RF Products Family

IDT’s RF products are best-in-class in dealing with unwanted interference from an increasingly crowded radio spectrum. Today’s higher data rates drive the need for better radio signal-to-noise ratios, which translates to the need for IDT’s higher linearity RF components. IDT’s unique patented RF solutions enable green networks with minimal power consumption, and will serve as a company growth driver for years to come.

RF solutions from IDT address the evolving needs of a wide range of applications, including cellular 4G and 5G base stations, Active Antenna Systems for both sub-6 GHz and mmWave frequencies, and SATCOM phased array antennas.

IDT’s innovative silicon-based products utilize CMOS, SOI and SiGe processes. To continue advancing our portfolio, IDT adds in III-V technologies to enable further improvements in device performance as needed for next-generation designs.

With a combination of technologies and advanced IP, IDT delivers unique solutions to the design challenges faced by designers.
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GLITCH-FREE™
IDT RF Digital Step Attenuators and RF Variable Gain Amplifiers
IDT devices virtually eliminate transient overshoot that can occur during MSB attenuation state transitions of standard DSAs. Thus, amplifier damage and loss of information at the ADC are avoided.

FLATNOISE™
Noise Figure is kept virtually flat in the critical region while gain is reduced. Greatly eases design constraints for Radio Engineers by enhancing SNR.

ZERO-DISTORTION™
IDT RF Mixers and IF Variable Gain Amplifiers
IDT devices improve SNR by reducing the noise floor and IM3 intermodulation distortion, as shown below in yellow. This is key for crowded spectrum environments, as it enhances Quality of Service and frees up under-utilized spectrum.

K\text{LIN} CONSTANT LINEARITY
K_{\text{LIN}} maintains constant high linearity as gain is adjusted. As the gain is reduced, the linearity (OIP3) remains constant in the critical region (see graph). This prevents intermodulation distortion from degrading as the gain is reduced.

K_{\text{IZ}} CONSTANT IMPEDANCE
K_{\text{IZ}} maintains a near constant impedance when switching between RF ports preserving a higher RF port return loss. Standard switches without K_{\text{IZ}} create a large Voltage Standing Wave Ratio, VSWR, transient when switching RF paths because the impedance of the switch is not well controlled during the switching event. By controlling the impedance during the switching process VSWR transients are minimized, improving switch reliability, reducing voltage stresses on downstream components and improving overall system performance.

To learn more about IDT’s RF products, patented technologies, or request samples, visit: idt.com/rf