

Circuit Description

1. Data transmission from wired to wireless

1) The user is connected to X5 via wireless

Data packets are transmitted to Ethernet PHY D5 (L80223) via X9 (RJ45) interface and then transmitted to D1 (IDT79RC32K438) via MII interface. After the processing of CPU, data are transmitted to wireless network card X5 (WMIA105AG) via PCI interface. Signals will then be transmitted via the antenna on the wireless network card after the processing of the card.

2) The user is connected to X6 via wireless

Data packets are transmitted to Ethernet PHY D5 (L80223) via X9 (RJ45) interface and then transmitted to D1 (IDT79RC32K438) via MII interface. After the processing of CPU, data are transmitted to wireless network card X6 (WN4402A) via PCI interface. Signals will then be transmitted via the antenna on the wireless network card after the processing of the card.

2. Data retransmission from wireless to wired

1) The user is connected to X5 via wireless

The wireless network card (WMIA105AG) processes packet signals received via the antenna and sends them to D1 (IDT79RC32K438) via X5 PCI interface. After the processing of CPU, signals will be transmitted to Ethernet PHY D5 (L80223) via MII interface. Ethernet packets will then be sent out via X9 (RJ45) interface.

2) The user is connected to X6 via wireless

The wireless network card (WN4402A) processes packet signals received via the antenna and sends them to D1 (IDT79RC32K438) via X5 PCI interface. After the processing of CPU, signals will be transmitted to Ethernet PHY D5 (L80223) via MII interface. Ethernet packets will then be sent out via X9 (RJ45) interface.

3. Converting 48V to 3.3V

An external power supply provides the card with 48V power via X9 (RJ45). Passing through commutation diode VD3-VD6 (IN4007), lightning protection circuit D11-12 (SCK08102), VD8-9 (SMCJ58AT3), filter circuit and then L2, L3 (DO3316P-272HC), the current will enter the DC-DC converting circuit.

In the DC-DC circuit, D10 (TPS60061) generates PWM chopping signals to control the VT3 (FDD3630) and VT4 (SI9407) switches of the MOS tube. After passing through L1 (DO5022P 103H), the 3.3V current will be output.

4. Converting 12V to 3.3V

An external 12V DC power supply provides the card with 12V power via X4 (DC-470). After capacitor filtering, the current enters the DC-DC converting circuit directly. The 12V and 48V power supplies share the same DC-DC converting circuit.

5. Converting 3.3V to 2.5V

The 3.3V power is converted directly to 2.5V via LDO D16 (MIC39300).

6. Converting 3.3V to 1.3V

The 3.3V power is converted directly to 1.3V via LDO D15 (SPX1585).

7. Converting 2.5V to 1.25V

The 2.5V power is converted directly to 1.25V via DDR voltage regulator D14 (LP2995).

