

# PATSCAN CMR Technical Operational Manual v.2.08

08/14/2017



© 2017 Patriot One Technologies  
All rights reserved.

No part of this publication may be reproduced, distributed, or transmitted in any form or by any means, including photocopying, recording, or other electronic or mechanical methods, without the prior written permission of the publisher, except for training purposes.

Patriot One Technologies Inc.  
Unit 302 – 3380 South Service Rd  
Burlington, Ontario L7N 3J5 Canada  
+1 (888) 728-1832  
info@patriot1tech.com

## Compliance Statement(s)/Notices

### FCC Compliance Statement

Operation of this device is restricted to law enforcement, emergency rescue and firefighter personnel. Operation by any other party is a violation of 47 U.S.C. 301 and could subject the operator to serious legal penalties.

Parties operating this equipment must hold a license issued by the Federal Communications Commission to operate a transmitter in the Public Safety Radio Pool under part 90 of this chapter. The license may be held by the organization for which the UWB operator works on a paid or volunteer basis.

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 no 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, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to 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.

This device complies with part 15 of the FCC Rules. Operation is subject to the following conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment uses the following approved antenna only and may not be used with other antenna types of higher gain:

- Manufacturer — Patriot One Technologies Inc.
- Type — Cavity-backed Monopole
- Model — PAT-10005
- Frequency Range — 300 – 4800 MHz
- In/Out Impedance — 50 Ohms
- Gain — 5dBi average, 8dBi peak

Patriot One authorized professional installers shall be responsible for ensuring that the proper antenna is employed.

## **Industry Canada Statement**

This Through-wall Radar Imaging Device shall be operated only by law enforcement agencies or emergency rescue or firefighting organizations that are under a local, provincial or federal authority. The equipment is to be operated only in providing services and for necessary training operations.

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

This radio transmitter IC: 22739-CMR has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

Approved Antenna:

- Manufacturer: Patriot One Technologies Inc.
- Type: Cavity-backed Monopole
- Model: PAT-10005
- Frequency Range: 300 - 4800 MHz
- In/Out Impedance: 50 Ohms
- Gain: 5dBi average, 8dBi peak

Patriot One authorized professional installers shall be responsible for ensuring that the proper antenna is employed.

The CMR device does not detect tags or transfer data or voice information.

The CMR device contains a manual switch which the operator can use to remove power to the system, causing the transmitter to cease operation immediately.

## **FCC Coordination**

The Patriot One Technologies Inc. CMR device is considered a UWB imaging device and is subject to FCC Coordination requirements under the CFR Title 47 Chapter I, Sub chapter A, Part 15, Subpart F , Section 15.525. As such it is the responsibility of the users of these systems to submit the required information to the FCC prior to use of

these systems.

UWB imaging systems require coordination through the FCC before the equipment may be used. The operator shall comply with any constraints on equipment usage resulting from this coordination.

The users of UWB imaging devices shall supply operational areas to the FCC Office of Engineering and Technology, which shall coordinate this information with the Federal Government through the National Telecommunications and Information Administration. The information provided by the UWB operator shall include the name, address and other pertinent contact information of the user, the desired geographical area(s) of operation, and the FCC ID number and other nomenclature of the UWB device. If the imaging device is intended to be used for mobile applications, the geographical area(s) of operation may be the state(s) or county(ies) in which the equipment will be operated. The operator of an imaging system used for fixed operation shall supply a specific geographical location or the address at which the equipment will be operated. This material shall be submitted to Frequency Coordination Branch, OET, Federal Communications Commission, 445 12th Street, SW, Washington, D.C. 20554, Attn: UWB Coordination.

The operator shall comply with any constraints on equipment usage resulting from this coordination.

### **Modifications Statement**

PATSCAN CMR is certified for use only when installed by professionals authorized by Patriot One Technologies: any changes/modifications to the system's parts or configuration may affect results. Changes or modifications not expressly approved by Patriot One Technologies Inc. could void the user's authority to operate the equipment.

### **Professional Installation Statement**

PATSCAN CMR is certified for use only when installed by trained professionals authorized by Patriot One Technologies.

### **Product Description**

PATSCAN CMR consists of an antenna module and a locked service box containing the Patriot One transceiver and Mini PC devices, installed by an authorized installer, typically within an entry passage wall. It also includes a VM installed on the client's network.

## Limits to Available Operations

The only operations available are to use the PATSCAN CMR web-based user interface to monitor system operations. The transceiver configuration is contained in a read-only, pre-configured state file that cannot be modified.

## Operating Instructions

### System Start-Up

The system turns on automatically when plugged into power. In case of a power outage, the system will restart automatically once power is restored. It typically takes under five minutes for the system to re-start in the event of a shutdown or power-off.

The user can access the web interface to verify that the system is running.

### System Shutdown and Restart

The CMR device contains a manual switch on the power bar which can be used to shutdown the system.

If a restart is necessary, the user can power the system off and again again using the provided power switch.

### Confirming System Operation

In order to confirm the radar is working, the user should check the Analytics page of the web user interface (see Figure 2), If the Raw Energy Plot value is changing, the radar is emitting power and is operational.

### Using the Web User Interface

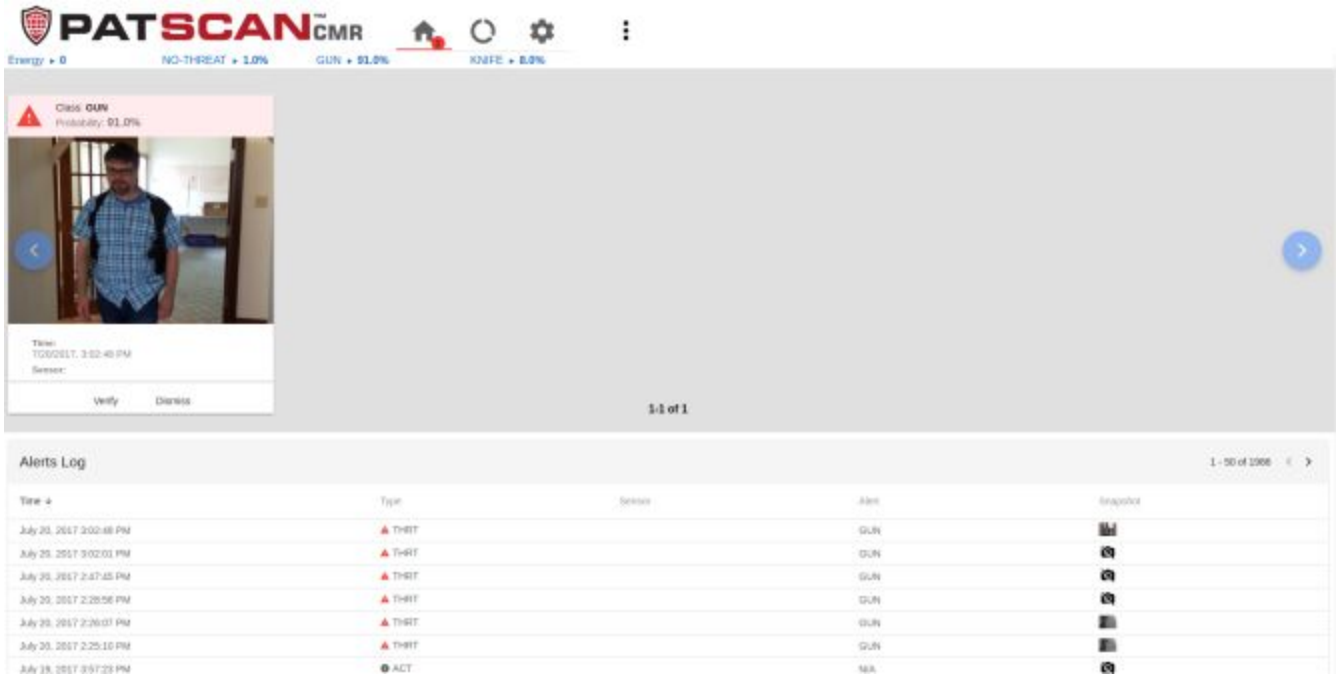
#### *Accessing the Interface*

The user accesses the web-based user interface by navigating, in a current version of Google Chrome or Mozilla Firefox, to the URL <servername>:4200. The interface consists of three pages: the home page, the analytics page and the settings page. All are described below.

## The Home Page

The home page shows an alert for each threat detected by the system, as a separate “card” in a carousel on the home page. Individual cards can be removed from the carousel by clicking **dismiss**. (Threats are defined through the system configuration and training process.)

The home page also shows a log of all past alerts, both those for detected potential threats and those indicating system or component failures. System or component issues will be resolved by the system installer.



The screenshot displays the PATSCAN CMR interface. At the top, there is a navigation bar with the PATSCAN CMR logo and several status indicators: Energy + 0, NO-THREAT + 1.0%, GUN + 51.0%, and KSAFE + 8.0%. Below the navigation bar, a carousel shows a single alert card for a 'Class: GUN' with a 'Probability: 91.0%'. The card includes a video frame of a person, a timestamp 'Time: TUEDEC17 3:52:40 PM', and a 'Sensor:' field. Below the video frame are 'Verify' and 'Dismiss' buttons. The carousel is labeled '1 of 1'. Below the carousel is an 'Alerts Log' table with columns for Time, Type, Sensor, Alert, and Snapshot. The table contains seven rows of data, including several 'THREAT' entries and one 'ACT' entry.

Time	Type	Sensor	Alert	Snapshot
July 20, 2017 3:02:48 PM	THREAT		GUN	
July 20, 2017 3:02:01 PM	THREAT		GUN	
July 20, 2017 2:47:45 PM	THREAT		GUN	
July 20, 2017 2:28:56 PM	THREAT		GUN	
July 20, 2017 2:26:07 PM	THREAT		GUN	
July 20, 2017 2:25:10 PM	THREAT		GUN	
July 19, 2017 8:57:23 PM	ACT		NA	

Figure 1: Home Page

## The Analytics Page

The analytics page shows various analytics regarding the radar.



Figure 2: Analytics Page

### The Settings Page

The Settings page shows which radar devices are connected, the threat threshold that will trigger an alert and the version number of all the software running.



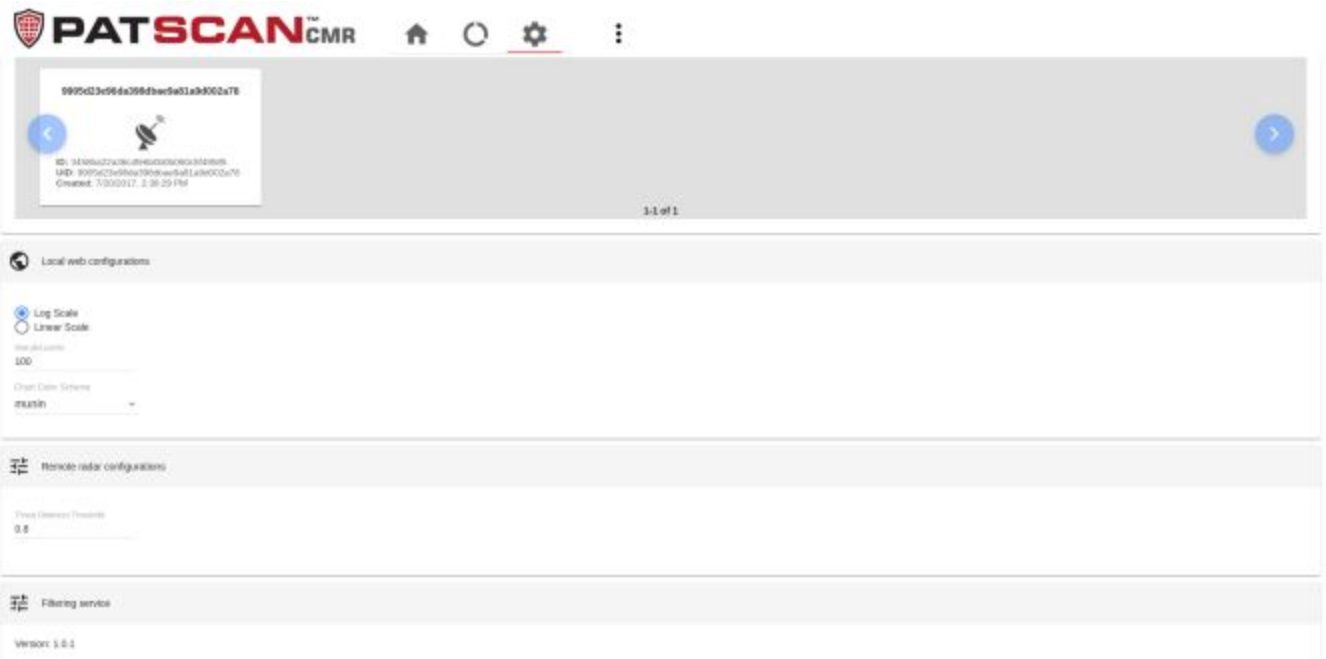


Figure 3: Settings Page