



# Mother Transmitters

## User Guide



## Compliance

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance can void the user's authority to operate the equipment.

The term "IC" before the certification/registration number only signifies that the Industry Canada technical specifications were met.

- FCC: KXU-MBTX
- IC: 2719A – MBTX



RF TECHNOLOGIES®

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# CONTENTS

<b>CONTENTS</b> .....	<b>1</b>
<b>WARNINGS AND CAUTIONS</b> .....	<b>3</b>
Warnings .....	3
Cautions .....	6
<b>PREFACE</b> .....	<b>7</b>
Overview .....	7
Intended Audience .....	7
Contact Information .....	8
Technical Support .....	8
Customer Care .....	8
Sales .....	8
Product Warranty .....	8
<b>GENERAL INFORMATION</b> .....	<b>9</b>
Introduction .....	9
Mother Transmitter .....	9
Warranty Expiration Date .....	10
Transport Mode .....	11
Linking .....	11
Matching .....	12
Discharge .....	13
LED Light Guidelines .....	14
Banding .....	15
Transmitter Clearing Device .....	18
Clearing a Transmitter .....	18
<b>TESTING AND CARE</b> .....	<b>19</b>
Testing .....	19
Mother Transmitters .....	19

Transmitter Clearing Device .....	20
Transmitter Cleaning and Care .....	21
Replacing the Clamp .....	23
<b>SPECIFICATIONS.....</b>	<b>25</b>
Mother Transmitter .....	25
Transmitter Clearing Device.....	26
Transmitter Tester .....	27
<b>REVISION HISTORY.....</b>	<b>29</b>

# WARNINGS AND CAUTIONS

It is important for your facility to implement and enforce the following WARNINGS and CAUTIONS in order to keep all equipment functioning properly. Disregarding the information and instructions in this document is considered abnormal use and may result in injury or system failure.

## Warnings



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**ACCESSORIES (SUPPLIES)**—To ensure resident safety and proper operation of equipment, use only parts and accessories manufactured or recommended by RF Technologies, Inc. Parts and accessories not manufactured or recommended by RF Technologies, Inc. may not meet the requirements of the applicable safety and performance standards.

**Failure to use the components and supplies specified by RF Technologies, Inc. may result in equipment and/or system failure.**

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**EXPLOSION HAZARD**—These devices should not be used in the presence of flammable gas mixtures. It should also not be used in oxygen enriched atmospheres.

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**STATIC DISCHARGE**—Do not touch the conductor portion of any conductor or port. Damage to the device may result.

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**SYSTEM WIRING**—All permanent supply connections must be done in accordance with National Electric Code, NFPA 70.

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**INSTALLATION AND CONFIGURATION**—It is the responsibility of the facility to follow the installation instructions carefully, as outlined in the applicable system guides, and to use the components and supplies specified by RF Technologies, Inc. for all installations.

**Failure to use the components and supplies specified by RF Technologies, Inc. may result in equipment and/or system failure.**

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**INSTRUCTIONS FOR SET UP AND USE**—It is the responsibility of the facility to follow the instructions for set up and use carefully, as outlined in this manual, and to use the components and supplies specified by RF Technologies, Inc. for set up and use. Do not attempt to use extension cords or other equipment not supplied by RF Technologies, Inc.

**Failure to use the components and supplies specified by RF Technologies, Inc. may result in equipment and/or system failure.**

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**SYSTEM INSPECTION**—It is the responsibility of the facility to establish and facilitate a regular inspection schedule for your system. RF Technologies, Inc. recommends quarterly inspections of your system for safety and performance by a qualified RF Technologies, Inc. representative.

To arrange for a quarterly inspection by RF Technologies, Inc., call our Technical Support Department at (800)-669-9946 or (262) 790-1771.

**Failure to provide regular inspection of these products may result in equipment and/or system failure.**

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**SYSTEM MAINTENANCE AND TESTING**—It is the responsibility of the facility to establish and facilitate a regular maintenance schedule for your system, as outlined in the applicable system guides. This includes regular inspection, testing, and cleaning. RF Technologies, Inc. recommends monthly maintenance and testing of your system. It is also recommended that your facility keep records of maintenance and test completions.

**Failure to provide regular maintenance and testing of these products may result in equipment and/or system failure.**

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**USER TRAINING**—Only users who have received adequate training on the use of the system, as outlined in this manual, should use the system. It is the responsibility of the facility to ensure all users have been trained.

**Failure to adequately train employees may cause system failure due to user error. In addition, incorrect use of the equipment may also result in system failure.**

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All RF Technologies transmitters, pendants and banding material “PRODUCT” have been determined to be MR Unsafe as defined by ASTM F 2503-05. Use of “PRODUCT” in a Magnetic Resonance Imaging system will cause injury to residents and staff, MR system malfunction or “PRODUCT” malfunction. Do not bring “PRODUCT” into the MR system area and follow your facilities policies to classify and label “PRODUCT” as MR Unsafe.

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**MR UNSAFE**

## Cautions



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**DISPOSAL**—At the end of their service life the products described in this manual, as well as accessories (i.e. lithium batteries, banding material, disposable pads, etc.), must be disposed of in compliance with all applicable federal, state and local guidelines regulating the disposal of products containing potential environmental contaminants. Dispose of the packaging material by observing the applicable waste control regulations

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**RESIDENT GENERATED ALARMS**—Do not rely exclusively on resident generated alarms for resident care and safety. The alarm function of equipment in the possession of residents must be verified periodically and regular resident surveillance is recommended.

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**RESIDENT MONITORING**—The most reliable method of resident monitoring combines close personal surveillance with correct operation of monitoring equipment. It is the responsibility of the facility to periodically check on residents in possession of RF Technologies, Inc.'s equipment (i.e. Pendants, Pull Cords, Control Units) to mitigate risk of inappropriate use of equipment or strangulation and stumbling hazards from cables and cords.

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**PRODUCT WARRANTIES**—Failure to follow the Warnings and Cautions in this guide voids any and all Product Warranties.

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**WORN OR DAMAGED PARTS**—If the devices or cables are worn or damaged, you must have the product serviced. For more information, see the section entitled “Service and Return.”

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# PREFACE

## Overview

The Mother transmitters are components of the 9450 System which monitors doors, elevators, hallways, and stairwells to assist staff in monitoring patients in a facility.

The Mother-Baby Matching System uses transmitters and your existing Safe Place solution to automatically confirm the correct baby is given to the mother when they are brought together by matching the Mother transmitter with the Infant transmitter.



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**WARNING:** The 9450 System is designed and intended to work in conjunction with a facility's overall patient security program, including reasonable operating policies and procedures. The 9450 System, by itself, cannot prevent abductions or the elopement of patients.

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## Intended Audience

The Mother Transmitters User Guide is intended for caregivers who use the Mother and Infant transmitters. It includes detailed information about care and cleaning, testing the transmitters, alarms and transmitter specifications.

This guide should only be used by persons who have read the Software User Guide and received training on the use of the System. It is not intended as a substitute for reading the Software User Guide. Always refer to the Software User Guide for complete instructions and warnings.

## **Contact Information**

For more information about RF Technologies, Inc. products, go to [www.rft.com](http://www.rft.com).

### **Technical Support**

For technical support, contact the Technical Support Team at:

(800) 669-9946, option 5 or (262) 790-1771

[tech@rft.com](mailto:tech@rft.com)

### **Customer Care**

For questions on part replacement or for ordering new parts, contact the Customer Care Team at:

(800) 669-9946, option 2

[customercare@rft.com](mailto:customercare@rft.com)

### **Sales**

For questions regarding system add-ons, contact your Sales Manager.

## **Product Warranty**

Product Warranty information can be found on the system's CD-ROM or with your original system proposal and invoice.

# GENERAL INFORMATION

## Introduction

This chapter provides general information about the transmitters. It includes:

- Using the transmitters
- Warranty dates
- Testing and care

## Mother Transmitter

The Mother transmitter is used in conjunction with the Infant transmitter (see the Safe Place Transmitter User guide for additional details).



The transmitter is lightweight and compact and is worn on the mother's wrist. The mother can wear the transmitter during a shower but prolonged exposure to wet conditions and complete submersion should be avoided.



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**SUBMERSION**—Prolonged submersion may result in equipment and/or system failure and voids any and all Product Warranties.

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### How do the transmitters work?

When the Infant transmitter is in close proximity with the Mother transmitter, the Mother transmitter flashes the Green light to indicate that the Infant and Mother transmitters match. If there is a mismatch; meaning, the Infant and Mother transmitters do not match; the Green light flashes 3 times followed by 3 Red flashes and 3 beeps on the Mother transmitter.



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**RADIO FREQUENCY:** The radio frequency (RF) characteristics of certain metal crib carts may interfere or block the Infant transmitter's signal during transport, preventing detection by the system's Exit Receiver or the Mother transmitter.

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## Warranty Expiration Date

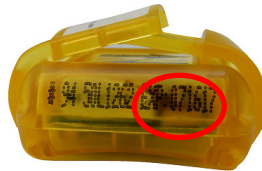
Each transmitter is stamped with a warranty expiration date. This date indicates the date that RF Technologies' warranty on that transmitter expires. If the warranty period has expired, discard the transmitter immediately.



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**WARNING:** Using a transmitter beyond the printed expiration date can result in system failure, mismatch, and/or abduction.

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Transmitters have a 1 year life expectancy.

## Transport Mode

To prevent excessive drain on the battery, the Mother transmitter is shipped in transport mode where the transmitter's functionality is suspended and will not communicate with the Infant transmitter.

To activate the transmitter, simply band the transmitter using RF Technologies approved banding material (see the Banding section).

## Linking



### To link a Mother transmitter to an Infant transmitter:

1. With the Mother transmitter banded, tap the Mother transmitter to enter Link mode.

**NOTE:** If the Red light does not illuminate, clear (see Clearing Transmitter section) the Mother transmitter to make sure it is not linked to another transmitter and try again.

2. When tapped, the Mother transmitter flashes a single Red light, indicating it is ready to be linked.
3. Bring an infant, with a banded Infant transmitter, within 10-12" of the Mother transmitter.
4. For the next 2 minutes the Mother transmitter will seek a match with an Infant transmitter.
5. If no match is made, the Mother transmitter will go into sleep mode and must be tapped again to wake it up when ready to Link with an Infant transmitter.
6. When the Mother and Infant transmitters are successfully linked, the Green light on the Mother transmitter illuminates and sounds a single beep.

*Every time the Mother transmitter successfully receives a signal from the Infant transmitter or tester, it will flash Green. The Mother transmitter must flash 4 times in 6 seconds to acknowledge a successful link.*

7. The Link mode automatically ends after 2 minutes.
8. If you are linking the Mother transmitter with twins or triplets, band the infants before banding the mother.
9. Tap the Mother transmitter to wake it up and verify that the Red light illuminates.
10. Bring the Mother transmitter to each infant one at a time. Make sure you receive the Green light and beep for each infant within two minutes.



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**WARNING:** The Mother transmitter will not link to an Infant transmitter when the Mother transmitter's battery is low.

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## Matching

**To determine if a Match exists between a Mother transmitter and an Infant transmitter:**

1. With the Infant within the 10-12" range, tap the Mother transmitter once and wait for the Green light to flash in order to verify that the Mother and Infant transmitters match.
2. If there is a mismatch the Green light flashes three times followed by 3 Red flashes and 3 beeps on the Mother transmitter.
3. A Mismatch alarm is also displayed on the Safe Place computer.



**NOTE:** In the event of a mismatch, follow your facility's established procedures.

## Discharge

**NOTE:** A Mother / Infant link will be required if “Confirm Discharge” and “Require Mom/Infant match before discharge” are both enabled during configuration (refer to the Software Administrator Guide for your system).

### **To discharge a Mother and Infant transmitter:**

1. Perform a Mother/Infant transmitter match.
2. Discharge the Infant transmitter then remove the infant’s banding material.
3. Discharge the Mother transmitter and remove the mother’s band.
4. Discharge events should post for both the Mother and Infant transmitters.

## LED Light Guidelines

The LED lights and audible beeps on the transmitter signal various meanings. These meanings are described in detail throughout this document. The following guidelines apply to the Mother transmitters:

Light Flash	Meaning	How to Respond
No LED activity	Mother transmitter is in transport mode	Prior to shipping, the transmitter is placed in transport mode to prevent battery drain. Tap the transmitter to exit transport mode
No LED activity	Mother transmitter battery is expired	When a Mother transmitter is banded but the LED indicator exhibits no flashes when the transmitter is tapped, the battery voltage is too low for the Mother transmitter to function Discard transmitter and call RFT Tech Support for replacement
1 Red	The Mother transmitter is tapped once to verify it is ready to be linked	The red light signals the transmitter is in Link mode
1 Green	An “unassigned” or stored Mother transmitter is tapped once to verify it is ready to be linked	The Mother transmitter is still linked to an Infant transmitter. Clear the Mother transmitter using the Transmitter Clearing Device
1 Green	With an Infant transmitter within range, the Mother transmitter is tapped once to verify	The Mother and Infant transmitters match so no action required; operates as designed
4 Green	Mother transmitter recognizes an Infant transmitter and links to it	The Mother transmitter decodes 4 signals then beeps once The transmitter is successfully linked so no action required; operates as designed



Light Flash	Meaning	How to Respond
3 Green 3 Red	An Infant transmitter comes into contact with a Mother transmitter and they do not match	Follow your facility's established procedures to secure and separate the infant from the mismatched Mother transmitter  Clear the alarm at the Client computer (you must select an event cause)
3 Green 1 Amber	With the Transmitter Clearing Device 10" to 12" in front of the Mother transmitter, transmitter is tapped	The Mother transmitter is cleared and all linked activity is removed  Store the cleared Mother transmitter together with the Transmitter Clearing Device
No LED activity – Beeping for 5 minutes	Mother transmitter is linked and there has been no activity (mother or match) for 72 hours	Transmitter is automatically discharges at the end of 5 minutes (designed to help find lost Mother transmitters)  If the transmitter is still on the mother, tap the transmitter and it will silence for another 72 hours  Clear the Mother transmitter using the Transmitter Clearing Device

## Banding

**NOTE:** All banding material types must not remain on a patient for longer than 72 hrs (3 days). If the material is kept on longer than this specified period of time, you may receive false alarms from that transmitter.



**CAUTION:** You must test all transmitters prior to use to verify proper operation. This includes every time that the band is replaced. Failure to test the transmitters before use can result in system failure, abduction, and/or an elopement. In addition, failure to test transmitters voids the RF Technologies Product Warranty.

**To band a Mother transmitter:**

1. Cut off 6-8" of the banding material from the roll.
2. Verify that the transmitter is unlocked. See the "Unlock a Transmitter" section for further details.
3. Open the clamps of the transmitter by gently pulling them outward, one clamp at a time, from the top of the transmitter.
4. Insert the banding material through the slot on the non-locking clamp side of the mother transmitter, from bottom to top, with the white side facing out.
5. Guide the banding material through until it bumps against the stop.



6. Push in the clamp until it snaps into place.
7. Insert the banding material through the slot on the locking clamp side of the transmitter, from bottom to top.



8. Guide the banding material through the slot at the top of the clamp. DO NOT snap the clamp into place.

- Slide the transmitter and banding material onto the wrist of the mother according to your facility's policies and procedures.
- Adjust the band so that the transmitter is in a comfortable position on the mother's wrist.



- The band must be tight enough to help stop the transmitter from slipping off, and loose enough to avoid discomfort.
- Push the unsnapped side of the clamp until it snaps into place.
- Use safety scissors to cut off the excess banding material.



**To unlock a transmitter:**

- Insert the Locking Clamp Key into the hole on the top-side of the transmitter.
- Turn the key  $\frac{1}{4}$  turn in any direction.
- Stop and pull with the key until the locking side of the clamp opens.
- Remove the Locking Clamp Key.
- Pull back the non-locking side of the clamp.
- Follow the instructions to band or loosen the approved banding material and slip the Transmitter off of the mother.

## Transmitter Clearing Device



The Transmitter Clearing Device is lightweight and compact. It is water resistant; however, complete submersion should be avoided.

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**SUBMERSION**—Prolonged submersion may result in equipment and/or system failure and voids any and all Product Warranties.

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The Transmitter Clearing Device is available with a two year life expectancy. Each Transmitter Clearing Device is stamped with a warranty expiration date. This date indicates the date that RF Technologies' warranty on that Transmitter Clearing Device expires. If the warranty period has expired, discard the Transmitter Clearing Device immediately.



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**WARNING:** Using a transmitter clearing device beyond the printed expiration date can result in system failure, mismatch, and/or abduction.

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## Clearing a Transmitter

1. With the Transmitter Clearing Device within 10-12" of the Mother transmitter, tap the transmitter. The Green light flashes 3 times followed by 1 Orange flash indicating that the transmitter is cleared.
2. Store the cleared Mother transmitter together with the Transmitter Clearing Device until the next use.

# TESTING AND CARE

## Testing

Do not use the transmitter tester on a transmitter or clearing device with an expiration date that has expired as the results may not be accurate (the printed expiration date on the device takes precedence over the transmitter tester results).



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**CAUTION:** You must test all transmitters and clearing devices prior to use to verify proper operation. This includes every time the band is replaced. Failure to test the transmitters before use can result in system failure, mismatch, and/or an abduction. In addition, failure to test transmitters voids the RF Technologies Product Warranty

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**WARNING:** The Mother transmitter **CANNOT** be tested with the transmitter tester used with the Infant transmitters or Transmitter Clearing Device.

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## Mother Transmitters

The following testing is required for all transmitters in use. All steps are mandatory.

1. Test the operation of transmitters by performing a match using the Mother transmitter and a working Infant transmitter.
2. Visually inspect transmitters for damage or loose parts.

3. Verify that the warranty expiration date stamped on the transmitter has not expired. If the warranty period has expired, discard and replace the transmitter immediately.
4. Your facility must keep records of test and transmitter inspection.

## Transmitter Clearing Device



1. Verify that the warranty expiration date that is stamped on the device is not expired. If the warranty period has expired, discard and replace the device immediately.
2. Visually inspect the device for damage or loose parts.

Test the operation of the transmitter clearing device using the Transmitter Tester (PN 9450-0050). The transmitter tester will detect whether or not a transmitter is emitting a signal, but cannot indicate the strength of the signal

1. Place the transmitter tester directly on the transmitter.
2. Press and hold the button on the left side of the transmitter tester.
3. The device beeps once when you initially press the button.
4. While holding the button in, the indicator light flashes and a tone sounds once per second
5. Wait for at least 3 flashes of the indicator light and 3 tones from the transmitter tester to verify that the device is functioning correctly.
6. If the device fails this test, check the battery in the tester. The transmitter tester requires a 9V battery.

7. Retest the device. If it fails a second time, **DO NOT USE THE TRANSMITTER CLEARING DEVICE** and contact RF Technologies Technical Support.

## Transmitter Cleaning and Care

This section provides detailed information about cleaning and caring for a transmitter.

For an up-to-date list of approved cleaning solutions, visit:

*[www.rft.com/Resources/Manuals & Specs/Transmitters/Transmitter Approved Cleaning Solutions](http://www.rft.com/Resources/Manuals%20&%20Specs/Transmitters/Transmitter%20Approved%20Cleaning%20Solutions)*



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**CAUTION:** Use of non-approved cleaners on transmitters can cause permanent damage to the transmitter and the piercing contacts and will void any and all warranties.

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To clean a transmitter after use:

1. Remove the banding material from the transmitter and dispose of it.
2. Use the provided brush to clean the hard-to-reach areas. After each use, brushes can be disposed of or disinfected with alcohol according to your facility's infection control procedures.
3. Disinfect the transmitter with an approved cleaner.



**NOTE:** In order to avoid nuisance alarms, cleaning procedures must be performed at least 100 feet from any Alarming Band Zone.



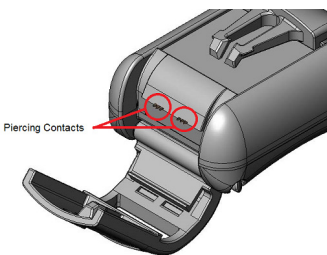
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**CAUTION:** Using an approved cleaner does not confirm the suitability of the cleaner to meet your infection control standard; it only indicates that the transmitter will not be harmed by the cleaner.

The transmitters may be wiped, sprayed or rinsed with water or the approved cleaners during cleaning, but must not be soaked. Soaking transmitters may result in equipment and/or system failure.

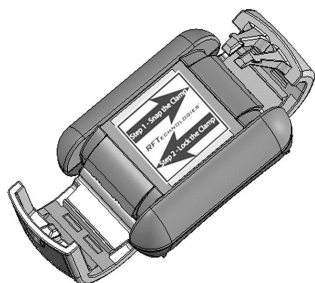
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4. Allow the cleaner to remain on the transmitter for the amount of time specified by the manufacturer. When using surface disinfectants and decontaminant cleaners, always follow the manufacturer's instructions.
5. Wipe the transmitter with a clean cloth or towel, and then allow the transmitter to air-dry. The transmitter can also be rinsed with water, if required to in the manufacturer's instructions.
6. Inspect the piercing contacts on the transmitter. The contacts must be gold in color and not bent or out of alignment. If the piercing contacts are NOT gold in color or are bent out of alignment, discard the transmitter.
7. Close the clamps on the transmitter
8. Place the clean transmitter in a storage container for future use.





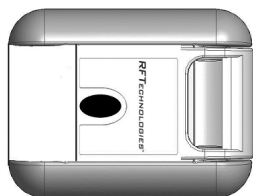
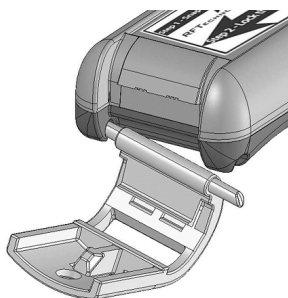
## Replacing the Clamp



In some cases, you need to replace damaged transmitter clamps. This is done by opening the existing clamps, snapping them off of the transmitter, and inserting new clamps.

### To replace a transmitter clamp:

1. Open the clamps all the way and gently remove them from the transmitter.
2. Insert the first clamp into the transmitter by inserting the right oval-shaped pin into the hole on the right of the transmitter.
3. Next, line the left oval-shaped pin up with the hole on the left side of the transmitter.
4. Gently snap the left oval-shaped pin into the hole.
5. Close and secure the clamp.
6. Repeat the previous steps for the second clamp.




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**CAUTION:** Use care around the piercing contacts on the transmitter as they are extremely sharp. Placing your fingers directly on the piercing contact can result in injury.

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# SPECIFICATIONS

## Mother Transmitter



<b>Size</b>	1.63 x 1.18 x 0.625 inches
<b>Weight</b>	0.71 ounces
<b>Color</b>	Yellow
<b>Operating Temperature</b>	32–122° Fahrenheit (0–50° Celsius)
<b>Composition</b>	Latex Free Co-polyester Plastic
<b>Battery Life</b>	1 year, Lithium Ion
<b>Frequency</b>	Depending on model: 66 KHz 262 KHz
<b>Banding</b>	Naugahyde with acetate fabric facing skin; white  Store in clean, dry conditions between 90°F, less 20-50% humidity
<b>Regulations</b>	FCC, Part 15b Conforms to UL Standard 294

<b>Part Number</b>	<b>Description</b>
9450-1066	Mother Baby Transmitter (66 KHz)
9450-1262	Mother Baby Transmitter (262KHz)
3000-0225	Patient Care Banding, Naugahyde, White, 80'

## Transmitter Clearing Device



<b>Size</b>	1.6 x 2.0 x 0.70 inches
<b>Weight</b>	1.28 ounces
<b>Color</b>	Off-white
<b>Operating Temperature</b>	32–104° Fahrenheit (0–40° Celsius)
<b>Composition</b>	Polycarbonate / ABS Blend
<b>Battery Life</b>	2 years
<b>Water Resistance</b>	Rated to IP-67
<b>Frequency</b>	Depending on model: 66 KHz 262 KHz
<b>Regulations</b>	FCC, Part 15b Conforms to UL Standard 294

<b>Part Number</b>	<b>Description</b>
9450-3066	Transmitter Clearing Device (66 kHz)
9450-3262	Transmitter Clearing Device (262 kHz)

## Transmitter Tester



<b>Size</b>	3.8 x 2.4 x 1.5 inches
<b>Weight</b>	3 ounces
<b>Battery</b>	9V battery

<b>Part Number</b>	<b>Description</b>
9450-0050	Transmitter Tester

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# REVISION HISTORY

Revision	Change
A	Release
B	Removed tester
C	Updated clearing notes
D	Added Clearing Device
E	Added information on showering and linking
F	Updated LED information table
G	Updated LED information table
H	Added transport device information
I	Added warning information
J	Added caution for metal crib carts
K	Updated format, updated warranty expiration date section, and updated specifications section Fixed minor document bugs
L	Updated approved cleaners section
M	Updated format and logos Removed Alerts section (information contained in the software reference guides)
N	Added Oxivir TB to Approved Cleaner List
O	Removed Approved Cleaners section and added reference to website link for most up-to-date list Updated specifications section to include the transmitter tester and remove infant banding information



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**Release Date: 11/2018**

