

Antenna Alignment

The Test Mode feature of the RTS-100-N3RH is useful for positioning the cellular antenna to achieve maximum signal strength. A cellular handset must be plugged into J3 to do this.

1. Place unit in Test Mode by turning off power at the handset, moving switch SW1 to TEST, and turning power on again. The red LED/switch will light up. Alternatively, from User Mode (SW1 in NORMAL) enter **FCN00**83786633STO** (or **FCN RCL**).
2. Several sets of alternating numbers will be displayed on the cellular handset. The line with six digits displays on the left three digits for the control channel and three digits for the signal strength (Received Signal Strength Indication, RSSI) on the right.
3. To check for proper antenna position, move the antenna and check the readout. As the signal improves, the numbers for signal strength will increase.
4. When using a directional antenna, rotate the antenna in 15-degree increments, pause to allow the signal to stabilize, and check the readout. After a full circle is completed, note the optimum antenna position.
5. Power the unit down from the handset, move SW1 to "Normal", mount the antenna, and power the RTS unit up from the handset. The red LED/switch will light up.

Programming

The RTS is designed to be easily programmed in User Mode or Test Mode provided a cellular handset is available. User-Mode programming is described in the Motorola NAM programming guide. To program the RTS in Test Mode, proceed as follows:

1. Connect any Motorola handset for Series III or Series IV radios at J3 of the RTS I/O board. Power the unit down from the handset and access test mode as described above.

2. To start the programming process, enter **#55#** on the handset keypad. Follow the Motorola instructions for test mode programming of Series III or Series IV transceivers. Pressing * after the final programming step 16, will program the transceiver.
3. Power the unit down from the handset, move SW1 to "Normal", and power the RTS unit up again. The red LED/switch will now light. Disconnect the cellular handset. The RTS unit is now ready for operation.

AutoSafe Power-up Circuit

The RTS-100-N3RH is equipped with a special power-up circuit that will energize the transceiver if power has been accidentally turned off from the Motorola cellular handset, the red/LED switch, or by a power failure. After approximately 30 seconds, the transceiver will power up automatically.

The power-up circuit will be disabled if the RTS unit has been shut off by the thermal shutoff protection circuit. This circuit will turn the RTS-100-N3RH off if the temperature is below -40F or above +140F. When the temperature rises to -38F or drops to +138F, the unit will be turned on again.

Operating the RTS-100-N3RH from a Battery

Use a suitable 12 VDC battery. Connect the battery at connector J8. The green LED DS1 will come on. The red LED/switch and the transceiver will be turned on at the same time.

Your RTS-100-N3RH is equipped with a circuit that monitors the battery voltage to prevent sulfuration of the battery. When the battery voltage drops below 10.8 volts, the cellular transceiver is turned off within approximately 10 seconds.

To energize the RTS unit, you must apply at least 85 VAC at the terminal block for AC input. Alternatively, disconnect the discharged battery and connect a fully charged battery at J8. The RTS-100-N3RH will power up as soon as power is applied.

Troubleshooting

Condition	Actions
Neon lamp LP1 does not light up.	<ol style="list-style-type: none"> 1. Turn off power. 2. Check AC wiring. 3. Check power source. 4. Reset circuit breaker. 5. Turn on power. 6. If wiring and power OK and LP1 does not light up, call TransTel for further actions.
LP1 lights up but diode DS1 does not light up.	<ol style="list-style-type: none"> 1. Turn off power. 2. Check connections between power supply and I/O board for tightness. 3. Turn on power. 4. If DS1 does not light up, call TransTel.
No dial tone.	<ol style="list-style-type: none"> 1. Check connection at J6 for correct engagement and tightness. 2. Check connections J4 and J5 for tightness. 3. If LED/switch of interface module is off, gently press switch to turn module on. 4. If still no dial tone, call TransTel.
Poor signal.	<ol style="list-style-type: none"> 1. Check antenna connections. 2. Check antenna location, change if necessary; use short antenna cable. 3. Replace omnidirectional antenna with suitable directional antenna.

Installation and Operation of the TransTel RTS-100-N3RH with Autoranging Power Supply and 85 to 320 VAC Input Range

Installation

1. Record the telephone number assigned by the cellular carrier on the instruction sheet attached to the inside of the RTS door. The ESN (electronic serial number) of the transceiver has been printed on a label next to the instruction sheet.
2. Connect earth ground to the external chassis lug.
3. Connect antenna cable to TNC connector on outside bottom of enclosure. Tighten by hand only; do not use tools.
4. Connect AC wiring to large three-position terminal block in shielded bottom section of I/O board as follows:

Line or **Phase 1** to Line (*HOT*; black or brown wire)

Neutral or **Phase 2** to Neutral (white or blue wire)

Ground to Ground (green or green/yellow stripe wire).

5. Activate external AC source. Neon light LP1 comes on, diode DS1 will light up, and the transceiver will be turned on. If LP1 does not light, turn off power immediately and see troubleshooting section for further instructions.
6. Make sure that the illuminated red LED/switch on the interface module is on. If not, gently depress the switch to turn the light on. In case of failure, contact TransTel.
7. Connect recorder/data input to J7. For voice calls, connect a standard telephone or butt set to the same J7 jack.
8. Make a test call to verify cellular service.
9. If you cannot complete a call, dial 611 to make sure that cellular service has been activated.
10. If you hear a hi/lo tone, check antenna connector, antenna cabling (use short antenna cables), and antenna position.

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