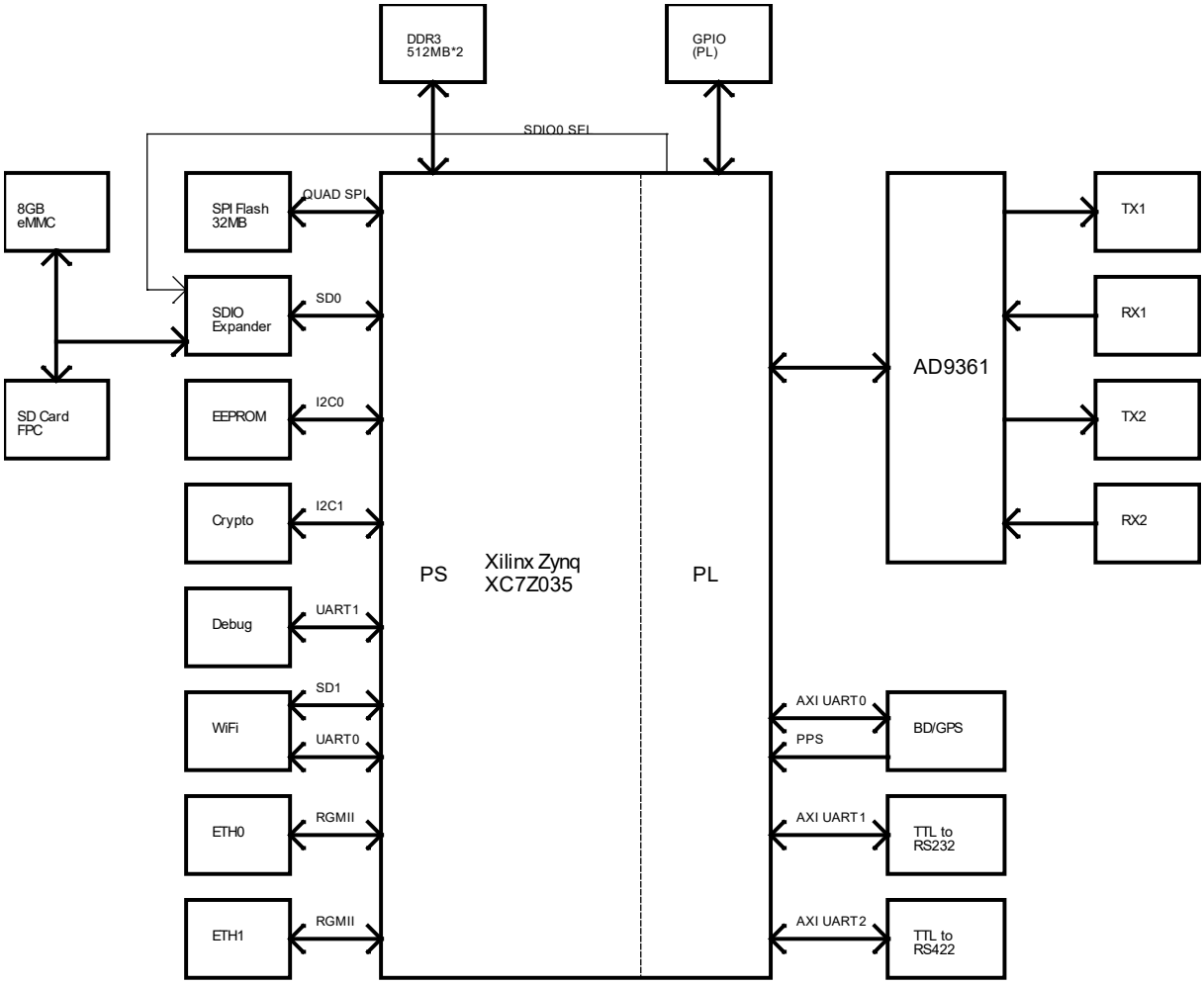
SDR-C2 is an SDR platform launched by Zencheer. It utilizes the Xilinx Zynq XC7Z035 FPGA and the ADI AD9361 wireless transceiver. Measuring 100*73 mm, it is suitable for manpack and vehicle-mounted radios.

SDR-C2 supports dual Tx/Rx channels, 2.4/5.8 GHz WiFi, BD/GPS positioning, two Ethernet ports, one RS232 serial port, one RS422 serial port, and multiple GPIOs. It integrates 32MB Quad SPI Flash and 8GB eMMC, and supports SD card via an FPC cable, facilitating user development.

1. Hardware Block Diagram



2. Key Features

- Based on Xilinx XC7Z035+ADI AD9361
- Supports 2.4/5.8GHz WiFi
- Supports BD/GPS positioning
- 2 10/100/1000Mbps Ethernet ports
- 1 RS232 serial port
- 1 RS422 serial port

3. Hardware Specifications

Main Chip	Xilinx XC7Z035-2FFG676I
Radio Chip	ADI AD9361
RAM	1GB DDR3
Storage	Winbond 32MB Quad SPI Flash 8GB eMMC (Either eMMC or SD card can be used) Microchip AT24C512 EEPROM
CryptoAuthentication Chip	Microchip ATSHA204A
Interfaces	Power input (6Pin) Power pass-through output (4Pin) Debug and RS232 serial port (10Pin) RS422 port (5Pin) Ethernet port ETH0 (8Pin), 10/100/1000Mbps Ethernet port ETH1 (8Pin), 10/100/1000Mbps JTAG port (7Pin) PL GPIO_A (10Pin) PL GPIO_B (10Pin) SD card interface (10Pin) WiFi antenna port, 1 IPX connector BD/GPS antenna port, 1 IPX connector RF interfaces, 4 MCX connectors
Power Supply	12-48V with reverse-polarity protection
Size	100*73*14.6mm (Mounting holes excluded)
Temperature Range	Storage: -40~+85 degrees C Operation: -20~+65 degrees C
Software Features	Vivado project included Petalinux(Meta-adi) source code included Compatible with ADI IIO Oscilloscope and Matlab

4. Interface Definitions

1) DC power input (DC), using Molex 53398-0671

Pin number	Definitions	Description
1	VIN	Positive power supply
2	VIN	Positive power supply
3	VIN	Positive power supply
4	GND	Ground
5	GND	Ground
6	GND	Ground

2) Power pass-through output, using Molex 53261-0471

Pin number	Definition	Description
1	VOUT	Positive power output, sharing the same power rail as the power input
2	VOUT	Positive power output, sharing the same power rail as the power input
3	GND	Ground
4	GND	Ground

3) Debug and RS232 serial (UART/RS232), using JST SM10B-SRSS-TB

Pin number	Definition	Description
1	3.3V	Provides 3.3V power output (current limited to 2A) with reverse current protection
2	UART1_RXD	PS UART1 RXD, 3.3V logic level
3	UART1_TXD	PS UART1 TXD, 3.3V logic level
4	PL_UART1_RXD	PL UART1 RXD, 3.3V logic level
5	PL_UART1_TXD	PL UART1 TXD, 3.3V logic level
6	NC	No connection
7	NC	No connection
8	EXT_LED_1	PL AF23, 3.3V logic level

9	EXT_LED_2	PL AF22, 3.3V logic level
10	GND	Ground

4) RS422 port (RS422), using JST SM05B-SRSS-TB

Pin number	Definition	Description
1	RS422_RXP	RS422 Rx+
2	RS422_RXN	RS422 Rx-
3	RS422_TXN	RS422 Tx-
4	RS422_TXP	RS422 Tx+
5	GND	Ground

5) Ethernet port ETH0 (ETH0), using JST SM08B-SRSS-TB

Pin number	Definition	Description
1	PHY0_TRX0+	Corresponds to the white-orange wire.
2	PHY0_TRX0-	Corresponds to the orange wire.
3	PHY0_TRX1+	Corresponds to the white-green wire.
4	PHY0_TRX1-	Corresponds to the green wire.
5	PHY0_TRX2+	Corresponds to the white-blue wire.
6	PHY0_TRX2-	Corresponds to the blue wire.
7	PHY0_TRX3+	Corresponds to the white-brown wire.
8	PHY0_TRX3-	Corresponds to the brown wire.

6) Ethernet port ETH1(ETH1), using JST SM08B-SRSS-TB

Pin number	Definition	Description
1	PHY1_TRX0+	Corresponds to the white-orange wire.
2	PHY1_TRX0-	Corresponds to the orange wire.
3	PHY1_TRX1+	Corresponds to the white-green wire.
4	PHY1_TRX1-	Corresponds to the green wire.
5	PHY1_TRX2+	Corresponds to the white-blue wire.
6	PHY1_TRX2-	Corresponds to the blue wire.
7	PHY1_TRX3+	Corresponds to the white-brown wire.
8	PHY1_TRX3-	Corresponds to the brown wire.

7) JTAG port (JTAG), using JST BM07B-SRSS-TB

Pin number	Definition	Description
1	3.3V	Provides 3.3V power output
2	GND	Ground
3	JTAG_TCK	PL JTAG TCK
4	JTAG_TDO	PL JTAG TDO
5	JTAG_TDI	PL JTAG TDI
6	JTAG_TMS	PL JTAG TMS
7	NC	No connection

8) PL GPIO_A port (GPIO_A), using JST SM10B-SRSS-TB

Pin number	Definition	PL pin	Description
1	3.3V	--	Provides 3.3V power output (current limited to 2A) with reverse current protection
2	PL_GPIO_0	AD11	Connected in series with a 220ohm current-limiting resistor, suitable for driving user LED, 3.3V logic level
3	PL_GPIO_1	AD10	Connected in series with a 220ohm current-limiting resistor, suitable for driving user LED, 3.3V logic level
4	PL_GPIO_2	AB10	Connected in series with a 220ohm current-limiting resistor, suitable for driving user LED, 3.3V logic level
5	PL_GPIO_3	AC11	Connected in series with a 220ohm current-limiting resistor, suitable for driving user LED, 3.3V logic level
6	PL_GPIO_4	AA10	Connected in series with a 220ohm current-limiting resistor, suitable for driving user LED, 3.3V logic level

7	PL_GPIO_5	AB11	Connected in series with a 220ohm current-limiting resistor, suitable for driving user LED, 3.3V logic level
8	PL_GPIO_6	Y11	Connected in series with a 220ohm current-limiting resistor, suitable for driving user LED, 3.3V logic level
9	PL_GPIO_7	Y10	Connected in series with a 220ohm current-limiting resistor, suitable for driving user LED, 3.3V logic level
10	GND	--	Ground

9) PL GPIO_B port (GPIO_B), using JST SM10B-SRSS-TB

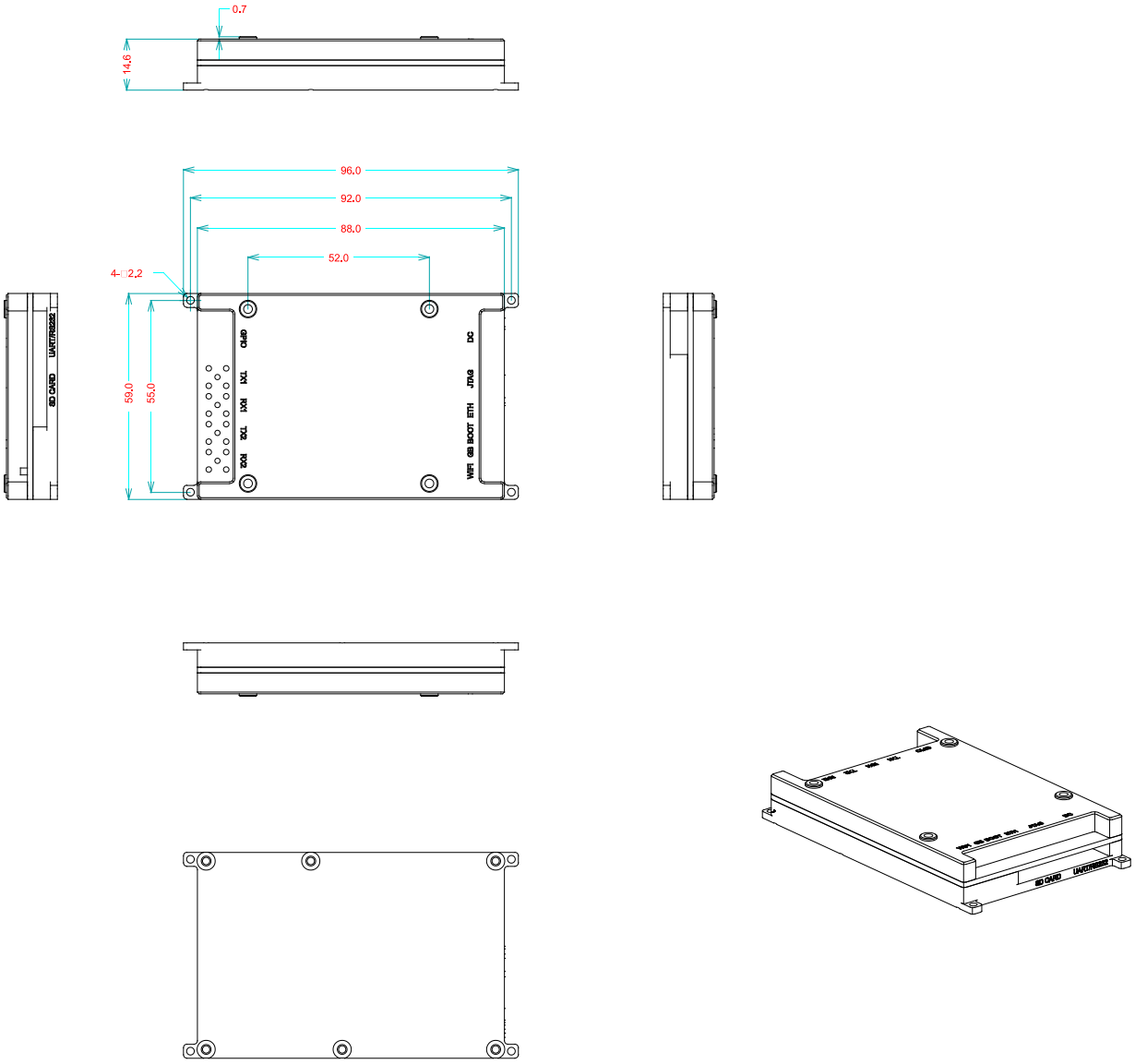
Pin number	Definition	PL pin	Description
1	3.3V	--	Provides 3.3V power output (current limited to 2A) with reverse current protection
2	PL_GPIO_8	AB15	Connected in series with a 220ohm current-limiting resistor, suitable for driving user LED, 3.3V logic level
3	PL_GPIO_9	AD14	Connected in series with a 220ohm current-limiting resistor, suitable for driving user LED, 3.3V logic level
4	PL_GPIO_10	AB14	Connected in series with a 220ohm current-limiting resistor, suitable for driving user LED, 3.3V logic level
5	PL_GPIO_11	W14	Connected in series with a 220ohm current-limiting resistor, suitable for driving user LED, 3.3V logic level
6	PL_GPIO_12	AA13	Connected in series with a 220ohm current-limiting resistor, suitable for

			driving user LED, 3.3V logic level
7	PL_GPIO_13	Y13	Connected in series with a 220ohm current-limiting resistor, suitable for driving user LED, 3.3V logic level
8	PL_GPIO_14	AA12	Connected in series with a 220ohm current-limiting resistor, suitable for driving user LED, 3.3V logic level
9	PL_GPIO_15	W13	Connected in series with a 220ohm current-limiting resistor, suitable for driving user LED, 3.3V logic level
10	GND	--	Ground

10) SD card interface (SD) using CviLux CF25101D0R0-10-NH, FPC socket

Pin number	Definition	Description
1	SD_D2	SD card D2
2	SD_D3	SD card D3
3	SD_CMD	SD card CMD
4	CARD_3V3	SD card 3.3V power supply
5	SD_CLK	SD card CLK
6	GND	Ground
7	SD_D0	SD card D0
8	SD_D1	SD card D1
9	SD_CD	SD card CD
10	GND	Ground

5. Physical Size



Established in March 2016, Zencheer Communication Technology Co., Ltd. is a technology-oriented, market-driven enterprise dedicated to becoming the preferred supplier of wireless products for small and medium-sized customers. We provide high-quality, long-lifecycle, and user-friendly wireless products, including WiFi products, RF amplifiers, and software-defined radio products.

Our core team boasts nearly 20 years of industry experience and possesses leading capabilities in RF and high-speed digital circuit development. We have unique technical resources and rigorous quality control measures, reducing complexity, risk, and costs for our customers, while shortening time to market for their products. We have earned widespread recognition as a high-quality supplier of wireless products, serving a variety of critical applications. While maintaining a strong foundation with our core product lines, we are actively exploring new technological frontiers. More and more customers are choosing to collaborate with us. In the future, Zencheer Communication will continue to innovate, create even more outstanding wireless products, and work with customers to make contributions in an increasing number of fields.

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