FPA-1 is a dual-channel 2×1 W TDD bidirectional broadband RF power amplifier launched by Zencheer. Measuring only 59 × 88 mm, it operates over 1350–1440 MHz and delivers high-linearity output, making it compatible with our SDR-C1/SDR-C2 software-defined radio platforms.

Key Features

- Supports 2×2 MIMO with integrated TX/RX amplifiers (TDD mode)
- Onboard DC-DC boost converter; wide input voltage range supported
- The two channels' PA/LNA can be controlled independently
- Compact and lightweight, suitable for handheld and backpack radio
- Up to 1 W output power per channel

Specifications

Frequency Range	1350–1440 MHz
Bandwidth	90 MHz
Tx Channel	
Gain	42 dB±1 dB
Output Power	30 dBm ± 1 dB
EVM	≤ −30 dB @ 30 dBm
Rx Channel	
Gain	32 dB@LNA Bypass Off
	-4 dB@LNA Bypass On
RF Connectors	
Baseband Side	MCX
Antenna Side	MMCX
Control Interface	
Connector	1 mm pitch 10-pin header
Switching Time	< 1 μs
Supply Voltage	12–27 V
Dimensions	59 × 88 × 11.6 mm (excluding RF connectors)
Weight	109 g
Temperature Range	Storage: -40 to +125 °C
	Operating: -20 to +65 °C
Power Consumption	20 W @ 70% TX duty cycle

Interface Definitions

Interface	**Description**
TX1/TX2	TX signal input, interfacing with the baseband board
RX1/RX2	RX signal output, interfacing with the baseband board
ANT1/ANT2	Connecting to the antennas
CTRL	PA control signal, pin definitions are provided in the Control Signals section
PWR	4-pin power connector for PA power input: Pins 1 and 2 are positive (+), Pins 3 and 4 are negative (−).

Control Signals

Pin Number	Pin Definition	Description
1	NC	No connection
2	SW_TXEN	Switch control signal: pull high in TX mode and pull low in RX mode
3	SW_RXEN	Switch control signal: pull low in TX mode and pull high in RX mode
4	PA_EN_1	Channel 2 PA enable: high = ON, low = OFF
5	LNA_EN_1	Channel 2 LNA enable: high = ON, low = OFF
6	LNA_BYP_1	Channel 2 LNA bypass: high = bypass mode, low = normal operation
7	PA_EN_0	Channel 1 PA enable: high = ON, low = OFF
8	LNA_EN_0	Channel 1 LNA enable: high = ON, low = OFF
9	LNA_BYP_0	Channel 1 LNA bypass: high = bypass mode, low = normal operation
10	GND	Ground

Ordering Information

Model	**Frequency Range**	**Tx Gain**	**Tx Power**	**Rx Gain**
FPA-1	1350–1440 MHz	42 dB	30 dBm	-4 dB/32 dB

Physical Size