



TRACKING EMERGENCY COMMAND AND CONTROL  
SYSTEM

*fire*TrakR1<sup>TM</sup>

MODEL MMI-TRAKR1

**OWNERS MANUAL**

Microwave Monolithics Incorporated  
2263 Ward Ave  
Simi Valley, CA 93065

Tel: (805) 584-6642  
FAX: (805) 584-9594



## TABLE OF CONTENTS

1) Introduction .....	1
2) Mounting .....	2
3) Operating Instructions .....	3
4) Battery Charging .....	4
5) Storage and Maintenance .....	5
6) Service and Repair .....	5
7) Limited Warranty .....	6
8) Regulatory Notes .....	7
Appendix A) TECCS™ <i>fireTrakR1</i> ™ Specifications .....	8

## **Revision History**

Revision 1	06/20/2022
Revision 2	11/29/2022

## 1) Introduction

The TECCS™ system consists of three primary units, which together provide “real time” (once per minute, or once every 10 seconds in an emergency) tracking of fire personnel and equipment. The crew chief(s) and their individual crew members all carry fireTrakR1™ units on their shoulder or backpack (with unobstructed antenna), while equipment is fitted with fireTrakR2™ devices. Transmissions from these devices are collected by Mobile Command Modules (MCM) carried on Section or Division Supervisor’s truck. Each MCM is attached to a rugged laptop on the truck which displays the location of all fireTrakRs within direct line of sight. The MCM can handle up to 5000 fireTrakRs.

To minimize non-line of sight shadowing due to ridges and other obstructions, an Autonomous Relay Modules (ARM) can be deployed on a spotter aircraft (or other vehicle of opportunity) at ~5000 feet altitude. The ARM receives all fireTrakR transmissions within its (largely unobstructed) line of sight and forwards the information to all MCM also within its line of sight. With this relay in place shadowing is greatly reduced, but not eliminated. Since each MCM receives location data from the ARM, an extended operational view is available. Although not as effective at minimizing shadowing, the ARM could alternately be placed on the least obstructed vantage point(s) accessible if necessary.

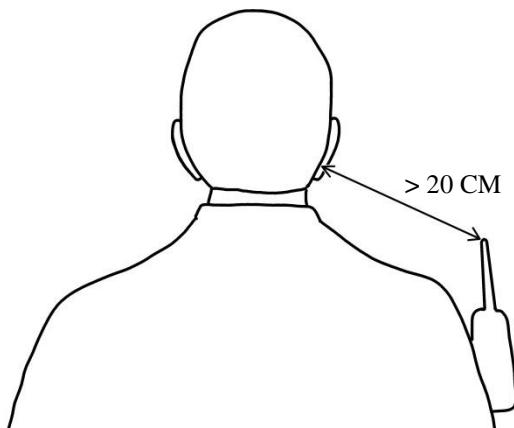
In addition to the above functionality, each fireTrakR can enter an emergency mode activated by an easily accessible wireless button. In this mode, which takes priority over normal operations, the fireTrakR transmits updated location and notification of the emergency every 10 seconds. The ARM prioritizes this traffic, and all MCM provide audible and visual indications of the emergency and its location so that appropriate action can be taken immediately.

Finally, the local incident command center can receive and display “real time” deployment of all personnel by “eavesdropping” on the ARM transmissions (including emergency events). This is accomplished by operating an Incident Command Module (ICM), with an option to utilize a moderate gain antenna aimed towards a deployed ARM. This data could be augmented by direct data relay from some or all of the deployed MCM if a suitable network is available.

## 2) Mounting

The fireTrakR1<sup>TM</sup> cradle should be permanently attached to the outer garment's shoulder such that the fireTrakR1<sup>TM</sup>, when strapped into the cradle, is greater than 20 centimeters from the head (as illustrated below), and has a clear, unobstructed view of the sky. The antenna should be pointing upwards toward the sky.

The fireTrakR1<sup>TM</sup> should be securely strapped into its cradle while operating.



### **3) Operating Instructions**

#### **Turn ON:**

Hold button on fireTrakR1<sup>TM</sup> for 5 seconds  
One blue flash when initially pushed

While operating:

Blinking Blue = GPS NOT yet Acquired  
Green = GPS Acquired  
Green Flash = Updated Position Transmitted

#### **Turn OFF:**

Hold button on fireTrakR1<sup>TM</sup> for 5 seconds.  
Red flash once each second  
All OFF

#### **EMERGENCY Notification:**

While ON, Press & Release fireTrakR1<sup>TM</sup> button

While in Emergency mode:

Solid Red  
Red flash = Emergency Transmission

#### **Cancel emergency transmissions:**

Turn OFF

## 4) Battery Charging

(The fireTrakR1<sup>TM</sup> should be off while charging.)

Place fireTrakR1<sup>TM</sup> in its charger facing forward, antenna up

Red = Charging

Off = Fully charged\*

\* See charger instructions for its operation  
and LED indicator meanings

The fireTrakR1<sup>TM</sup> should **not be charged with any other charging device.**

## **5) Storage and Maintenance**

The TECCS<sup>TM</sup> fireTrakR1<sup>TM</sup> requires no maintenance other than regular cleaning with a damp cloth. It should be kept in a cool, dry environment when not in use.

## **6) Service and Repair**

The TECCS<sup>TM</sup> fireTrakR1<sup>TM</sup> contains **NO USER SERVICEABLE PARTS**. It must be returned to an authorized service facility (or the manufacturer) for repair (RMA number required).

## 7) Limited Warranty

The TECCS™ fireTrakR1™ is warranted against factory defects in materials and workmanship for a period of 2 years from the date of original purchase. This warranty is extended only to the original purchaser of the unit.

During the warranty period, the manufacturer will repair or, at its option, replace a defective unit at no cost to the owner of the TECCS™ unit for materials and labor. Transportation charges are the responsibility of the owner, and a Return Merchandise Authorization Number (RMA) must be obtained prior to shipment. The unit must be packaged properly and shipped prepaid to an authorized service center.

This warranty is void if the TECCS™ unit has been damaged through accident, misuse, or during transportation. The warranty is also void if the unit has been opened by persons other than by service personnel authorized by the manufacturer.

This is the entire warranty offered. In no event will the manufacturer or its representatives be liable for any other damages, either direct, consequential, incidental, or punitive, however caused and regardless of theory of liability arising out of the use, failure, or misuse of the TECCS™, even if the manufacturer has been advised of the possibility of such damages. In no event will the manufacturer's liability exceed the original purchase price of the TECCS™ Unit.

## 8) Regulatory Notes

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 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.

In order to maintain compliance with FCC regulations, shielded cables must be used with this equipment. Operation with non-approved equipment or unshielded cables is likely to result in interference to radio and TV reception. The user is cautioned that changes and modifications made to the equipment without the approval of manufacturer could void the user's authority to operate this equipment.

## RF Exposure Statement

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated as described in this manual, with a minimum distance of 20 centimeters between the antenna and your head. Users must follow these specific operating instructions to satisfy RF exposure compliance regulations

## Appendix A) TECCS™ *fireTrakR1™* Specifications

### TRACKING EMERGENCY COMMAND AND CONTROL SYSTEM

FREQUENCY	902-928 MHz
POWER	0.5 Watt Nominal, 1 Watt Max
GPS	Internal
CASE	High Impact Resistant Plastic
SIZE	4" X 2.25" X 0.9" (excluding antenna)
WEIGHT	4.3 Oz (excluding cradle)
ANTENNA	Internal
BATTERY	Deploy with Antenna Vertical
OPERATING MODES	Rechargeable Lithium Battery
INDICATOR	Off, Tracking, Emergency
OPERATING LIFE	Multicolor LED
OPERATING TEMPERATURE	~72 Hrs per charge in Tracking mode
Splash RESISTANT	-20° to +55°C
MODEL	MMI-TRAKR1
FCC ID	RG6-MMI-TRAKR1



This device complies with Part 15 of the FCC Rules. Operation is subject to the following two 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 document contains information on a new product. Specifications and information herein are subject to change without notice.

## **NOTES**

## **NOTES**



