Shenzhen Sinosun Technology Co.,Ltd.

MIMOmesh Wireless MESH/Data Link

Stable Outdoor Series

# Technical Specification

10Watts×2/20Watts×2

20Watts×2/50Watts×2

# 1. Specifications

| General | |
|---|---|
| SDR Platform, Waveform | AD936X+FPGA (7Z020、7Z030、7Z035、7Z100), Mobile network MANET+MIMO |
| MIMO Technology | Space-time coding、Receive Diversity、TX /RX beamforming、Spatial multiplexing |
| Receive Sensitivity | -103dBm@5MHz BW |
| Channel Bandwidth | 1.25/2.5/5/10/20MHz (7Z020, 7Z030)/40MHz (7Z035)/80MHz (7Z100, 40MHz+40MHz dual antenna frequency transceiver of carrier aggregation), configurable |
| Data Rate | 1-70Mbps (20MHz BW, 7Z020)/1-130Mbps (20MHz BW, beamforming by 7Z030)/1-252Mbps (40MHz BW)/1-350Mbps (80MHz BW) Adaptive, QoS |
| Modulation Mode | TD-COFDM, BPSK/QPSK/16QAM/64QAM/256QAM/1024QAM Adaptive (Fixed setting optional) |
| RF Output Power (Support TPC, transmission power control, 1dBm adjustable) | 10Watts×2<br>20Watts×2<br>50Watts×2 |
| Mode | Distributed centerless Point-to-point/Point-to-multipoint/Multipoint-to-multipoint, Layer 2 or 3 of Dynamic routing、Multi-hop relay, Star/Line/Network/Hybrid |
| Single Hop Delay | Average 6mS (Unidirectional, 20MHz BW) |
| Encryption | DES, AES128/256 (SM4/SNOW3G/ZUC optional, Chip/TF card encryption customized or external encryption machine) |
| Anti-Jamming Mode | Manual spectrum scanning channel selection/Full band enhanced intelligent frequency selecting(spectrum awareness)/Full band adaptive frequency hopping FHSS/Roaming mode, Multi-level anti-interference |
| Local/ Remote Management | Operating frequency, channel bandwidth, network ID, transmit power and other parameter settings, spectrum scanning, real-time display and statistical records of network topology, link field strength signal-to-noise ratio, upload and download traffic, node distance, BD/GPS(GNSS) positioning electronic map, temperature/voltage/jamming Monitoring, software upgrade (remote silence and wake-up optional) |
| Others | The startup time is less than 28 seconds, and the network access/update/switchover time is less than 1 second;<br>There is no limit on the user capacity of a single system (256 nodes or more) and the number of hops in Mesh networks (Data 15+ hops, voice 10+ hops, video 8+ hops); The total transmission rate loss for more than three hops is less than 70%;<br>Automatic carrier tracking, adapted to a Doppler frequency deviation of ±6kHz frequency offset, supports mobile communication at speeds above 7200 kilometers per hour (6 Mach, 2000 meters per second) |

**Bands** **(70M-6GHz/Uper C-X-Ku customizable. Same frequency or different frequency of TDD, 2T2R at single band or 1T2R at dual-band)**

| BAND | Frequency range | BAND | Frequency range |
|---|---|---|---|
| VHF/UHF (MHz) | 360-450/450-550/570-700/800-950, 225-400/225-678/320-470* | S Band (GHz) | 2.0-2.2/2.2-2.4/2.3-2.5/2.5-2.7/2.7-2.9/3.2-3.4/3.4-3.6/3.6-3.8, 1.9-2.7/2.0-2.7/2.1-2.7/2.7-3.6* |
| L Band (GHz) | 1.0-1.2/1.1-1.3/1.3-1.5/1.5-1.7/1.6-1.8, 1.0-1.5/1.1-1.6/1.2-1.7/ 1.3-1.8/1.6-2.3/1.7-2.4/1.8-2.5* | C Band (GHz) | 4.4-5.0/5.25-5.85, 4.2-5.2/5.5-6.0/6.4-7.2* |
| | (Note: RF power, Dimensions, Weight is different) | | |
| MIIT (MHz) | 336-344/512-592/566-626/606-678/1420-1520/1430-1444 | | |

| Environmental | | | |
|---|---|---|---|
| Operation Temperature | -40℃ ~+80℃ | Protection Level | IP66 (IP67/IP68 Customized) |

| Mechanical | | Power | |
|---|---|---|---|
| Size/Weight | 31.6x29.2x11.0cm/4.35kg (White)<br>38.5x28.5x17.9cm/11.7kg (Iron Gray) | Supply Voltage | 18-24VDC, 10Watts×2<br>18-36VDC, 20Watts×2/50Watts×2 |
| Color | White, Iron Gray | Power consumption | Operation 3-6A/Standby 0.7-0.9A@24V, 10Watts×2<br>Operation 6-7A/Standby 0.7-0.9A@24V, 20Watts×2/50Watts×2 |
| Installation | Clamp Fixation | Power Selection | Power Supply by Main Cable |

| Interface | |
|---|---|
| Basic interface | 2xN RF, 1-2xRJ45 Ethernet 100/1000BaseT, RS232, WIFI AP, DC input. GPS/BD, GPS/BD, TTL (UART)/SBus/Bluetooth 1.2-230.4Kbps are available. Supports transparent transmission over Ethernet and serial ports, and all communication protocols, including MAVLink. Selectable service priority. |
| Push to talk/ Auxiliary interface | MIC, SPK, PTT, GND, RS485/422, USB2.0 OTG |
| Network Extension Optional | Public Network Routing/4G LTE, WB-NB integration, Fiber, Satellite |
| Video Extension Optional | Low Delay HDMI/SDI/CVBS, 4K/2K/1080P/720P/D1 |
| LINK Indicator | Steady red - The network is not connected; Blinking red - Starting/not connected to the network<br>Steady green - The network is connected; Blinking green - Push-To-Talk has been pushed |
| RSSI Indicator | Steady green - The link quality is excellent; Steady blue - The link quality is good<br>Steady yellow - The link quality is medium; Steady purple - The link quality is slightly worse<br>Steady red - The link quality is poor or link is down; Off: The link is interrupted |
| Management Interface/ Control Interface | Web-based network management/GUI, API for secondary development interface/SNMP |

# 2. Hardware Interfaces


**1** Auxiliary Connection Port [LF10WBRB-12SD]

**2** WIFI Antenna Connection Port [SMA Female]

**3** GPS Antenna Connection Port [SMA Female]

**4** Power Switch

**5** Power Connection Port

**6** Push-to-Talk (PTT) Connection Port [FGG.0B.305]

**7** Communication Connection Port [LF10WBRB-12PD]

**9** 1-2 RF Antenna Connection Port [TNC Female]

**8** LINK Indicator

- Steady red: The network is not connected
- Blinking red: Starting/not connected to the network
- Steady green: The network is connected
- Blinking green: Push-To-Talk has been pushed

RSSI Indicator

- Steady green: The link quality is excellent
- Steady blue: The link quality is good
- Steady yellow: The link quality is medium
- Steady purple: The link quality is slightly worse
- Steady red: The link quality is poor
- Off: The link is interrupted

# 3. Connection Port Pin Definition

| PRI: Power/Ethernet/Serial Connector Pinout-7Z020/7Z030 | |
|---|---|
| **Enclosure PWR/COMM (LF10WBRB-12PD)** | **Signal** |
| 1 | 5V OUT (Supply external BD/GPS) |
| 2 | GND (-) |
| 3 | |
| 4 | VCC (+) |
| 5 | |
| 6 | ETH_TX+ |
| 7 | ETH_TX- |
| 8 | ETH_RX- |
| 9 | RS232(Default)/TTL(UART)_RXD |
| 10 | RS232(Default)/TTL(UART)_TXD |
| 11 | RS232(Default)/TTL(UART)_GND |
| 12 | ETH_RX+ |

**Table 1 PRI: Power/Ethernet/Serial Connector Pinout**

| AUX: USB/GPIO Connector Pinout | | |
|---|---|---|
| **Enclosure USB/GPIO (LF10WBRB-12SD)** | **7Z020 Signal** | **7Z030 Signal** |
| 1 | RS232_RXD | NC |
| 2 | NC | RS422_RX+/RS485_D+ (Parallel With PIN10) |
| 3 | | RS422_TX-/RS485_D-(Parallel With PIN11) |
| 4 | | USB2_VBUS |
| 5 | | GPIO1 (PA Enable 3.3V) |
| 6 | | USB2_D+ |
| 7 | | USB2_D- |
| 8 | RS232_GND | RESERVED (Disable) |
| 9 | NC | GND |
| 10 | RS232_TXD | RS422_TX+/RS485_D+(Parallel With PIN2) |
| 11 | NC | RS422_RX-/RS485_D-(Parallel With PIN3) |
| 12 | | USB2_GND |

**Table 2 USB/GPIO Connector Pinout**
**(USB1 is USB 2.0 OTG, USB2 is USB 2.0 Host Mode Only)**

| PTT Connector Pinout-7Z020/7Z030 | |
|---|---|
| **Enclosure PTT Connector (FGG.0B.305)** | **Signal** |
| 1 | PTT |
| 2 | SPK+ |
| 3 | SPK- |
| 4 | AUDIO_GND |
| 5 | MIC |

**Table 3 PTT Connector Pinout*(Generally Adopted)**

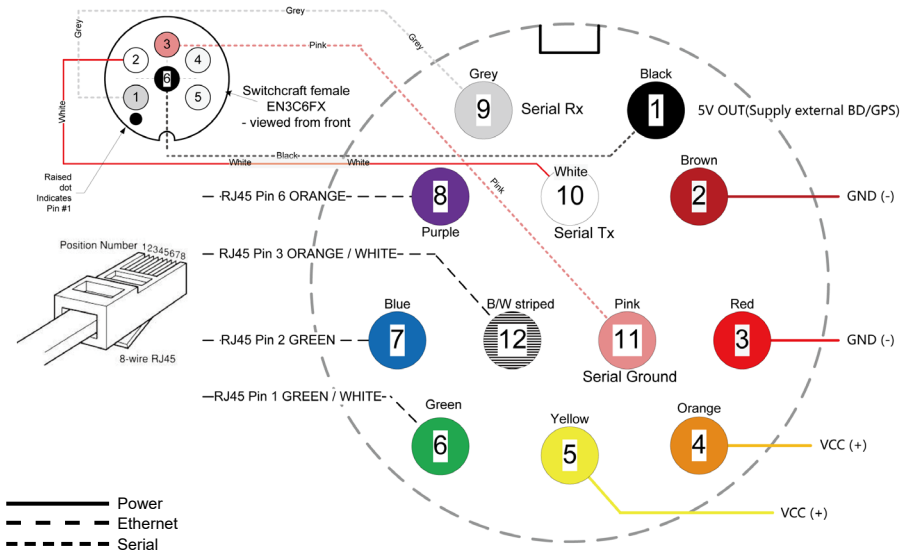



**Figure 2-1 Power Supply (Optional)/Ethernet/Serial Pinout (Cable Interface Front View, Non-Solder Side)**

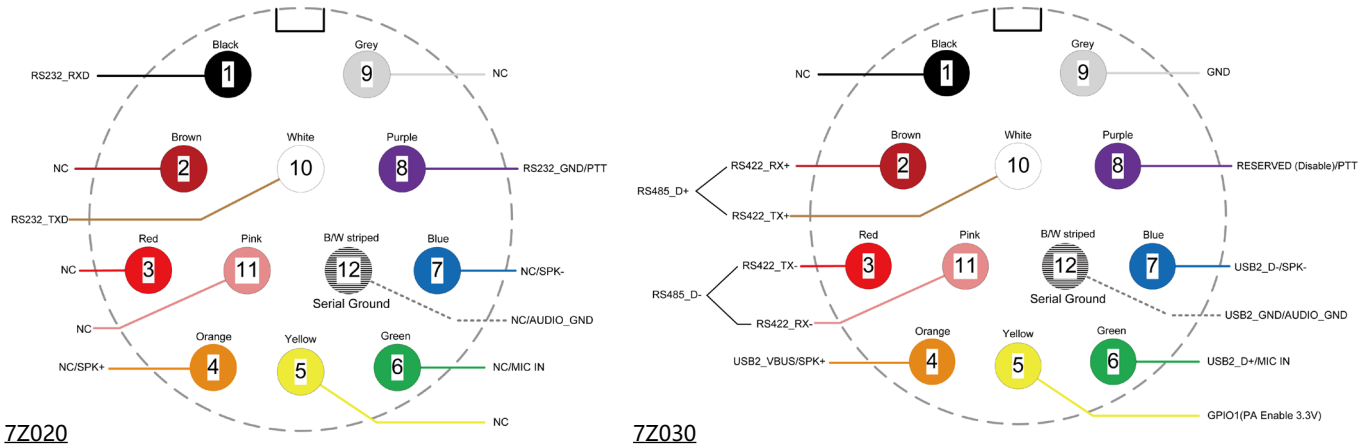



**Figure 2-2 USB/GPIO Pinout (Cable Interface Front View, Non-Solder Side)**

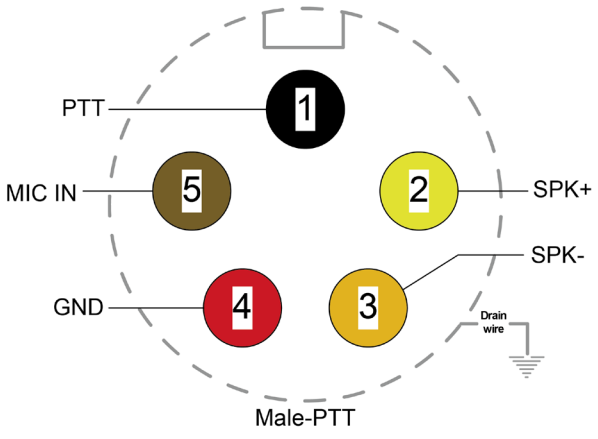
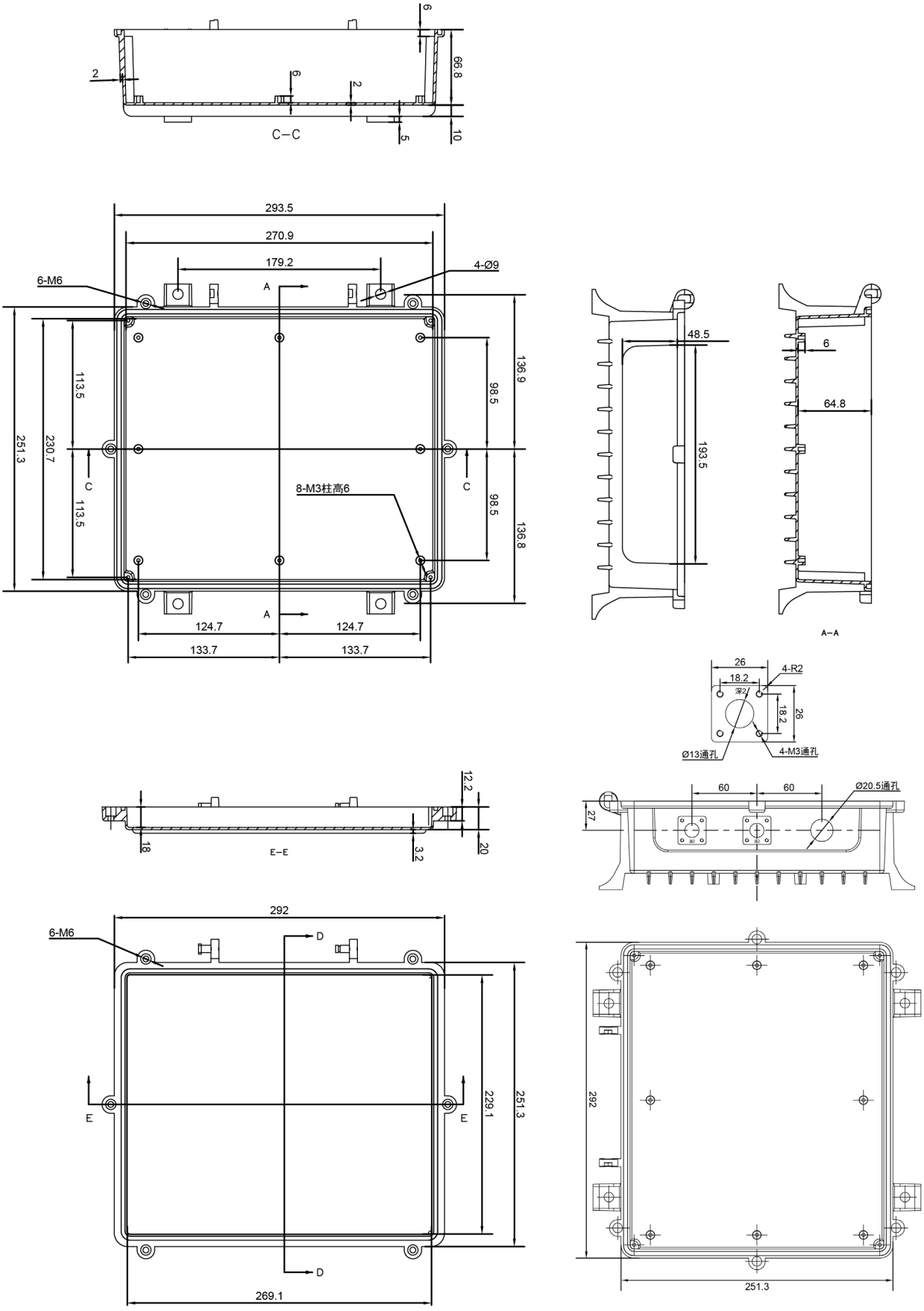



**Figure 2-3 PTT Pinout (Front View Of The Cable Interface, Non-soldering Side)**

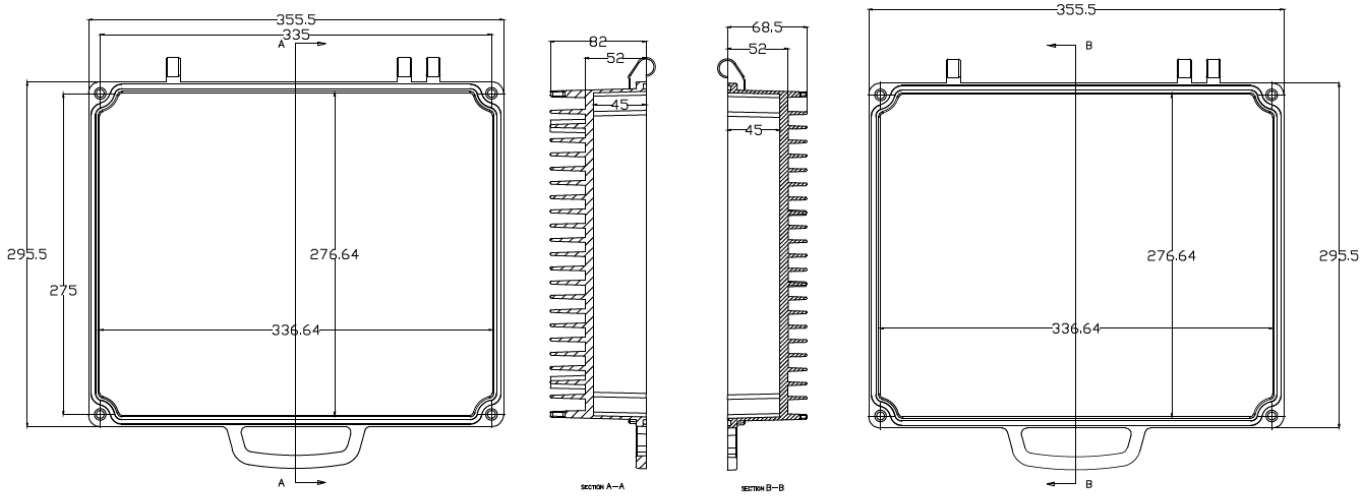
# 4. Dimension Figure

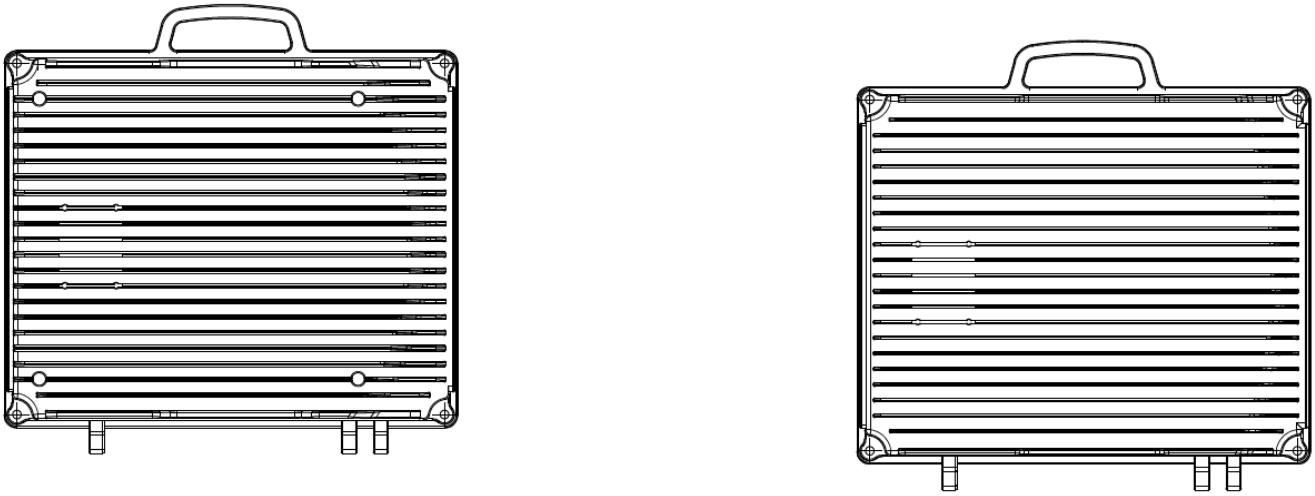
## 4.1 10Watts×2/20Watts×2

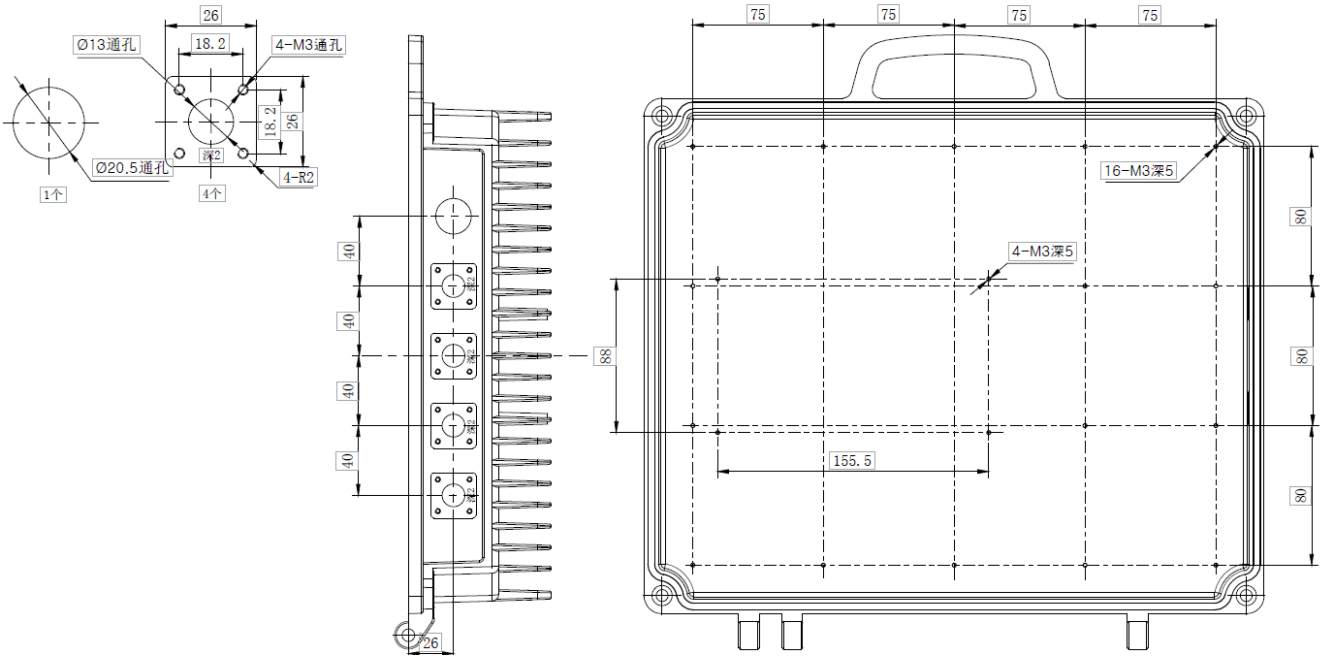



**Outdoor Radio Internal Hole Map**

## 4.2 20Watts×2/50Watts×2



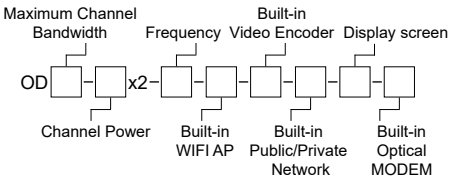






**Outdoor Radio Internal Hole Map**

# 5. Application scenarios and Installation display

# 6. Model Name




| Maximum Channel Bandwidth | Channel Power (W) | Frequency (MHz) | Built-in WIFI AP | Built-in Video Encoder | Built-in Public/ Private Network | Display Screen | Built-in Optical MODEM |
|---|---|---|---|---|---|---|---|
| 20 | 2 | 600, U | 0(N) | 0(N) | 0(N) | 0(N) | 0(N) |
| 40 | 4, 5 | 1400, L | 1(Y) | HDMI | 4G/5G | 2(2") | 1(Y) |
| 80 | 10 | 2300, S | | SDI/AV | 4G LTE CPE | 3(3.2") | |
| | 20, 40 | 4500, C | | | | 4(4") | |

OD20-20x2-1400-1-HDMI-4G/5G-0-0 Express: Maximum channel bandwidth 20MHz, 20Watts×2, 1400MHz, With WIFI AP, Built-in HDMI Coding, Built-in 4G/5G Public Network Module, Without display screen and without optical MODEM Outdoor Radio.