

# TS4000 Remote Diagnostics

Remote Diagnostics is a TS4000 firmware option that allows the status of remote TS4000s to be checked, over the air, from any other TS4000.

## Features

- Allows for the test and verification of a system independent of host equipment (RTU, GPS, etc.).
- Provides easy determination of the radio coverage and signal quality between TS4000s.
- Available while the system in operation.
- Can be used through Serial Port 1 or Serial Port 2 of the TS4000.
- Windows display software provided, free of charge, with the TS4000 Configuration Software.
- Remote Diagnostics function is available to other equipment through the use of control strings.
- Upgrade available for all TS4000s. Contact Teledesign for pricing.

The screenshot shows the 'TS4000 Configuration' software window. The main area displays a table of diagnostic results. The table has columns for Group Address, Individual Address, Path, RSSI Inbound (-dBm), RSSI Outbound (-dBm), RSSI Repeater (-dBm), Input Voltage, Radio Voltage, Temp (deg C), Temp (deg F), Tx Power Forward (watts), Tx Power Reflected (watts), Successes/Attempts, Response Time (sec), and Last Attempt. The data rows show various paths like 'Local', 'Repeater: 02.104', and 'Direct' with corresponding signal strength and temperature readings.

| Group Address | Individual Address | Path             | RSSI Inbound (-dBm) | RSSI Outbound (-dBm) | RSSI Repeater (-dBm) | Input Voltage | Radio Voltage | Temp (deg C) | Temp (deg F) | Tx Power Forward (watts) | Tx Power Reflected (watts) | Successes/Attempts | Response Time (sec) | Last Attempt |
|---------------|--------------------|------------------|---------------------|----------------------|----------------------|---------------|---------------|--------------|--------------|--------------------------|----------------------------|--------------------|---------------------|--------------|
| 02            | 900B               | Local            | 83                  | NA                   | NA                   | 13.58         | 12.97         | 36           | 97           | 5.0                      | NA                         | 11/11              | 0.05                | Successful   |
| 02            | 900B               | Repeater: 02.104 | 83                  | 83                   | 83                   | 13.58         | 12.94         | 36           | 97           | 5.0                      | NA                         | 8/8                | 0.33                | Successful   |
| 02            | 998                | Direct           | 63                  | 62                   | NA                   | 13.58         | 12.97         | 36           | 97           | 5.0                      | NA                         | 9/9                | 0.27                | Successful   |
| 02            | 998                | Repeater: 02.104 | 83                  | 62                   | 94                   | 13.58         | 12.97         | 36           | 97           | 5.0                      | NA                         | 9/9                | 0.36                | Successful   |
| 02            | 502                | Direct           | 70                  | 69                   | NA                   | 13.61         | 13.01         | 36           | 97           | 5.0                      | NA                         | 9/9                | 0.22                | Successful   |
| 02            | 502                | Repeater: 02.104 | 83                  | 69                   | 97                   | 13.61         | 13.01         | 36           | 97           | 5.0                      | NA                         | 9/9                | 0.37                | Successful   |
| 02            | 503                |                  |                     |                      |                      |               |               |              |              |                          |                            | 0/4                |                     | Failed       |
| 02            | 501                | Direct           | 70                  | 70                   | NA                   | 13.61         | 12.95         | 35           | 95           | 5.0                      | NA                         | 8/8                | 0.17                | Successful   |
| 02            | 104                | Direct           | 83                  | 82                   | NA                   | 13.50         | 13.00         | 36           | 97           | 5.1                      | NA                         | 8/8                | 0.15                | Successful   |

## Diagnostic Parameters

- Address – Indicates the address and the active unit in a redundancy switch (A or B).
- Path:
  - Local – From the modem physically connected to the PC.
  - Direct – Over the air directly without a store and forward repeat.
  - Repeater – Over the air through one or more store and forward repeaters. The list shows the last five repeaters.
- RSSI Inbound – The RSSI (Receive Signal Strength) of the incoming response packet.
- RSSI Outbound – The RSSI at the remote TS4000.
- RSSI Repeater – The RSSI of the returning packet at the first store and forward repeater.
- Input Voltage – The input voltage to the TS4000.
- Radio Voltage – The internal regulated voltage of the TS4000.
- Temperature – The internal temperature of the TS4000.
- Transmit Power – The transmit power of the TS4000. Not available on all TS4000 models.
- Successes/Attempts – The number of successfully received and attempted diagnostics packets.
- Response Time – The over the air response time of the last successful attempt.

