



## Do You Have an Unusual Amplifier Requirement?

RF amplifier data sheet specification tables typically focus on the usual suspects: Gain, Noise Figure, IP3, P1dB. If you have a unique requirement, what do you do?



You can try and contact the applications team of a Giant Amplifier Company, but good luck with that. You'll most likely never hear back.



These are the kinds of questions, however, that the GRF applications engineering team love to answer. Take this real-life, recent example.

Our customer needed a low power, broadband solution to optimize *reverse IM3 performance*. That's not a requirement you see every day! Here are the detailed specs:

**Bandwidth:** 470 to 960 MHz

**On-channel output power:** 12 dBm

**Reverse IM Requirement:** -50 dBc

**Interference Signal Applied to Output:** 0 dB with spacing swept over -20 to +20 MHz

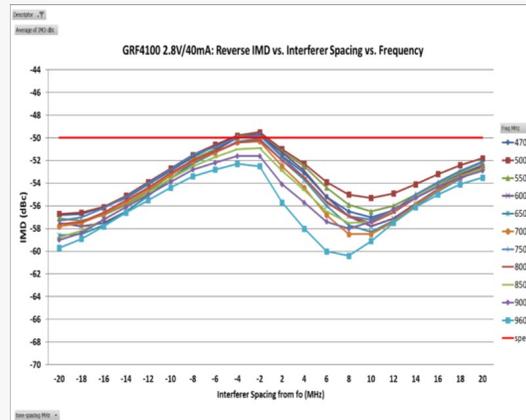
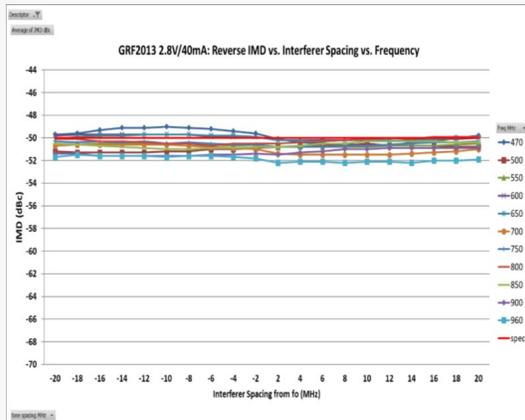
**Bias:** Vdd: 2.8 volts; Iddq: 40 mA

Given these requirements, our applications engineering team characterized several devices to determine which would work best. The two leading solutions were identified as the [GRF2013](#) and GRF4100.

The [GRF2013](#) is an E-pHEMT cascode amplifier which is in full production.

The GRF4100 is an InGaP HBT common-source amplifier which is in pre-production (evaluation boards and limited samples available).

Take a look at the reverse IM3 performance of each device below:



The [GRF2013](#) and GRF4100 represent good solutions for the reverse IMD requirement, especially considering the low voltage/iddq requirements of the application.

We provided an **entire data package** to our customer to demonstrate that these products would meet their requirements. Are you going to get that level of service from our competitors? I doubt it.

Send us your off-the-wall requirements and see if we can help you, too! Guerrilla RF's application engineering team stands ready to assist you with your design and applications needs. We welcome challenging device requirements and look forward to helping you succeed on your future projects.

Contact us at [applications@guerrilla-rf.com](mailto:applications@guerrilla-rf.com)!