



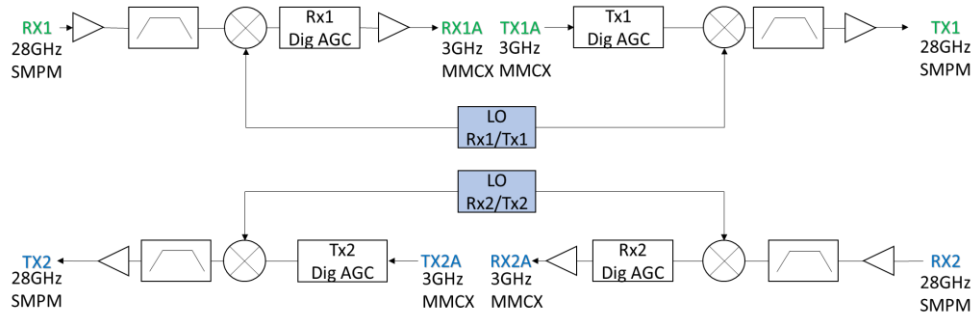
Reference Design, 28 GHz

Data Sheet

FEATURES

- Packaged RF subsystem
- Standard single 12 V power supply
- Illuminated power switch
- Standard push on connectors for rugged coaxial interface
- Provided Graphical User Interface
 - Easy to use interface
 - Established serial protocol
 - User selectable per channel attenuation
 - Individual power amplifier control – for power management schemes
 - USB 2.0 interface
 - Provides user with system status
- Two full transmit/receive chains (two transmitters and two receivers)
- Common local oscillator for TDD operation Rugged aluminum housing
- Low power consumption when programmed to standby mode
- Automatic Gain Control (AGC) repeater mode
- ED2's patent pending filter technology

Functional Block Diagram



APPLICATIONS

- Bridge 4G/LTE with 5G
- Smart Repeater/relays
- Bridge sub-6 GHz 5G with mmW 5G systems

KIT INCLUDES

- mmW Front End assembly
- EMI and GND shielded housing
- 28 GHz antennas
- Power Cord w/ Switch



Overview

ED2 has developed a mmW 5G front end reference design.

The reference design is intended to aid designers and makers to a fast proof of concept stage or quick prototype to demonstrate 5G waveforms and bridge between 4G/LTE and 5G services. Depending on your targeted scenario and detailed requirements, ED2's reference design RF board can be configured to operate as a mmW repeater/relay and/or small base station.

Designers can simply design or purchase their own baseband radio/Software-Defined Radio, plug-in the mmW Front End, and start developing unique applications with a proven front end. The mmW Front End enables designers to quickly build high-performance systems with confidence and ease. By simply connecting the off-the-shelf mmW Front End to a baseband radio or SDR, end-user system development and debug time can be cut in half, while reducing the overall cost by 20% or more relative to standard design processes.



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Reference Design Detailed Specifications

Parameter	Specification
Frequency range	27.5 – 28.35 GHz
Max. EIRP	32 dBm
HPBW – azimuth & Elevation for antenna	25°
Antenna gain	15 dBi
Max Receive NF	5 dB
Range of tunable gain (Tx or Rx)	30 dB
Max. electronic gain – Receive	30 dB
Max. electronic gain – Transmit	32 dB
In-band ripple (per 100 MHz band)	2 dB p/p
IP rating	IP65
Maximum High Data Rate Range	Up to 2.5 km range @ 256-QAM DL
Maximum range from gNB to UE	12 km
Power consumption – Standby	6.4 Watts
Power Consumption Two Channels Tx Mode	12 Watts
Power Consumption Two Channels Rx Mode	9.5 Watts
Power Consumption Two Channels Rx & Tx Mode	15 Watts
Dimensions	8.7" W x 9.3" H x 7.3"/TBD" D (DU/SU)
Polarization Type	Left Hand Circular Polarization (LHCP)
Operating Ambient Temperature (°C)	-20° to 45°
Weight	7 lb
Configuration / management interface	USB
Power method	External AC adaptor from +12 to +24 Volts



Data Sheet

Reference Design Mechanical Outline Drawing

