EPC Dual-Band Reader
Model Mercury 2

Quick Start Guide

EPC Dual-Band Reader Model MERCURY 2

Please read this document in its entirety before attempting installation of the MERCURY 2. It is important that you fully understand the installation procedure before powering up the MERCURY 2.

WARNING

DO NOT POWER UP THE MERCURY 2 IF ANY ANTENNA PORTS ARE UNCONNECTED. BOTH HF ANTENNA PORTS SHOULD HAVE TERMINATORS CONNECTED TO THEM AND BOTH UHF PORTS SHOULD HAVE EITHER ANTENNAS OR TERMINATORS CONNECTED TO THEM.

MAKE SURE THAT ANTENNA CONNECTORS AND THE TERMINATORS ARE FIRMLY ATTACHED.

FAILURE TO FOLLOW BOTH THESE WARNINGS WILL CAUSE IRREPARABLE DAMAGE TO THE MERCURY 2.

1. **Packing List**

   Please check the package to make sure it includes the following items:

   - EPC Dual-Band Reader model MERCURY 2
   - 15 V DC 3A power adapter
   - 2 HF terminators (attached to the HF ports on the connector panel)
   - 2 UHF terminators (attached to the UHF ports on the connector panel)
   - Quick Reference Guide (this document)
   - FCC Manual Supplement (please read this carefully)

   Visually inspect the items. If any items are incorrect, missing, or appear to be damaged, please contact the XYZ representative listed at the end of this document. Please retain all packing material in case you need to return the MERCURY 2.

   Required components which are *not included* in the package:

   - Cushcraft UHF patch antenna model numbers S9028P or S9028PC with a 12 foot custom RF cable and a reverse polarity TNC connector. (Use *only* these antennas with the MERCURY 2)

   FCC regulations require that care be taken to limit exposure to radio frequency radiation. Please consult the FCC Manual Supplement for important safety and compliance information.

2. Connector Panel

The only external interface of the MERCURY 2 is the connector panel pictured below. There are no user serviceable parts inside.
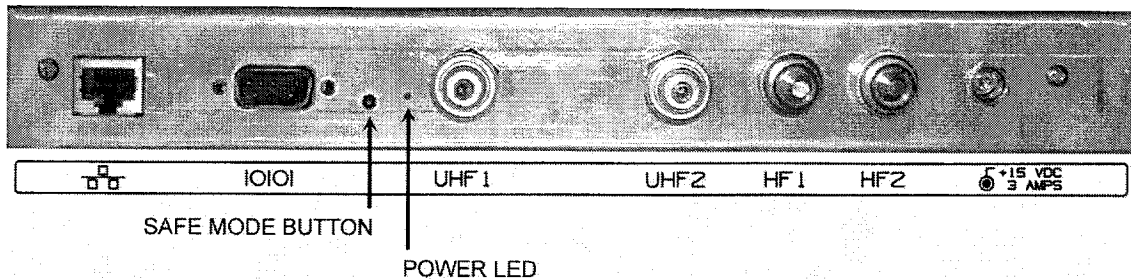

The connectors on the connector panel are designated as follows:

- ETH1 – RJ45 ethernet interface
- SER1 – RS232 serial interface
- SAFE MODE BUTTON – allows factory default booting of MERCURY 2 (see section 6)
- LED – illuminated when power is on
- UHF1 and UHF2 – UHF antenna ports
- HF1 and HF2 – HF antenna interface (not supported in this release)
- DC +15V 3A – DC power jack

The MERCURY 2 is shipped with HF1 and HF2 terminators attached. **DO NOT REMOVE THESE CONNECTORS. HF FUNCTIONALITY IS NOT SUPPORTED IN THIS PRODUCT RELEASE.**

3. Setup

- Connect one or two UHF antennas to the MERCURY 2. Use only patch antennas from Cushcraft models S9028P or S9028PC.
- If using one UHF antenna, be sure to attach a terminator to the unused port. Failure to do so will irreparably damage the MERCURY 2.
- Power the MERCURY 2 up using the power supply provided.
- Connect the MERCURY 2 to the network using an ethernet cable connecting to the ethernet port. Alternatively: Connect the MERCURY 2 directly to a PC using a crossover ethernet cable.
- Wait for about 60 seconds for the MERCURY 2 to completely boot up.
- Start a web browser from any network-enabled PC.
- Browse to "http:// 10.0.0.101" using any Java-enabled browser. This will bring up a web page titled "EPC /Multi-Band Reader".

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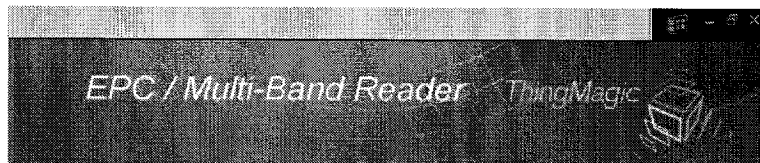
4. **Default Network Configuration**
   The MERCURY 2 is shipped with the following default network configuration.
   IP address: 10.0.0.101
   Netmask: 255.0.0.0
   Default Gateway: 10.0.0.1

5. **Web-based Configurator and Query Interface**

   ● **Status Page**
   Indicates the current status and configuration of the Tag. This is a read-only page.

   ● **Query Page**
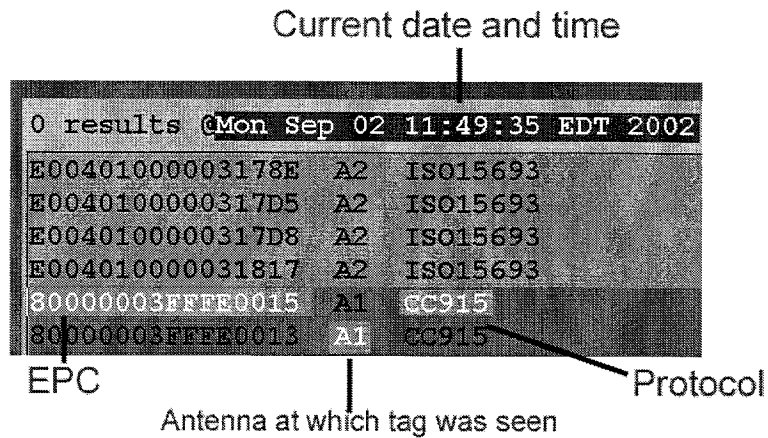   This page provides a browser-based interface to the SQL query server runnning on the MERCURY 2.

   ● Click "Query" to enter the query interface.

   ● Click the "Start" button to start interrogating EPC tags.

The EPC numbers of tags in the read field will appear in the main window and will remain there until the "Clear Output" button is clicked.

Current date and time

```
0 results @Mon Sep 02 11:49:35 EDT 2002
E004010000003178E   A2   ISO15693
E0040100000317D5    A2   ISO15693
E0040100000317D8    A2   ISO15693
E004010000031817    A2   ISO15693
80000003FFFE0015    A1   CC915
80000003FFFE0013    A1   CC915
```

EPC   Protocol
Antenna at which tag was seen

Click "Stop" to stop the tag search.

Click "Show Raw" to see the raw search output. This mode makes it easier to see when tags are being detected.
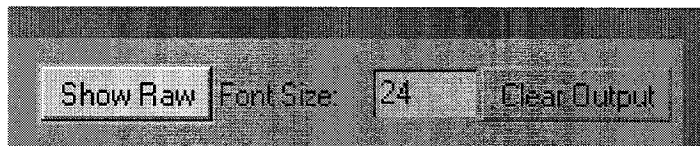
Click "Hide Raw" (same button as "Show Raw") to switch back to the original mode

To run a single search cycle, make sure that a tag search is not currently running. This can be done by clicking "Stop". Then, click "Query Once" or press "Enter" with the cursor in the "Query" field.
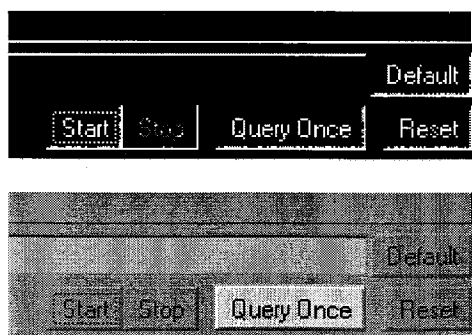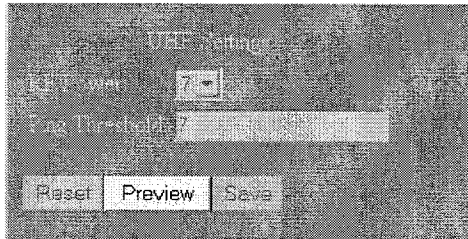
- **Settings Page**

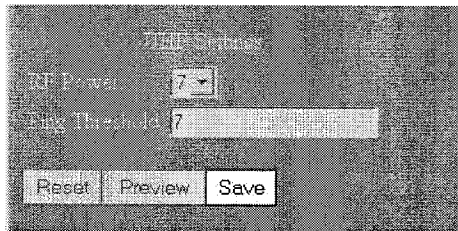This page displays MERCURY 2 settings and allows the user to review and edit them.
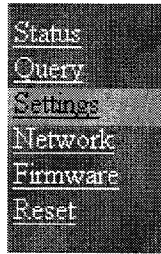
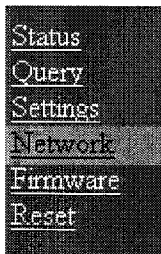Click "Preview" to try out new settings without saving them.

Click "Save" to make the settings permanent. Do not exit the page until you see a confirmation message "New settings saved". Changes are not permanent unless you see this message.

- **Network Page**

This page indicates the network setting and allows the users review and edit IP address, netmask, and default gateway.
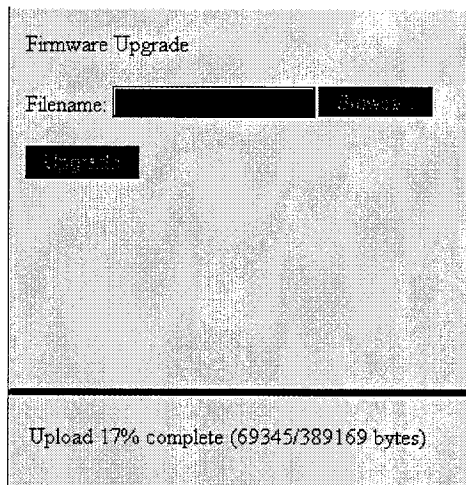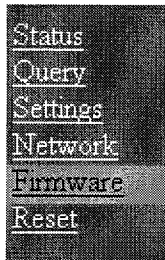
After changing the network configuration the MERCURY 2 needs to be software reset for the changes to take effect. See "Reset" section below for details on how to accomplish this.
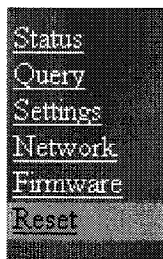
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Firmware Page

This page allows the user to rewrite the firmware on the MERCURY 2. Browse your computer for the new firmware and click "Enter".


- **Reset Page**

Clicking the "Reset" button resets the system and causes saved changes to take effect.

6. **Safe mode button**

The "safe mode button" on the connector panel allows the user to recover from any errors that occur during a firmware upgrade. If an error occurs that renders the MERCURY 2 inoperable, power down the MERCURY 2. Press and hold the safe mode button with a paperclip or small screwdriver and power up the MERCURY 2. Continue to hold the safe mode button for 60 seconds after connecting power to allow the MERCURY 2 to boot completely. This will temporarily load factory-default settings and allow you to attempt a firmware modification again.
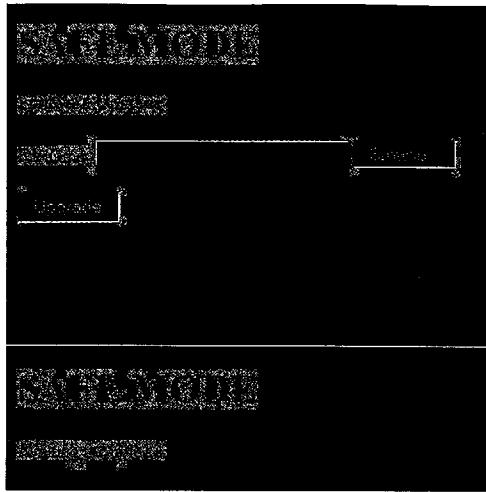
In safe mode, all web page backgrounds will be red and will include the words "Safe Mode".

7. Support

http://www.thingmagic.com