



## Blue Tops RF Modules > Low Noise Regenerative Divider

### Features:

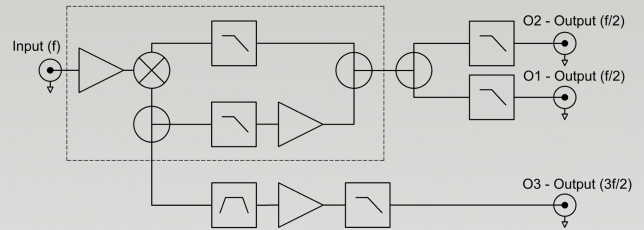
- Input Frequency: 10 MHz to 2 GHz
- Two f/2 Outputs; One 3f/2 Output
- Includes Input Amplifier
- Intrinsic Phase Noise to -175 dBc/Hz
- Integral Outputs Filters

### Applications:

- Synthesizer Building Block
- Communication Systems
- Radar Systems
- Electronic Warfare Systems

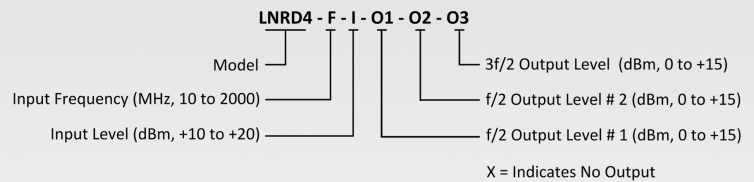
### Description:

The LNRD4 is a regenerative frequency divide-by-two module with an optional 3/2 frequency output. This module adds an input amplifier to the LNRD2 topology to accommodate lower input power applications. The input power can range from +10 to +20 dBm. Division is accomplished with a low noise mixer and amplifier yielding exceptional phase noise performance. The module includes the high-level mixer, filters, amplifiers and power splitters necessary to provide two f/2 outputs and one 3f/2 output. The typical output noise floor is -175 dBc/Hz (-172 dBc/Hz, guaranteed) and the close-in noise is significantly lower than the best crystal sources making the LNRD4 a nearly ideal frequency divider. This divider is designed for a fixed input frequency between 10 MHz and 2000 MHz.



Electrical Specifications	
Division Factor	(2) Divide-by-2; Optional 3/2 Output
Input Frequency	10 to 2000 MHz, fixed
Input Level	+10 dBm to +20 dBm, fixed (±1 dB)
Output Frequency	5 to 1000 MHz, fixed
Output Level	to +15 dBm (±2 dB)
Phase Noise, Residual (Intrinsic, Output Referred, 2000 MHz Model)	-172 dBc/Hz (100 kHz offset)
Harmonics	≤ -30 dBc
Sub-Harmonics	≤ -40 dBc
Spurious (Excluding Supply Line Related Spurs)	≤ -80 dBc
Supply Voltage	+15 VDC ±2%
Current Draw	≤ 300 mA
Operating Temperature	0 to +50°C
Storage Temperature	-40 to +85°C
Mechanical	
Dimensions	3" x 2" x 0.8"
DC Supply	Feed Thru Capacitor Solder Pin
Ground	Turret Terminal Solder Pin
RF Input / Output	SMA female *
* SMA female connectors are used unless otherwise specified. Other options include SMA male, right angle SMAs, BNC female and others. Contact factory for custom configurations.	

### Ordering Information:



Standard P/N	Input Frequency	Division Factor	Input Level	Output Frequency	Output Level 1	Output Level 2	Output Level 3	Output Referred Residual Phase Noise (100 kHz offset)	Supply Voltage
LNRD4-20-10-13-13-X	20 MHz	+2	+10 dBm	10 MHz	+13 dBm	+13 dBm	N/A	≤ -175 dBc/Hz	+15 VDC
LNRD4-50-10-13-13-X	50 MHz	+2	+10 dBm	25 MHz	+13 dBm	+13 dBm	N/A	≤ -175 dBc/Hz	+15 VDC
LNRD4-100-13-15-15-15	100 MHz	+2; 3/2	+13 dBm	50 MHz & 150 MHz	+15 dBm	+15 dBm	+15 dBm	≤ -175 dBc/Hz	+15 VDC
LNRD4-500-15-13-13-X	500 MHz	+2	+15 dBm	250 MHz	+13 dBm	+13 dBm	N/A	≤ -174 dBc/Hz	+15 VDC
LNRD4-1000-10-13-13-13	1000 MHz	+2; 3/2	+10 dBm	500 MHz & 1500 MHz	+13 dBm	+13 dBm	+13 dBm	≤ -173 dBc/Hz	+15 VDC
LNRD4-2000-10-15-15-X	2000 MHz	+2	+10 dBm	1000 MHz	+15 dBm	+15 dBm	N/A	≤ -172 dBc/Hz	+15 VDC



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