



How Important Is Noise Figure to Your Receive Chain?

Setting cascaded noise figure (NF) for an amplifier chain starts with the first-stage low noise amplifier (LNA). The gain of this device minimizes the NF contribution of succeeding devices in the chain, while its NF determines the best possible cascaded NF. Today, there are a number of competing cellular infrastructure-class LNAs from the Giant Amplifier Companies (GACs) with each offering comparable gain and NF.



Guerrilla RF Raises the Bar

With the introduction of GRF2093, Guerrilla RF now sets a new bar for single-stage gain and NF performance for applications like 5G cellular infrastructure and Satellite Digital Audio Radio Service (SDARS) in the 1.0 to 6.0 GHz frequency range.

The data tells the story. Below is best-in-class data taken from tuned GRF2093 evaluation boards in the SDARS 2320-2345 MHz, 3.4-3.8 GHz and 5.0-5.9 GHz bands.

Device	Freq (MHz)	Vdd (V)	Iddq (mA)	Gain (dB)	OIP3 (dBm)	OP1dB (dBm)	Eval Board NF (dB)	Estimated NF with board input losses removed (dB)
GRF2093	2332.5	5.0	60	21.0	35.5	18.2	0.31	0.25
GRF2093	3600	5.0	60	19.2	36.0	18.5	0.53	0.45
GRF2093	5500	5.0	50	16.0	32.5	15.5	0.71	0.55

When board losses are removed, GRF2093 SDARS NF is around **0.25 dB** and 3.6 GHz NF is **0.45 dB**! This represents a significant NF improvement over anything in the marketplace today. If your product needs to achieve the absolute lowest NF, then look to GRF2093.

GRF2093 is pin/layout compatible with more than 20 devices using our standard 1.5 x 1.5 mm DFN-6 plastic package. Evaluation boards and samples are available now.

Guerrilla RF is committed to supplying the high performance RF solutions you need and, we would be delighted to provide the applications support to successfully implement any of our devices.

Contact us at applications@guerrilla-rf.com!