

MICROCOM[®]

900XR

OPERATING MANUAL



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INTRODUCTION

We at Pliant Technologies want to thank you for purchasing MicroCom 900XR. MicroCom 900XR is a robust, two-channel, full-duplex, multi-user, wireless intercom system that operates in the 900MHz frequency band to provide superior range and performance, all without the need for a basestation. The system features lightweight belt packs and provides exceptional sound quality, enhanced noise cancellation, and long-life battery operation. In addition, the MicroCom's IP67-rated belt pack is built to endure the wear and tear of everyday use, as well as the extremes in outdoor environments.

In order to get the most out of your new MicroCom 900XR, please take a few moments to read this manual completely so that you better understand the operation of this product. This document applies to models PMC-900XR and PMC-900XR-AN*. For questions not addressed in this manual, feel free to contact the Pliant Technologies Customer Support Department using the information on page 10.

**PMC-900XR-AN is approved for use in Australia and New Zealand and operates within the 915–928 MHz frequency range.*

PRODUCT FEATURES

- Robust, Two-Channel System
- Simple to Operate
- Up to 10 Full-Duplex Users
- Pack-to-Pack Communication
- Unlimited Listen-Only Users
- 900MHz Frequency Band
- Frequency Hopping
- Ultra Compact, Small, and Lightweight
- Rugged, IP67-Rated BeltPack
- Long, 12-hour Battery Life
- Field-Replaceable Battery
- Available Drop-In Charger

WHAT'S INCLUDED WITH MICROCOM 900XR?

- BeltPack
- Li-Ion Battery (Installed during shipment)
- USB Charging Cable
- BeltPack Antenna (Attach to beltpack prior to operation.)
- Quick Start Guide

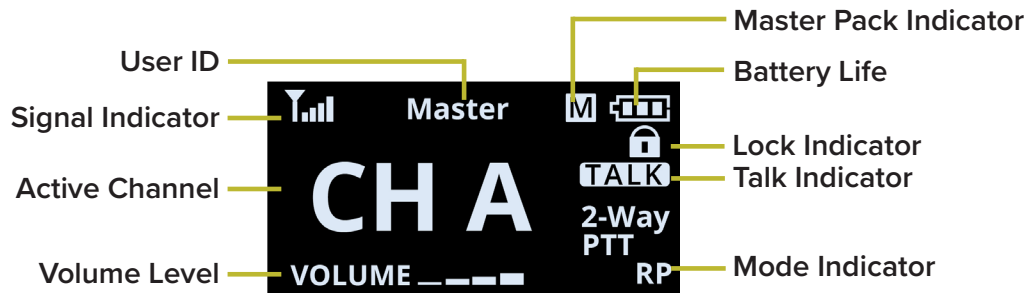
OPTIONAL ACCESSORIES

- PAC-USB5-CHG: MicroCom 5-Port USB Charger
- PAC-MCXR-5CASE: IP67-rated MicroCom Hard Carry Case
- PAC-MC-SFTCASE: MicroCom Soft Travel Case
- PBT-XRC-55: MicroCom XR 5+5 Drop-In BeltPack and Battery Charger
- PHS-SB11LE-DMG: SmartBoom® LITE Single Ear Pliant headset with Dual Mini connector for MicroCom
- PHS-SB110E-DMG: SmartBoom PRO Single Ear Pliant headset with Dual Mini connector for MicroCom
- PHS-SB210E-DMG: SmartBoom PRO Dual Ear Pliant headset with Dual Mini connector for MicroCom
- PHS-IEL-M: MicroCom In-Ear Headset, Single Ear, Left Only
- PHS-IELPTT-M: MicroCom In-Ear Headset with Push-to-Talk (PTT) Button, Single Ear, Left Only
- PHS-LAV-DM: MicroCom Lavalier Microphone and Eartube
- PHS-LAVPTT-DM: MicroCom Lavalier Microphone and Eartube with PTT Button
- PMC-REC-900: MicroCom XR Receiver
- ANT-EXTMAG-01: MicroCom XR 1dB External Magnetic 900MHz / 2.4GHz Antenna
- PAC-INT-IO: Wired Intercom and Two Way Radio Interface Adapter

CONTROLS



DISPLAY INDICATORS



SETUP

1. **Attach the beltpack antenna.** It is reverse threaded; screw counter-clockwise.
2. **Connect a headset to the beltpack.** Press firmly until it clicks to make sure the headset connector is seated properly.
3. **Power on.** Press and hold the **POWER** button for two (2) seconds until the screen turns on.
4. **Access the menu.** Press and hold the **MODE** button for three (3) seconds until the screen changes to **<SETTING MODE>**. Short-press **MODE** to scroll through the settings, and then scroll through setting options using **VOLUME +/-**. Press and hold **MODE** to save your selections and exit the menu.
 - a. **Select a group.** Select a group number from 00–51 (or 00–24 for PMC-900XR-AN model).
Important: BeltPacks must have the same group number to communicate.

IF OPERATING THE BELTPACK IN REPEATER MODE*

- b. **Select an ID.** Select a unique ID number.
 - Repeater Mode ID options: M (Master), 01–08 (Full Duplex), S (Shared), L (Listen).
 - One beltpack must always use the “M” ID and serve as the Master for proper system function. An “M” indicator designates the Master beltpack on its screen.
 - Listen-only beltpacks must use the “L” ID. You may duplicate ID “L” on multiple beltpacks.
 - Shared beltpacks must use the “S” ID. You may duplicate ID “S” on multiple beltpacks, but only one shared beltpack may talk at a time.
 - When using “S” IDs, the last full-duplex ID (“08”) cannot be used in the Repeater Mode.
- c. **Confirm beltpack’s security code.** BeltPacks must use the same security code to work together as a system.

**Repeater Mode is the default setting. See page 8 for information about changing mode.*

IF OPERATING THE BELTPACK IN ROAM MODE

- b. **Select an ID.** Select a unique ID number.
 - Roam Mode ID options: M (Master), SM (Submaster), 02–09, S (Shared), L (Listen).
 - One beltpack must always be “M” ID and serve as the Master, and one beltpack must always be set to “SM” and serve as the Submaster for proper system function.
 - The Master and Submaster must be located in positions where they always have an unobstructed line of sight to each other.
 - Listen-only beltpacks must use the “L” ID. You may duplicate ID “L” on multiple beltpacks.
 - Shared beltpacks must use the “S” ID. You may duplicate ID “S” on multiple beltpacks, but only one shared beltpack may talk at a time.
 - When using “S” IDs, the last full-duplex ID (“09”) cannot be used in the Roam Mode.

- c. **Access the roaming menu.** Select one of the roaming menu options listed below for each beltpack.
 - Auto - Allows the beltpack to automatically log in to the Master or Submaster depending on the environment and the beltpack's proximity to either.
 - Manual - Allows the user to manually select whether the beltpack is logged in to the Master or Submaster. Press the **MODE** button to select Master or Submaster.
 - Master - When selected, the beltpack is locked into only logging into the Master.
 - Submaster - When selected, the beltpack is locked into only logging into the Submaster.
- d. **Confirm beltpack's security code.** BeltPacks must use the same security code to work together as a system.

IF OPERATING THE BELTPACK IN STANDARD MODE

- b. **Select an ID.** Select a unique ID number.
 - Standard Mode ID options: M (Master), 01-09 (Full Duplex), S (Shared), L (Listen).
 - One beltpack must always use the "M" ID and serve as the Master for proper system function. An "M" indicator designates the Master beltpack on its screen.
 - Listen-only beltpacks must use the "L" ID. You may duplicate ID "L" on multiple beltpacks.
 - Shared beltpacks must use the "S" ID. You may duplicate ID "S" on multiple beltpacks, but only one shared beltpack may talk at a time.
 - When using "S" IDs, the last full-duplex ID ("09") cannot be used in the Standard Mode.
- c. **Confirm beltpack's security code.** BeltPacks must use the same security code to work together as a system.

BATTERY

The rechargeable Lithium-ion battery is installed in the device at shipment. To recharge the battery, either 1) plug the USB charging cable into the device USB port or 2) connect the device to the drop-in charger (PBT-XRC-55, sold separately). The LED in the top right corner of the device will illuminate solid red while the battery is charging and will turn off once the battery is fully charged. The battery charge time is approximately 3.5 hours from empty (USB port connection) or approximately 6.5 hours from empty (drop-in charger). The beltpack may be used while charging, but doing so may lengthen battery charge time.

OPERATION

- **LED Modes** - LED is blue and double blinks when logged in and single blinks when logged out. LED is red when battery charging is in progress. LED turns off when charging is complete.
- **Lock** - To toggle between Lock and Unlock, press and hold the **TALK** and **MODE** buttons simultaneously for three (3) seconds. A lock icon appears on the screen when locked. This function locks the **TALK** and **MODE** buttons, but it does not lock headset volume control, the **POWER** button, or the **PTT** button.
- **Volume Up and Down** - Use the **+** and **-** buttons to control the headset volume. "Volume" and a stair-step indicator will display the beltpack's current volume setting on the screen. You will hear a beep in your connected headset when the volume is changed. You will hear a different, higher-pitched beep when maximum volume is reached.
- **Talk** - Use the **TALK** button to enable or disable talk for the device. "TALK" appears on the screen when enabled.
 - » Latch talking is enabled/disabled with a single, short press of the button.
 - » Momentary talking is enabled by pressing and holding the button for two (2) seconds or longer; talk will remain on until the button is released.
 - » Shared users ("S" ID) can enable talk for their device with the momentary talking function (press and hold while talking). Only one Shared user can talk at a time.
- **Mode** - Short-press the **MODE** button to toggle between the channels enabled on the beltpack. Long-press the **MODE** button to access the menu.
- **Two-Way Push-to-Talk** - If you have a two-way radio connected to the Master beltpack, you may use the PTT button to activate talk for the two-way radio from any beltpack on the system.
- **Out of Range Tones** - The user will hear three quick tones when the beltpack logs out of the system, and they will hear two quick tones when it logs in.



Figure 1: Lock Indicator

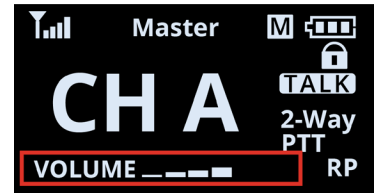


Figure 2: Volume Setting



Figure 3: Talk Indicator

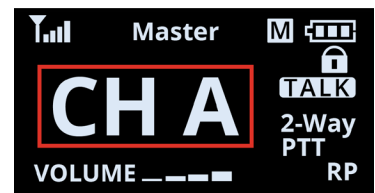


Figure 4: Channel Indicator

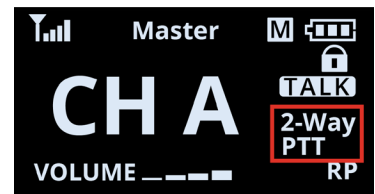


Figure 5: 2-Way PTT Indicator

OPERATING MULTIPLE MICROCOM SYSTEMS IN ONE LOCATION

Each separate MicroCom system should use the same Group and Security Code for all beltpacks in that system. Pliant recommends that systems operating in proximity to one another set their Groups to be at least ten (10) values apart. For example, if one system is using Group 03, another system nearby should use Group 13.

MENU SETTINGS

The following table lists adjustable settings and options. To adjust these settings from the beltpack menu, follow the instructions below:

1. To access the menu, press and hold the **MODE** button for three (3) seconds until the screen changes to **<Setting Mode>**.
2. Short-press the **MODE** button to scroll through the settings: Group, ID, Side Tone, Mic Gain, Channel A, Channel B, Security Code, and Roaming (only in Roam Mode).
3. While viewing each setting, you may scroll through its options using the **VOLUME +/-** buttons; then, continue to the next menu setting by pressing the **MODE** button. See the table below for the available options under each setting.
4. Once you have finished your changes, press and hold **MODE** to save your selections and exit the menu.

Setting	Default	Options	Description
Group	N/A	00-51 (or 00-24 for AN model)	Coordinates operation for beltpacks communicating as a system. BeltPacks must have the same group number to communicate.
ID	N/A	M SM 01-08 02-09 01-09 S L	Master ID Submaster ID (only in Roam Mode) Repeater* Mode ID options Roam Mode ID options Standard Mode ID options Shared Listen-Only
Side Tone	On	On, Off	Allows you to hear yourself while talking. Louder environments may require you to enable your side tone.
Mic Gain	1	1-8	Determines the headset microphone audio level being sent from the microphone pre amp.
Channel A	On	On, Off	
Channel B**	On	On, Off	
Security Code ("SEC Code")	0000	4-digit alpha-numeric code	Limits access to a system. BeltPacks must use the same security code to work together as a system.
Roaming***	Auto	Auto, Manual, Submaster, Master	Determines whether a beltpack can switch between the Master and Submaster beltpacks.

*Repeater Mode is the default setting. See page 8 for information about changing mode.

**Channel B not available in Roam Mode.

***Roaming menu options only available in Roam Mode.

RECOMMENDED SETTINGS BY HEADSET

The following table provides recommended MicroCom settings for several common headset models.

Headset Model	Recommended Setting
	Mic Gain
SmartBoom PRO and SmartBoom LITE (PHS-SB11LE-DMG, PHS-SB110E-DMG, PHS-SB210E-DMG)	1
MicroCom in-ear headset (PHS-IEL-M, PHS-IELPTT-M)	7
MicroCom lavalier microphone and eartube (PHS-LAV-DM, PHS-LAVPTT-DM)	5

Use the diagram of the wiring for the beltpack's TRRS connector if you choose to connect your own headphones. The microphone bias voltage range is 1.9V DC unloaded and 1.3V DC loaded.

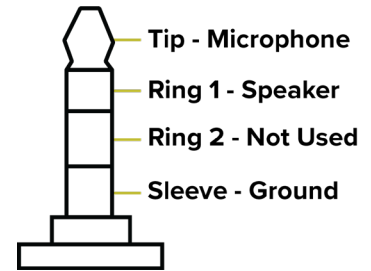


Figure 6: TRRS Connector

TECH MENU - MODE SETTING CHANGE

The mode can be changed between three settings for different functionality:

- **Standard Mode** connects users where line of sight between users is possible.
- **Repeater* Mode** connects users working beyond line of sight from one another by locating the Master beltpack in a prominent central location.
- **Roam Mode** connects users working beyond line of sight and extends the range of the MicroCom system by strategically locating the Master and Submaster beltpacks.

**Repeater Mode is the default setting.*

Follow the instructions below to change the mode on your beltpack.

1. To access the tech menu, press and hold the **PTT** and **MODE** buttons simultaneously until **<Tech Menu>** displays.
2. Scroll between the **"ST," "RP,"** and **"RM"** options using the **VOLUME +/-** buttons.
3. Press and hold **MODE** to save your selections and exit the tech menu. The beltpack will automatically power off.
4. Press and hold the **POWER** button for two (2) seconds; the beltpack will power back on and will be using the newly selected mode.

DEVICE SPECIFICATIONS

Specification*	PMC-900XR	PMC-900XR-AN**
Radio Frequency Type	ISM 902-928 MHz	ISM 915-928 MHz
Radio Interface	GFSK with FHSS	
Maximum Effective Isotropically Radiated Power (EIRP)	400 mW	
Frequency Response	50 Hz ~ 4 kHz	
Encryption	AES 128	
Number of Talk Channels	2	
Antenna	Detachable Type Helical Antenna	
Charge Type	USB Micro; 5V; 1-2 A	
Maximum Full-Duplex Users	10	
Number of Shared Users	Unlimited	
Number of Listen-Only Users	Unlimited	
Battery Type	Rechargeable 3.7V; 2,000 mA Li-ion field-replaceable battery	
Battery Life	Approx. 12 hours	
Battery Charging Time	3.5 hours (USB cable) 6.5 hours (Drop-in charger)	
Dimension	4.83 in. (H) × 2.64 in. (W) × 1.22 in. (D, with belt clip) [122.7 mm (H) x 67 mm (W) x 31 mm (D, with belt clip)]	
Weight	6.35 oz. (180 g)	
Display	OLED	

** Notice about Specifications: While Pliant Technologies makes every attempt to maintain the accuracy of the information contained in its product manuals, that information is subject to change without notice. Performance specifications included in this manual are design-centered specifications and are included for customer guidance and to facilitate system installation. Actual operating performance may vary. Manufacturer reserves the right to change specifications to reflect latest changes in technology and improvements at any time without notice.*

*** PMC-900XR-AN is approved for use in Australia and New Zealand and operates within the 915-928 MHz frequency range.*

PRODUCT CARE AND MAINTENANCE

Clean using a soft, damp cloth.

CAUTION: Do not use cleaners that contain solvents. Keep liquid and foreign objects out of the device openings. If the product is exposed to rain, gently wipe off all surfaces, cables, and cable connections as soon as possible and allow unit to dry before storing.

PRODUCT SUPPORT

Pliant Technologies offers technical support via phone and email from 07:00 to 19:00 Central Time (UTC-06:00), Monday through Friday.

1.844.475.4268 or +1.334.321.1160
technical.support@plianttechnologies.com

Visit www.plianttechnologies.com for product support, documentation, and live chat for help. (Live chat available 08:00 to 17:00 Central Time (UTC-06:00), Monday through Friday.)

RETURNING EQUIPMENT FOR REPAIR OR MAINTENANCE

All questions and/or requests for a Return Authorization Number should be directed to the Customer Service Department (customer.service@plianttechnologies.com). Do not return any equipment directly to the factory without first obtaining a Return Material Authorization (RMA) Number. Obtaining a Return Material Authorization Number will ensure that your equipment is handled promptly.

All shipments of Pliant products should be made via UPS, or the best available shipper, prepaid and insured. The equipment should be shipped in the original packing carton; if that is not available, use any suitable container that is rigid and of adequate size to surround the equipment with at least four inches of shock-absorbing material. All shipments should be sent to the following address and must include a Return Material Authorization Number:

Pliant Technologies Customer Service Department
Attn: Return Material Authorization #
205 Technology Parkway
Auburn, AL USA 36830-0500

LICENSE INFORMATION

PLIANT TECHNOLOGIES MICROCOM FCC COMPLIANCE STATEMENT

00004394 (FCCID: YJH-GM-900MSS)

00004445 (FCCID: YJH-GM-24G)

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 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.

CAUTION

Modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC Compliance Information: 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.

IMPORTANT NOTE

FCC RF Radiation Exposure Statement: This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment.

The antennas used for this transmitter must be installed to provide a separation distance of at least 5 mm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

CANADIAN COMPLIANCE STATEMENT

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Specifically RSS 247 Issue 2 (2017-02) and RSS-GEN Issue 5 (2019-03). Operation is subject to the following two conditions:

- (1) This device may not cause interference.
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.

PLIANT WARRANTY STATEMENT

CrewCom® and MicroCom™ products are warranted to be free from defects in materials and workmanship for a period of two years from the date of sale to the end user, under the following conditions:

- First year of warranty included with purchase.
- Second year of warranty requires product registration on the Pliant website.

Tempest® professional products carry a two-year product warranty.

All headsets and accessories (including Pliant-branded batteries) carry a one-year warranty.

The sole obligation of Pliant Technologies, LLC during the warranty period is to provide, without charge, parts and labor necessary to remedy covered defects appearing in products returned prepaid to Pliant Technologies, LLC. This warranty does not cover any defect, malfunction, or failure caused by circumstances beyond the control of Pliant Technologies, LLC, including but not limited to negligent operation, abuse, accident, failure to follow instructions in the Operating Manual, defective or improper associated equipment, attempts at modification and/or repair not authorized by Pliant Technologies, LLC, and shipping damage. Products with their serial numbers removed or effaced are not covered by this warranty.

This limited warranty is the sole and exclusive express warranty given with respect to Pliant Technologies, LLC products. It is the responsibility of the user to determine before purchase that this product is suitable for the user's intended purpose. **ANY AND ALL IMPLIED WARRANTIES, INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY, ARE LIMITED TO THE DURATION OF THIS EXPRESS LIMITED WARRANTY. NEITHER PLIANT TECHNOLOGIES, LLC NOR ANY AUTHORIZED RESELLER WHO SELLS PLIANT PROFESSIONAL INTERCOM PRODUCTS IS LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND.**

PARTS LIMITED WARRANTY

Replacement parts for Pliant Technologies, LLC products are warranted to be free from defects in materials and workmanship for 120 days from the date of sale to the end user.

This warranty does not cover any defect, malfunction, or failure caused by circumstances beyond the control of Pliant Technologies, LLC, including but not limited to negligent operation, abuse, accident, failure to follow instructions in the Operating Manual, defective or improper associated equipment, attempts at modification and/or repair not authorized by Pliant Technologies, LLC, and shipping damage. Any damage done to a replacement part during its installation voids the warranty of the replacement part.

This limited warranty is the sole and exclusive express warranty given with respect to Pliant Technologies, LLC products. It is the responsibility of the user to determine before purchase that this product is suitable for the user's intended purpose. **ANY AND ALL IMPLIED WARRANTIES, INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY, ARE LIMITED TO THE DURATION OF THIS EXPRESS LIMITED WARRANTY. NEITHER PLIANT TECHNOLOGIES, LLC NOR ANY AUTHORIZED RESELLER WHO SELLS PLIANT PROFESSIONAL INTERCOM PRODUCTS IS LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND.**

