

NDR585

4 Channel VPX Microwave Tuner Platform

A 4 CHANNEL SUPERHETERODYNE MICROWAVE TUNER

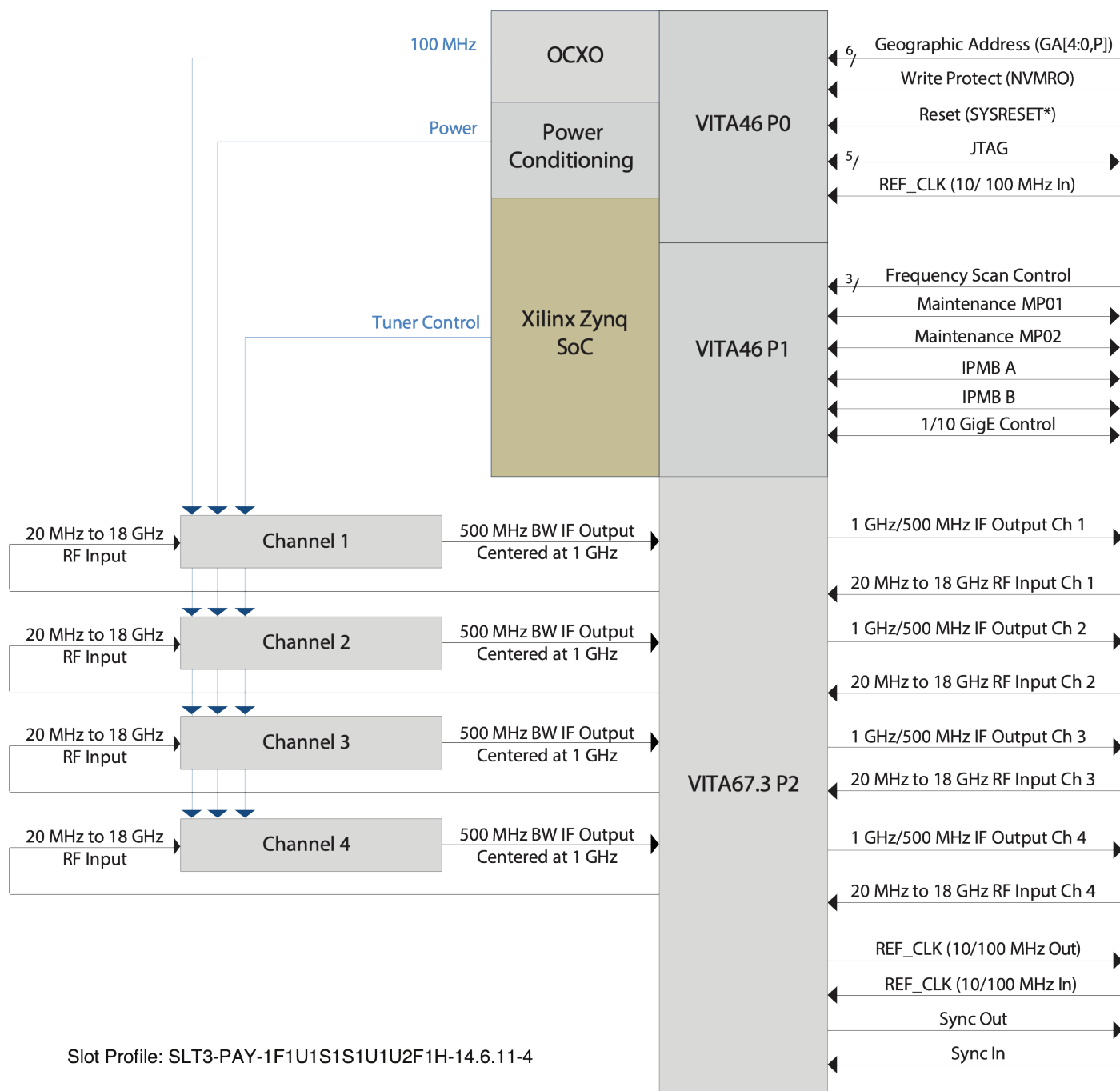
The NDR585 is a 4 channel, 3U SOSA VPX microwave tuner platform that provides frequency coverage from 20 MHz to 18 GHz. The NDR585's industry leading channel density minimizes system level SWaP. Each of the 4 channels provides a 1 GHz analog IF output with a 500 MHz instantaneous bandwidth. The channels can tune both independently and phase coherently and multiple NDR585 units can be synchronized for phase coherent operation. The unit incorporates a superheterodyne RF conversion architecture to minimize spurious products and yield high dynamic range performance. The fully integrated synthesizers provide fast tuning, low phase noise and the tuning flexibility to choose an alternative IF output center frequency (an IF different than 1 GHz) if desired. The NDR585 includes an internal 100 MHz OCXO and accepts a 10 MHz reference input. The OCXO can be bypassed using an external 100 MHz reference input.

The unit's form factor is single slot (1 inch pitch) 3U VPX and the total power consumption is 48 Watts (12 Watts per channel). The RF interface is provided through the VPX backplane using coaxial ports that are compliant with VITA 67.3. The backplane interface was developed in alignment with the SOSA® Technical Standard, and VITA 46/65 OpenVPX. The NDR585 is controlled through a 1G/10G Ethernet interface routed over the VPX backplane. The NDR585 digital architecture is based on the Xilinx Zynq SoC.

KEY HIGHLIGHTS

- 4 Channel 3U VPX Microwave Tuner Platform
- 20 MHz to 18 GHz RF Coverage
- 500 MHz Bandwidth Per Channel
- Independent and Phase Coherent Tuning
- 1 GHz Analog IF Output
- Industry Leading Channel Density
- MORA 2.4 BSP Option
- 1G/10G Ethernet command and control
- Slot Profile – SLT3-PAY1FIU1S1S1U-1U2FIH-14.6.11-4
- 48 W Power Consumption

BLOCK DIAGRAM



SPECIFICATIONS

Specification	Value	Notes
RF Input Frequency Range	20 MHz to 18 GHz	Supports any combination of independent and phase coherent channels including multiple sets of coherent channels. Two NDR585 units can operate as 8 coherent channels.
IF Output Center Frequency	1 GHz	
Instantaneous BW	500 MHz	
Noise Figure	15 dB, typical	
Gain Control Range	50 dB in 0.5 dB steps	
Tuning Resolution	10 MHz	10 MHz tuning resolution optimizes spurious performance. Tuning resolution of < 10 MHz can be supported.
LO Tuning Speed	100 microseconds, typical	measured from receipt of command to within 1 kHz of final frequency
Input In-band IIP3	+2 dBm, typical	Referenced to RF Input and measured at maximum gain with both test tones within the final IF passband
Input IIP2	>+40 dBm, typical	
Internal Spurious	-90 dBm input equivalent level, typical	
Maximum RF Input level without damage (at maximum gain)	+24 dBm	
Image and IF Rejection	>65 dB	
LO Radiation	-80 dBm	
LO SSB Phase Noise		
1 kHz offset	-90 dBc/Hz	
10 kHz offset	-100 dBc/Hz	
100 kHz offset	-100 dBc/Hz	
1 MHz offset	-120 dBc/Hz	
10 MHz offset	-140 dBc/Hz	

SPECIFICATIONS CONTINUED

Specification	Value	Notes
Internal Reference		
Frequency	100 MHz	External 100 MHz is supported as a no-OCXO bypass path
Temp Stability	+/- 0.1 ppm over 0 to +50 °C	
External Reference	10 MHz	
External Input Level (50 Ohms)	1V pp sine wave min.	
Power Consumption	48 W, (12 W per channel)	
Size	Single-slot (1" pitch) 3U VPX	
Weight	1.5 lbs. (less than 0.5 lbs. per channel)	
Operating Temperature Range	-40 to +70 °C (rail)	
Storage Temperature Range	-50 to +100 °C (rail)	
Vibration	Suitable for airborne	
Humidity	5% to 95% non-condensing	

Specifications subject to change without notice.

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