Tantalus

TANTALUS SYSTEMS CORP.

RT-2200
Instruction Manual

Notice
The information contained in this document is subject to change without notice.

Tantalus makes no warranty of any kind with regard to this material, including, but not limited to the implied warranties of merchantability and fitness for a particular purpose. Tantalus shall not be liable for errors contained herein or incidental consequential damages in connection with the furnishing, performance, or use of this material.

FCC COMPLIANCE STATEMENT

Changes or modifications not expressly approved by Tantalus Systems Corp. may void your authority to operate the equipment described in this manual.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is not guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, you are encouraged to try and correct the interference by one of more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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Product Description

The RT-2200, a key component of the Tantalus Utility Network, is a transceiver, which is designed to collect data from the surrounding meters and deliver it from a single point, using Tantalus' ultra-efficient burst-mode technology, which enables a large number of short data packets to be delivered at high speeds over the network.

The RT-2200 sits behind a TC-2200-equipped meter and provides two-way communications between the Network Controller (utility) and the meter (customer).

GENERAL INFORMATION

Tantalus provides two-way, real-time data communications networks to monitor and control electric utilities. Our long-range wireless networks unite a utility's applications, making meter reading, load management, and distribution automation cost-effective and practical throughout urban and rural service areas.

The Tantalus Utility Network uses long-range 220 MHz spectrum to deliver valued applications such as outage management, power quality monitoring, meter reading, load management, and distribution automation to utilities. The Network provides robust two-way communications throughout a utility's diverse service territory – including residential, commercial, and industrial.

Functional

Data rate: 1600/3200 bps

Mechanical interfaces:

- Form S connector for installing into meter socket
- Form S socket for accepting meters equipped with TC-XXXX modules

Data interface: optical

Radio

Type: frequency agile, very narrow-band GFSK

Frequency range: 220-222 MHz

Channels: 200 with 5 kHz spacing

RF power output: +37 dBm (5 watts)

Out of band Spurious: < -65 dBc

Frequency stability: < +/- 1.5 ppm

Standard antenna: internal mounted

Standards

CFR Title 47 Part 15b (unintentional radiators)

CFR Title 47 Part 90, Sub-Part I & T (private land mobile radio services)

CSA C22.2 No. 0-M91 (product safety)

NEMA 4X (environmental)

Power

Power supply: 240 VAC from AC line mains

Power consumption

- Standby: 2 watts
- Transmit: 12 watts (pulsed)
- Outage reporting (optional)

Physical

Size: 13.5" (H) 7.6" (W) 2.8" (D)

Weight: 6 lbs

Storage temperature range: -40° to +85°C

Operating temperature range: -30° to +60°C

Operating humidity range: 5 to 95% non-condensing relative humidity

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Installing the RT-2200

Warning: Energized meters, meter sockets and distribution lines present the risk of electrical shock. All work on this equipment should be performed by qualified metering specialists or industrial electricians. Personnel working with this equipment should follow all utility company established operation and safety procedures.

BEFORE YOU BEGIN

1. Advise the customer to turn off any sensitive electronic equipment including computers, stereos, televisions, etc.

2. Tell the customer that the power will be off for approximately 5 – 10 minutes.

Note: For safety reasons, we recommend you attach a clear meter socket cover with a meter ring to the front of the RT-2200 unit prior to installation.

INSTALL THE RT-2200

3. Remove the existing meter from the meter socket.

4. Inspect the "jaws" of the meter socket to ensure that they are in good working condition (ie: the jaws should not be spread too far apart).

[insert diagram of acceptable and unacceptable "jaws")

5. Perform a voltage check, a line-to-line check, and a line-to-neutral check to ensure the voltage is at proper levels.

6. Visually inspect the back of the RT-2200 unit to ensure the power pins on the front and back are secure and everything is in place.

[insert diagram of back of RT-2200 with cotter pins in place]

7. Grasp the RT-2200 unit on the top left and bottom right corners and plug it into the meter socket firmly.

[insert diagram of hands holding RT-2200 unit in correct position]

    8.   Install a meter ring and seal on the unit to secure it to the meter socket.

[insert diagram of meter ring and seal on Rt-2200)

VERIFY CONNECTION TO THE NETWORK CONTROLLER

RT LED STATUS INDICATORS	
Start-up/Power up	Solid RED
Scanning	Flashing RED
Found Tantalus Channel	Flashing ONG
Received message from Network Controller (one-way)	Solid ONG
Received ACK to response to Network Controller (two-way)	Solid GRN
Failed to receive ACK to subsequent response to Network Controller (return to one-way)	Solid ONG

    9.   Check the Communication LED at the bottom of the RT unit to ensure full two-way communication with the NC-2200.

IF	THEN
The RT-2200 does not power up.	Remove the RT unit and replace it with another one.
The RT-2200 powers up but does not appear to find a Tantalus channel.	Remove the RT unit and replace it with another one.
The RT-2200 finds the Tantalus channel but does not appear to be addressed by the controller.	Contact the NC-2200 Administrator to verify that the unit is being installed and has been registered in the database. If it has not been registered, ask that it be registered now. Also, ask the Administrator to set the power level at maximum and the RT channel ID to the

	correct channel.

   10. Once full two-way communication is verified, install the meter equipped with a TC-2200 into the meter socket of the RT-2200.

   11. Make sure the TC-2200 powers up to full two-way communication by checking the LED indicator.

IF	THEN
The TC-2200 does not power up (ie: the LED does not turn on).	Remove the TC-2200 equipped meter and use another unit.
The TC-2200 powers up but does not appear to establish communications with the RT-2200.	Remove the TC-2200 equipped meter and use another unit.

   12. Once communication between the TC and RT units is established, install a meter ring and seal to secure the meter to the RT-2200 unit.