

MEITRACK LTE antenna Specification




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1 Product Overview

The Meitrack 4G antenna covers main 4G LTE bands and is compatible with 3G/2G/LPWA bands as well. The external antenna is barely influenced by the internal environment of devices, giving a much better performance in efficiency, radiation and gain whilst providing an optimized solution for a customer product. Meitrack also offers flexible installation with custom cable length and connector options.

2 Product Specifications

| Item | | Parameter Description |
|-----------------------------------|-----------------------------|------------------------|
| General | Antenna Dimensions | 116.4 * 21.9 * 6.2mm |
| | Casing Material & Color | ABS & Black |
| | Cable Type & Color & Length | RG174 & Black & 3000mm |
| | Connector Type | RP SMA Male |
| | Mounting Type | Magnet |
| | Weight | 46.1g |
| Passive Electrical Specifications | Frequency Range | 700–2700 MHz |
| | Input Impedence | 50 Ω |
| | VSWR | ≤ 1.6 |
| | Gain | ≤ 0.2 dBi |
| | Polarization Type | Linear |
| Operation Temperature | Operation Temperature | -20 °C to +85 °C |
| | RoHS Compliant | Yes |

| Detailed Passive Electrical Specifications | | | | | | | | |
|--|------|-------|-------|-------|-------|-------|-------|-------|
| Frequency Range(MHz) | 698 | 1176 | 1400 | 1710 | 2170 | 3300 | 4000 | 5000 |
| | -960 | -1280 | -1610 | -2170 | -2690 | -4000 | -5000 | -6000 |
| VSWR(Max.) | 1.5 | - | - | 1.4 | 1.6 | - | - | - |
| Average Efficiency (%) | 26.3 | - | - | 23.1 | 17.9 | - | - | - |
| Max. Peak Gain (dBi) | -0.8 | - | - | -1.1 | 0.2 | - | - | - |

3 Function of the LTE antenna

The LTE antenna is a core component for MDVR/Tracker to realize satellite positioning and time synchronization, with the following key functions:

1. Real-time video/audio backhaul: The multiple channels of video inside and outside the vehicle collected by the MDVR need to be transmitted to the backend management platform via the LTE network. The LTE antenna is responsible for sending the video stream to the base station in the form of radio frequency signals, while receiving platform instructions to ensure uninterrupted remote real-time monitoring.

2. Device status and positioning data reporting: The GPS positioning information, device operation data, and alarm signals associated with the MDVR need to be reported to the platform regularly or in real-time through the LTE antenna, supporting vehicle scheduling, safety management, and fault diagnosis.

3. Anti-interference and signal enhancement: LTE antennas mostly support MIMO multi-antenna technology. They receive/transmit different signals through multiple antennas simultaneously, integrate the signals using algorithms such as "maximum ratio combining", filter out electromagnetic interference generated by engines and on-board electrical appliances, and reduce video freezes and data packet loss caused by weak signals.

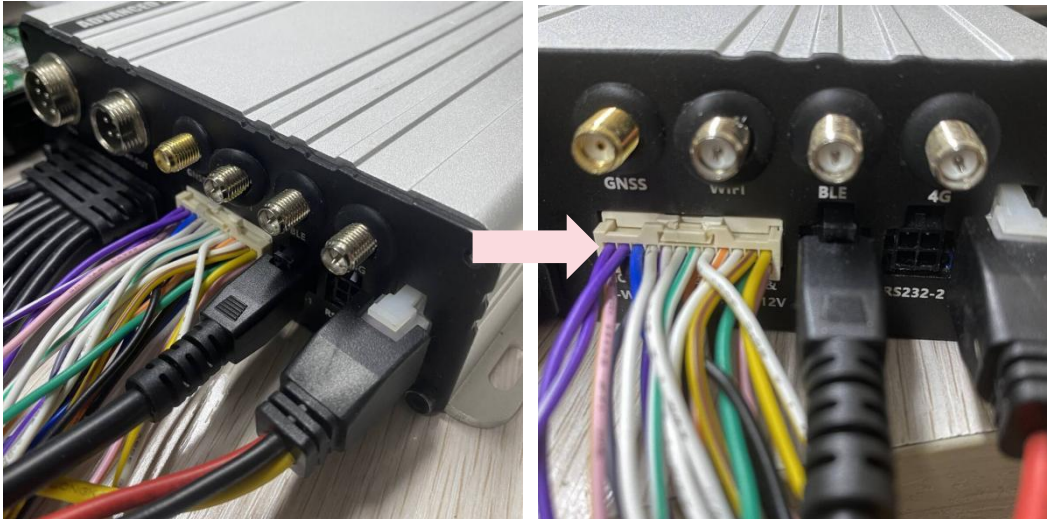
4. Wide frequency band adaptation and coverage: There are differences in LTE frequency bands among different regions and operators. LTE antennas need to cover these mainstream frequency bands to ensure that the MDVR does not switch frequency bands or interrupt communication when driving across regions, and avoid the "no signal" problem caused by frequency band mismatch.



4 LTE antenna usage

4.1 Connection Steps

1. Identify the Interface: Locate the LTE antenna interface on the host device (take MD600 as an example; the interface is usually marked with "4G" or corresponding logos).



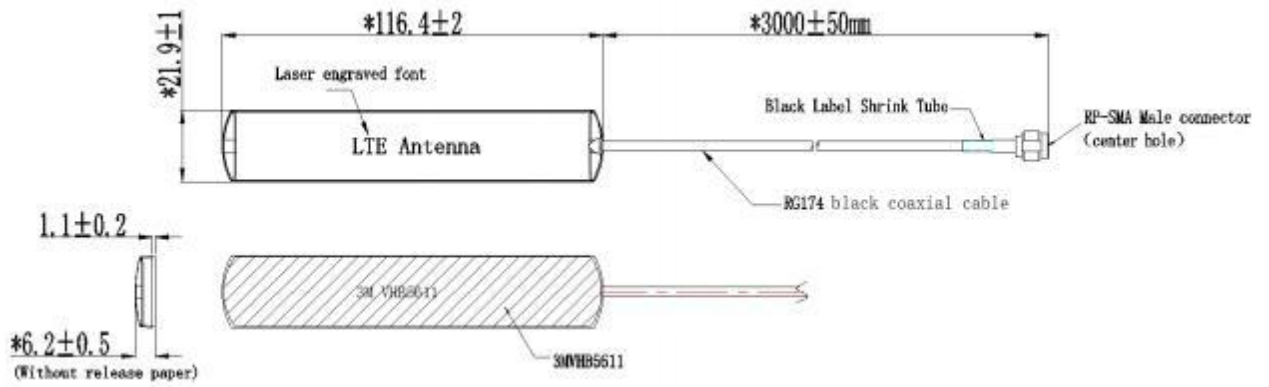
2. Secure Connection: Insert the SMA Male connector of the LTE antenna into the host interface and fasten it tightly to ensure a stable connection (avoid loose contact).
3. After connecting the antenna, it can be observed that the Roaming data signal is good.

| GSM | | | | |
|--------------------------------------|-------------|---------------------|----------------------|----------------------|
| Net type: 4G | GSM CSQ: 23 | SIM card: Installed | Dial status: Success | IMS: 460151100110020 |
| Server 1: ms06.trackingmate.com:6006 | Connected | Server 2: : | Disconnect | |

4.2 Usage Notes

1. Mount the antenna in an open area (e.g., the top of the vehicle dashboard, roof) free from obstructions (e.g., metal shields, dense plastic components). Maintain a distance of ≥ 20 mm from metal parts (e.g., USB ports, batteries) to avoid signal shielding.
2. Ensure the mounting surface is clean, dry, and flat. Press the antenna firmly for 30 seconds after mounting to activate the adhesive; avoid repositioning within 24 hours.
3. Do not bend the cable at angles $< 90^\circ$ or pull it with force (tensile force ≤ 5 N). Route the cable away from high-voltage wires (e.g., vehicle power cables) to reduce interference.
4. Operate the antenna within the specified temperature range ($-20^\circ\text{C} \sim +85^\circ\text{C}$). Avoid exposure to direct sunlight for extended periods or immersion in water (IP rating: IP54, splash-resistant only).
5. Check the connector tightness and cable integrity monthly. Replace the antenna if the cable is cracked, the connector is rusted, or the adhesive loses its stickiness.

5 Product size



If you have any further inquiries, please send an email to our mailbox info@meitrack.com. We are dedicated to providing you with assistance.