



DCR-2500A Downconverter

The requirement for phase noise levels in the new PCS applications is unprecedented. The DCR-2500A has the lowest noise available and the levels are low enough, when combined with the NTS-1000B, to measure these extremely low levels.

The RDL Model DCR-2500A is a unique downconverter in that the LOs inside have extremely low phase noise. There are three overlapping bands in the DCR-2500A that provide continuous frequency coverage between 1 GHz and 3.26 GHz. The output frequency range is bandpass filter limited to between 60 and 700 MHz.

This unit requires only a 0 dBm input level. RDL puts the gain inside the DCR-2500A so that an

external low-noise amplifier is not required. Conversion gain is a nominal +3 dB and the DCR-2500A output is sufficient to drive the Model NTS-1000B Phase Noise Analyzer.

The DCR-2500A operates under IEEE-488.2 external control. The user can select a band or just send a frequency and the DCR-2500A will automatically select the correct band. The NTS-1000B has an input screen, also available over the IEEE-488 bus, that inputs the downconverter's LO frequency. This allows the NTS-1000B to properly interpret its input to display the correct measured frequency. The DCR-2500A extends the measurement speed and convenience of the NTS-1000B into the PCS frequency bands.

DCR-2500A SPECIFICATIONS

Frequency Range:	1 to 3.26 GHz					
Input Level Range	0 to -10 dBm					
Output Frequency Range	60 to 700 MHz					
Output Conversion Gain:	3 dB; ± 3 dB					
Typical Noise Floor dBc/Hz SSB @ 0 dBm input level						
Offset	100Hz	1kHz	10kHz	100kHz	300kHz	1MHz
Bands						
1.00-1.38 GHz	-106	-134	-145	-154	-154	-155
1.38-1.86 GHz	-105	-132	-143	-153	-154	-154
1.86-3.26 GHz	-103	-130	-140	-151	-153	-154

General Data:

Remote Control:	IEEE-488.2
AC Power:	99-121 and 198-242 Volts, 47-63 Hz
EMC:	Meets the requirements of CE and FCC Part 15.
Size:	20 x 17.5 x 5.25 inch (D x W x H)
Weight:	32lbs. net, 42lbs. shipping

1503450-300
 Specifications subject to change without notice.

NTS-1000B and DCR-2500A

The new PCS applications have placed high demands on the designer and manufacturer. The constant push to better utilize the available spectrum has made phase noise one of the most important parameters. Phase synchronous modulation has placed further demands on this critical parameter. Since every dB is critical and costly, accurate measurement is now a requirement, not a luxury.

The RDL Phase Noise Analyzer System that consists of the NTS-1000B and DCR-2500A provides unique measurement capabilities that are not available from other suppliers. The ability of the NTS-1000B to measure unlocked sources, in seconds, combined with the very low phase noise in the DCR-2500A Downconverter extends the measurement of phase noise from the lab into the factory.

In the past phase noise measurements have been confined to the laboratory due to the complexity of the measurement techniques and the time consum-

ing tools that have been available. The RDL System makes this a push-button measurement that can be made by non-technical personnel or under IEEE bus control. The built-in printer port and easy data manipulation makes documenting phase noise measurements a snap, and for the first time, makes statistical process control of this critical parameter feasible.

The low noise floor of the RDL System opens up the possibility of really measuring what is going on in a synthesizer's design. Now the noise of the PLL can be separated from the noise of the VCO and real design improvements can be analyzed and implemented.

Now you don't have to specify an over-designed VCO and pay for performance you can not confirm or use. The RDL System is so simple and fast that, for the first time, you can consider testing every product in production.

Typical Noise Floor NTS-1000B and DCR-2500A
(Corrected for Source Noise)

