



ANT-MAG-RPSF-SMAM-1 Shown

ANT-MAG-RPSF-cccc-1

Magnetic Remote Antenna Base

The ANT-MAG-RPSF-cccc-1 is a magnetic externally mounted connector base incorporating a reverse-polarity SMA jack (male pin) on a 1 meter length of LMR195 low-loss coaxial cable terminating in an SMA plug (male pin), RP-SMA jack (female socket), N plug (male pin) or TNC plug (male pin) connector.

The ANT-MAG-RPSF-cccc-1 combines a strong magnetic mount with typical connectors to create new mounting options for most any whip/blade-style connectorized antenna.

FEATURES

- RP-SMA jack (male pin)
 - Integrated magnetic base securely attaches to ferrous metallic surfaces and allows for repositioning
 - Gold plated body and center contact
 - Silicone gasket provided to aid seal to antenna
- Connector options (cabled end)
 - SMA plug (male pin)
 - Reverse-polarity SMA plug (female socket)
 - N plug (male pin)
 - TNC plug (male pin)
- LMR195 low-loss coaxial cable
 - Compliant to VW-1
- ABS housing and PVC Base materials
 - Compliant to UL 940V-0
- IP67 rated (connectors, base and coax)

APPLICATIONS

- Cellular IoT - LTE-M (Cat-M1), NB-IoT
- Cellular - 5G/4G LTE/3G/2G
- LPWA
 - LoRaWAN®, Sigfox®, WiFi HaLow™ (802.11ah)
- ISM - Bluetooth®, ZigBee®
- GNSS - GPS, Galileo, BeiDou, QZSS
- Remote control, monitoring and sensing
- Internet of Things (IoT) devices
- Automotive, Industrial, Commercial, Enterprise

ORDERING INFORMATION

| Part Number | Description |
|---------------------|---|
| ANT-MAG-RPSF-SMAM-1 | Magnetic remote antenna mount RP-SMA jack (male pin) to SMA plug (male pin) on 1 meter of LMR195 low-loss coaxial cable |
| ANT-MAG-RPSF-RPSM-1 | Magnetic remote antenna mount RP-SMA jack (male pin) to RP-SMA plug (female socket) on 1 meter of LMR195 low-loss coaxial cable |
| ANT-MAG-RPSF-NM-1 | Magnetic remote antenna mount RP-SMA jack (male pin) to N plug (male pin) on 1 meter of LMR195 low-loss coaxial cable |
| ANT-MAG-RPSF-TNCM-1 | Magnetic remote antenna mount RP-SMA jack (male pin) to TNC plug (male pin) on 1 meter of LMR195 low-loss coaxial cable |

Available from Linx Technologies and select distributors and representatives.

TABLE 1. ELECTRICAL SPECIFICATIONS

| Parameter | Value | | | |
|-------------------------|-------------------|-------------------|-----------------|-------------------|
| Insertion Loss (dB max) | ANT-MAG-RPSF-SMAM | ANT-MAG-RPSF-RPSM | ANT-MAG-RPSF-NM | ANT-MAG-RPSF-TNCM |
| | 1.8 | 2.0 | 1.6 | 1.5 |
| VSWR (max) | 1.9 | 2.1 | 1.6 | 1.3 |
| Impedance | 50 Ω | | | |
| Insulation Resistance | 500 MΩ min. | | | |
| Max. Power Rating | 10 W | | | |
| Operating Temp. Range | -40 °C to +105 °C | | | |

PRODUCT DIMENSIONS

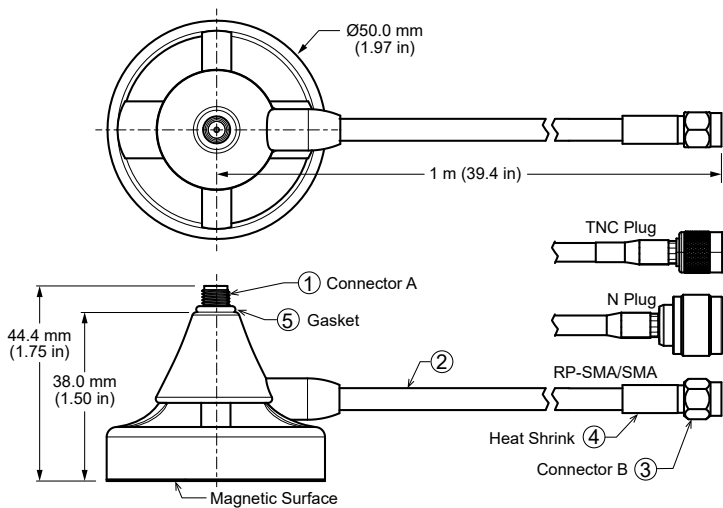


Figure 1: Product Dimensions for the ANT-MAG-RPSF-cccc-1 Cable Assembly

TABLE 2. CABLE ASSEMBLY COMPONENTS

| Item # | Description | Material | Finish |
|--------|---|----------|--------|
| 1 | Connector, RP-SMA jack (male pin) right-angle magnetic base | Brass | Gold |
| 2 | LMR195 coaxial cable | LMR195 | - |
| 3 | See Table for cable-end connector options | - | - |
| 4 | Heat Shrink Tubing | PTFE | - |
| 5 | Gasket | Silicone | - |

TABLE 3. CABLE ASSEMBLY MECHANICAL SPECIFICATIONS

| Parameter | Connector A RP-SMA jack (male pin) | Connector B (See Table 4) |
|------------------------|---------------------------------------|------------------------------|
| Fastening Type | 1/4"-36 UNS-2A threaded coupling | A |
| Recommended Torque | 0.9 N m (8.0 in lbs) | B |
| Coupling Nut Retention | 60 lbs. min. | C |
| Connector Durability | 500 cycles min. | D |
| Weight | | E |

TABLE 4. CABLE-END CONNECTOR (CONNECTOR B) PARAMETERS

| | SMA plug (male pin) | RP-SMA plug (female socket) | N plug (male pin) | TNC plug (male pin) |
|---|----------------------|-----------------------------|----------------------|------------------------|
| | ANT-MAG-RPSF-SMAM-1 | ANT-MAG-RPSF-RPSM-1 | ANT-MAG-RPSF-NP-1 | ANT-MAG-RPSF-TNC-1 |
| A | 1/4"-36 UNS-2B | 1/4"-36 UNS-2B | 5/8"-24UNEF | 7/16"-28UNEF |
| B | 0.9 N m (8.0 in lbs) | 0.9 N m (8.0 in lbs) | 0.9 N m (8.0 in lbs) | 1.14 N·m (10.0 in·lbs) |
| C | 60 lbs. min. | 60 lbs. min. | 60 lbs. min. | 100 lbs min. |
| D | 500 cycles min. | 500 cycles min. | 500 cycles min. | 500 cycles min. |
| E | 127.5 g (4.50 oz) | 127.3 g (4.50 oz) | 148.2 g (5.23 oz) | 126.8 g (4.47 oz) |

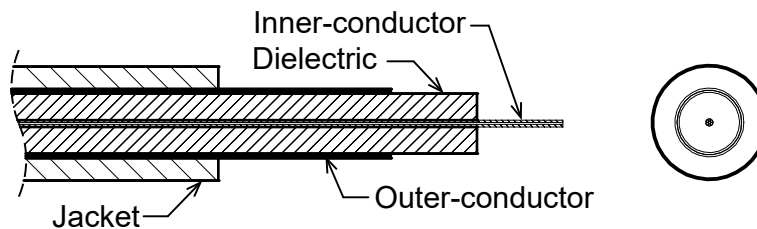
COAXIAL CABLE SPECIFICATIONS

Figure 2: Coaxial Cable Cutaway Diagram

TABLE 5. COAXIAL CABLE MATERIAL SPECIFICATIONS FOR LMR195

| LMR195 Coax | Material | Dimensions |
|-----------------|--|---------------------|
| Inner-Conductor | Copper, single strand | Ø0.95 mm (0.040 in) |
| Dielectric | Foam-PE | Ø2.95 mm (0.120 in) |
| Outer-Conductor | Aluminum mylar over copper braid, Coverage 85% | Ø3.19 mm (0.130 in) |
| Jacket | PVC, Black | Ø5.00 mm (0.200 in) |

TABLE 6. COAXIAL CABLE ELECTRICAL AND PHYSICAL SPECIFICATIONS FOR LMR195

| Parameter | Value | | |
|----------------------------|----------------------|------------------|--|
| Rated Temp Voltage | 105 °C 30 V | | |
| Conductor Resistance | 25.3 Ω/km max @20 °C | | |
| Insulation Resistance | 100 M Ω·km min. | | |
| Dielectric Strength | AC 500 V/Minute | | |
| Spark Test | 1.5 kV | | |
| Insulation | Unaged | Tensile Strength | 1500 psi min. (1.76 kg/mm ²) |
| | | Elongation | 200% min. |
| | Aged | Tensile Strength | Unaged min. 70% (168 hrs x 232 °C) |
| | | Elongation | Unaged min. 65% (168 hrs x 232 °C) |
| Jacket | Unaged | Tensile Strength | 2500 psi min. (1.76 kg/mm ²) |
| | | Elongation | 200% min. |
| | Aged | Tensile Strength | Unaged min. 70% (168 hrs x 232 °C) |
| | | Elongation | Unaged min. 65% (168 hrs x 232 °C) |
| Nominal Impedance | 50 ± 3 Ω | | |
| Minimum Inside Bend radius | 12.7 mm (0.5 in) | | |

INSERTION LOSS

Figure 3 shows the Insertion Loss for ANT-MAG-RPSF-cccc-1 cable assembly. Insertion loss is the loss of signal power (gain) resulting from the insertion of a device in a transmission line.

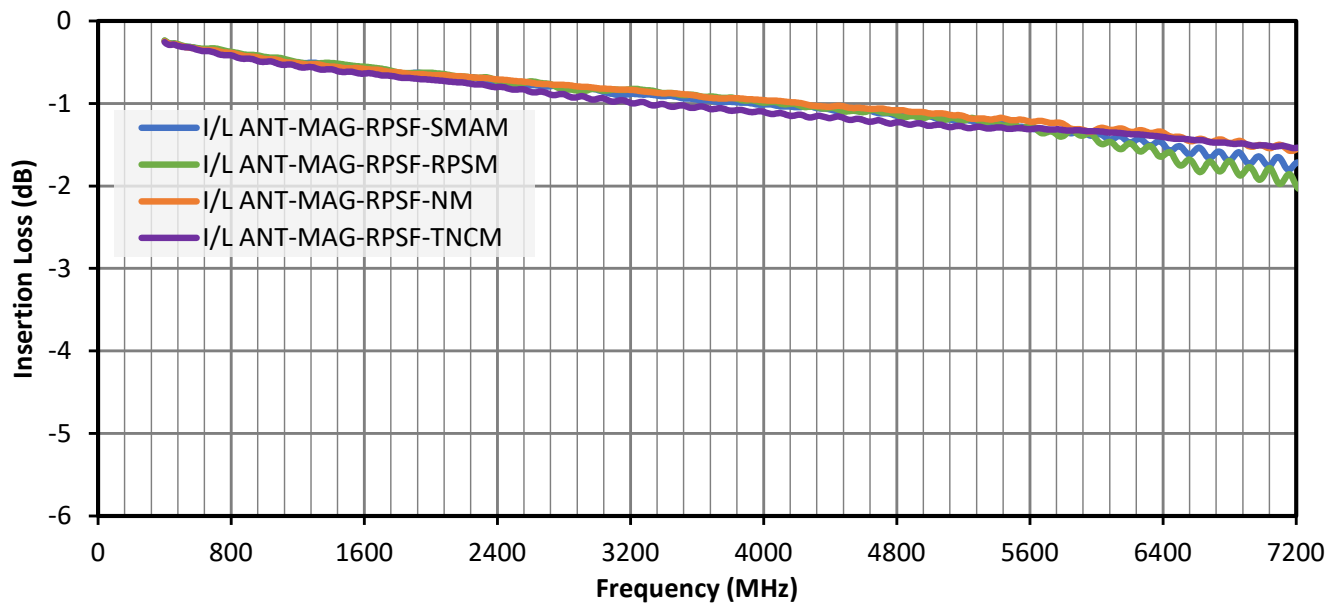


Figure 3: Insertion Loss for the ANT-MAG-RPSF-cccc-1 Cable Assembly

VSWR

Figure 4 provides the voltage standing wave ratio (VSWR) across the cable assembly's bandwidth for the ANT-MAG-RPSF-cccc-1 cable assembly. VSWR describes how efficiently power is transmitted through the cable assembly. A lower VSWR value indicates better performance at a given frequency.

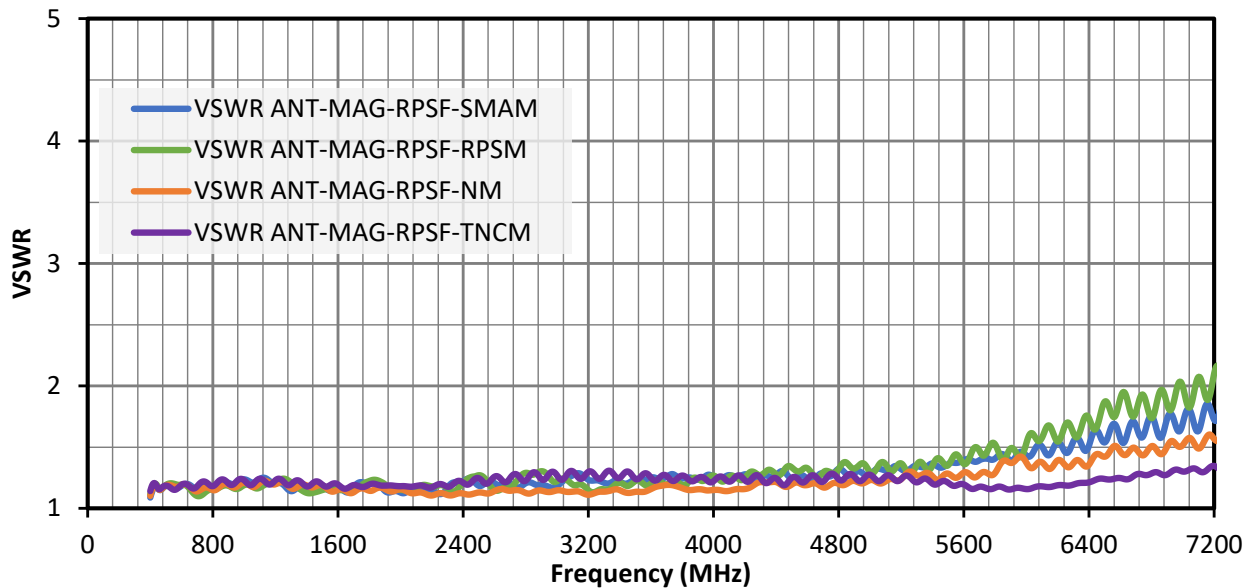


Figure 4: VSWR for the ANT-MAG-RPSF-cccc-1 Cable Assembly

PACKAGING INFORMATION

The ANT-MAG-RPSF-cccc-1 magnetic antenna base assembly is packaged in a clear plastic bag, which are sealed in labeled plastic bags of 10 pcs. Antennas are packaged in boxes in quantities of 100 pcs. Distribution channels may offer alternative packaging options.

CONNECTOR & ADAPTER DEFINITIONS AND USEFUL FORMULAS

VSWR - Voltage Standing Wave Ratio. VSWR is a unitless ratio that describes how efficiently power is transmitted through the connector. A lower VSWR value indicates better performance at a given frequency. VSWR is easily derived from Return Loss.

$$VSWR = \frac{10^{\left[\frac{\text{Return Loss}}{20}\right]} + 1}{10^{\left[\frac{\text{Return Loss}}{20}\right]} - 1}$$

Insertion Loss - The loss of signal power (gain) resulting from the insertion of a device in a transmission line. Insertion loss can be derived from the power transmitted to the load before the insertion of the component P_T and the power transmitted to the load after the insertion of the component P_R .

$$\text{Insertion Loss (dB)} = 10 \log_{10} \frac{P_T}{P_R}$$

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