

RG3 Remote Antenna Install SOP

Revision	Comments	Date	Author
1.0	First Draft	06/06/01	Justin Steves

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Acronyms

RG3	Residential Gas 3 Modules
RIMS	Retrofit information management system - SLB proprietary shop floor control system
HH	Hand Held Computer "DAP" "SYMBOL" or "PSION"
PSR	Packet Success Rate - A formula that compares the number of times that we have received a signal from a module with the number of times that we should have received a signal.
Remote Antenna	Refers to the omni whip antenna which will be "remoted". It is this antenna which is ideally "line of sight" of the MCC.
Link Assessment Tool (LAT)	This is a Schlumberger tool that provides real time feedback to the installer as to whether a site is suitable for module installation or whether further RF fix-up is required.

Related Documents

Document Title	Part Number	Revision	Date
RG3 Meter Module Installation SOP		5.0	2/2/01
Link Assessment Tool SOP		1.3	4/13/00
Targeted Selective Repeater RF Process SOP		1.5	4/24/01

1.0 Introduction

The Residential Gas Remote Antenna provides an RF fix-up solution for Residential Gas 3 installations which cannot be heard with adequate packet success rate due to the location of the gas meters. There are two foreseeable methods for deploying the Remote Antenna.

The first and most cost effective method is by reviewing a deployment area and determining the need for a remote antenna up front by using tools such as a LAT .

The second and probably most common will be a replacement of a normal ResGas module that is stale, is installed but not discovered, or has an unacceptable PSR. This is not preferred because it requires two site visits by an installer, it increases the number of modules in the RMA process, and there is an increase in lost data (takes longer to automate a route).

WARNING!



No modifications should be made to the module, cable, or antenna without the appropriate approval.

2.0 Required Tools

1. Screwdriver, Flat-tip 5/16-inch by 6-inch
2. Screwdriver, Flat-tip 1/4-inch by 5-inch
3. Screwdriver, Flat-tip 3/16-inch x 4-inch
4. Screwdriver, Phillips #1 x 4-inch
5. Screwdriver, Phillips #2 x 4-inch
6. Screwdriver, Flat-tip Z-shaped
7. Awl, Heavy duty
8. Scraper , Brass 1 1/4-inch wide
9. Diagonal cutters
10. Small lineman's pliers / vice grips
11. Wire tooth brush
12. Cordless Drill
13. Drill Bit, multi-purpose 3/8" x 10"
14. Screws, 1/4" Hexagon Head x 1" Self Tapping
15. Wrench, 5/16 open ended
16. All Purpose Silicone Sealant
17. Utility knife

3.0 Module and Part Numbers

Modules

The following modules are now available for ResGas Remote Antenna Installation

- 26-2023 American RG3 with Remote Antenna
- 56-2023 American RG3 with Remote Antenna-Utility Owned
- 26-2024 Sprague RG3 with Remote Antenna
- 56-2024 Sprague RG3 with Remote Antenna-Utility Owned
- 26-2025 Equimeter RG3 with Remote Antenna
- 56-2025 Equimeter RG3 with Remote Antenna-Utility Owned

Cables

The following is the minimum required length of cable for the remote antenna. This has an N connector on one end to connect to the antenna and an SMA connector on the other end to connect to the module.

- 19-1584, extension cable, 20 ft

In the case where the lengths above aren't adequate, there are extension cables, ready made with a female "N" connector on one end and a male "N" connector on the other are available in the following lengths:

- 19-1740, extension cable, 5 ft
- 19-1741, extension cable, 10 ft
- 19-1742, extension cable, 20 ft

Remote antennas

- Omni Whip Antenna, CellNet part number: 01-1239

Mounting Brackets

- 28-1800, bracket, antenna, meter box, right
- 28-1801, bracket, antenna, meter box, left
- 28-1802, bracket, antenna, ceiling mount
- 28-1804, bracket, antenna, wall, flat

- 28-1805, bracket, antenna, small right angle

4.0 General Guidelines

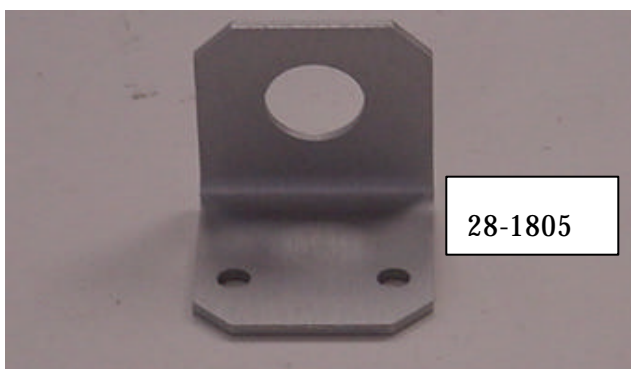
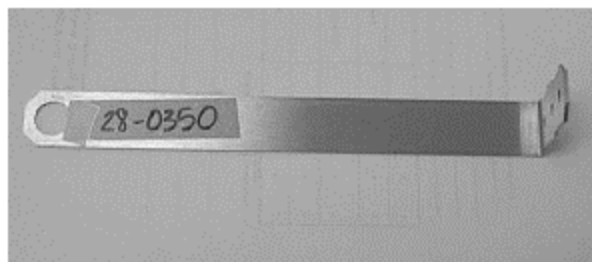
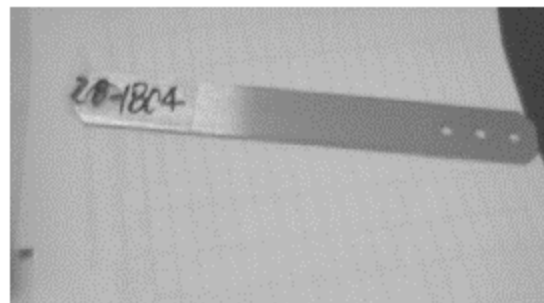
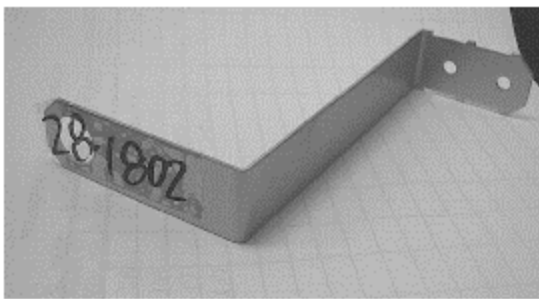
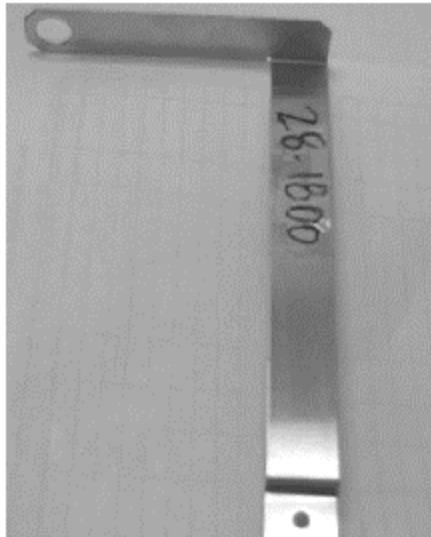
Determine the optimum location for the installation of the remote antenna. This will vary depending on the location of the meter. In general, the antenna should be:

- Installed as close to line of sight to an MCC as is possible.
- Mounted so that it is at least 4 inches from the nearest structure.
- For inside installations, remote antennas may be mounted in the proximity of an available window, or may need to be routed to the outside if the signal strength isn't great enough.
- Mounted so that the length of cable is minimized. The minimum cable length is 20' due to FCC certification. While there are no specific guidelines for maximum cable length, every 25 ft increases the RF link loss by about 2.5dB.



As a guideline for cost, when there are 5 or more modules in the same location that are not being heard from, it is cheaper to use a selective repeater.

Figure 1 Mounting Brackets



5.0 Procedure

When available use the LAT tool to determine the best location for mounting the antenna. Ideally you will place the antenna where you hear from MCC's the best. You may or may not be able to hear from any MCC's. This does not mean that the antenna will not work since the antenna strength is greater than the antenna strength on the LAT. Ensure that you have the correct cable length and mounting equipment for the mounting site that you choose.

Begin by mounting the antenna in the appropriate location and running the small end of the cable through the wall (if mounted outside). Tie any slack in the cable neatly behind the meter and connect the cable to the module. Follow the instructions of the RG3 Meter Module Installation SOP. Seal any holes that you made with silicone sealant. Clean up all debris and secure the site upon exit.