixed VCOs mixed with the wideband DDS. See specifications for target performance.

This 3U converter has a modular architecture designed for phase coherent applications. With a modest level of design effort this card can be reconfigured into various combinations such as: two up or two down converter channels; or a 6U with various combinations of four channels. It may also possible to fit more channels in a single 3U slice if certain specifications are relaxed.

Features

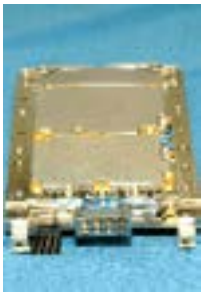
- SOSA-aligned, open systems architecture
- Fast tuning speed
- Built-in synthesizer
- External reference
- Low noise figure
- Low spurious
- Low harmonics
- Excellent gain flatness
- SWaP optimized
- Conduction cooled

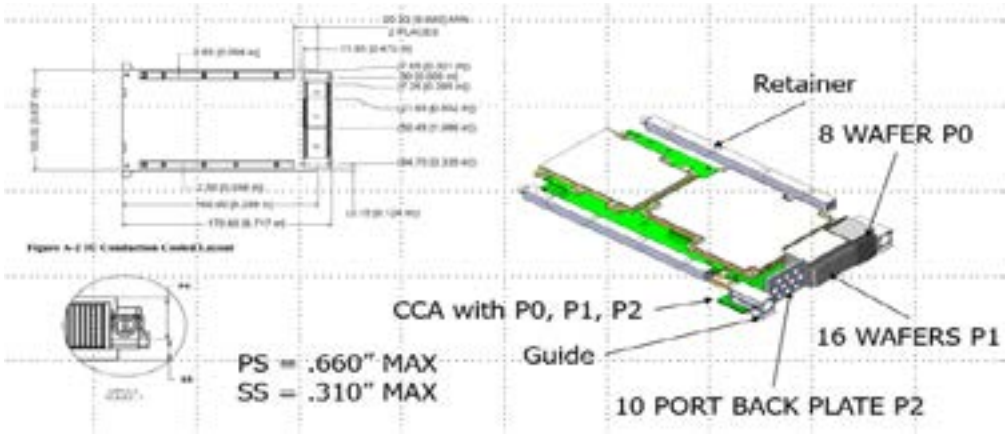
Customer Controlled DCA's

- RF Input DCA and IF Output DCA of Down-Converter
- IF Input DCA and RF Output DCA of Up-Converter

Available Confgurations

- 1 Up-Converter / 1 Down-Converter; Common Synthesizer
- 2 Up-Converters; Common Synthesizer
- 2 Down-Converters; Common Synthesizer





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Specifications	Up converter	Down Converter
RF FREQUENCY CONVERSION	.5 - 18 GHz	
CENTER FREQUENCY TUNING RANGE	.75 - 17.75 GHz	
RF VSWR	2.5 : 1	2.0: 1
NOMINAL GAIN	25 dB	
NOMINAL GAIN TOLERANCE	+/- .75 dB	
NOISE FIGURE	17 dB	
OP1dB (w/ max gain)	20 dBm	
OIP3 (w/ max gain)	30 dBm	
MAXIMUM RF INPUT POWER	20 dBm	
INSTANTANEOUS IF BANDWIDTH (IBW)	2.0 GHz; Felxibility for 0.5 GHz and 1 GHz with filter changes	
IF FREQUENCY	3.5 GHz	
GAIN FLATNESS IN IBW	+/- 2.25 dB	
CENTER FREQUENCY TUNING STEP SIZE	1 MHz	
GROUP DELAY FLATNESS (80%of IBW)	<5 ns	
TUNING SPEED	350 ns	
# OF TUNE STATES FOR HIGH SPEED TUNING	32	
PHASE COHERENCY	Required	
SINGLE SIGNAL SPURIOUS	-60 dBc at P_{in}<-15 dBm	-45 dBc at P_{in}<-10 dBm
SECOND ORDER, TWO TONE PERFORMANCE	-60 dBc at P_{in}<-15 dBm	N/A
HARMONICS	-60 dBc at P_{in}<-15 dBm	-35 dBc at P_{in}<-10 dBm
PORT-TO-PORT TX/RX ISOLATION	TBD	
INTERNALLY GENERATED SPURIOUS	-70 dBm	-60 dBm
INTEGRATED PHASE NOISE	0.5 degrees RMS	
CUSTOMER ATTENUATION	RF / IF : 15dB, 0.5 dB steps	
BIT DETECTORS	-10 dBm threshold Detector at output (2.5 to 4.5 GHZ)	
POWER	Vsupplies: VS1=12.0 V, V_{AUX}= 3.3V, <85W	
TEMPERATURE RANGE	-40˚C to ±75˚C Conduction Cooled	
SIZE	3U, 1.0” - Single slot	
WEIGHT	2.4 lbs	
FREQUENCY REFERENCE	125 MHz	
SOSA (ALIGNED) RF SLOT DEFINITION	SLT3-PAY-1F1U1S1S1U1U2F1H-14.6.11-2	