SHURE®

PSM®1000

Personal Monitor Wireless System — **English**

Guide de l'utilisation du système de retour personnel — **Français**

Personal Monitor System Bedienungsanleitung — **Deutsch**

Guía del usuario del sistema de monitoreo personal — **Español**

Guida all'uso del sistema di monitoraggio personale — **Italiano**

Manual do Usuário do Sistema de Monitoração Pessoal — **Português**

Система личного монитора беспроволочная — **русский**

CE

PSM1000

The PSM 1000 Personal Monitor System from Shure brings personal monitoring to its most advanced level yet. The full-rack, dual-channel, networkable transmitter is ideally suited for the demands of elite-level professional touring and installation applications, and the diversity bodypack receiver delivers pristine RF signal and audio quality. Networkability over Ethernet connection enables remote control of transmitter functions and comprehensive frequency coordination via Wireless Workbench software.

Features

Advanced Setup and Operation

- Visual display of scan plotting in a rich graphical environment
- Remote control of transmitter settings:
    - RF mute enable/disable
    - RF output power adjustments
    - Aux/line level
    - Audio input level
- Channel/device name edit
- Directly update firmware with WWB

Touring-Grade Performance

- Full rack, dual channel transmitter in a rugged, professional chassis
- Twin-antenna diversity bodypack virtually eliminates drop-outs from interference
- Precision front-end RF filtering reduces RF interference for a cleaner, stronger RF signal, fewer dropouts, and less audible artifacts
- CueMode allows monitoring of different stage mixes and storing of up to 20 separate channels on one bodypack for quick and easy reference
- Internal power supply with IEC in/out ports enables easy power chaining in the rack
- Backwards compatibility

Components

- P10T Rackmount Transmitter
- P10R Bodypack Receiver (2)
- Two 1/2 Wave Antennas
- AA Batteries (4)
- Antenna Cables (2)
- IEC Power Cable and IEC Extension Cable
- Ethernet Network Cable
- Zippered Bag

Rackmount supplies:

- 2 antenna hole plugs
- 4 rack mounting screws with washers
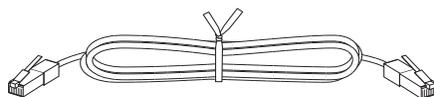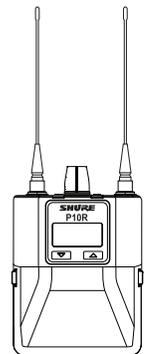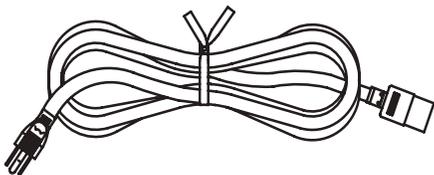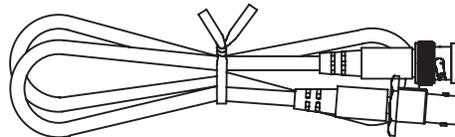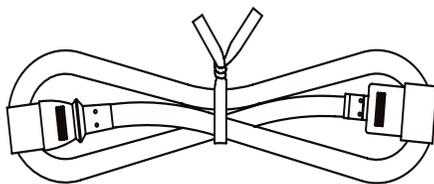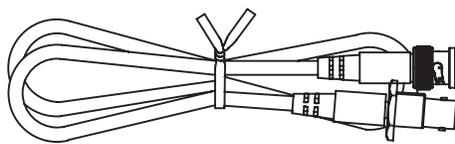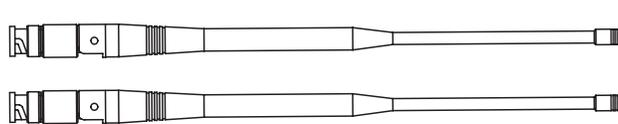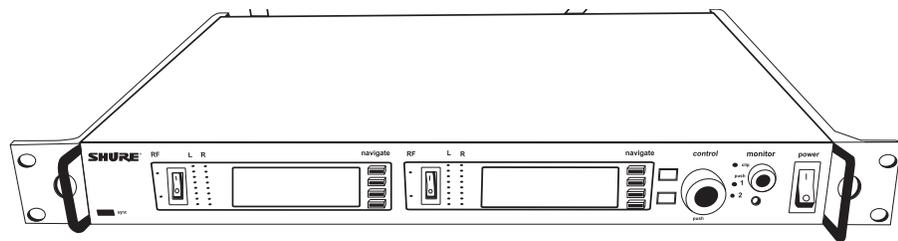
IMPORTANT SAFETY INSTRUCTIONS

1. READ these instructions.
2. KEEP these instructions.
3. HEED all warnings.
4. FOLLOW all instructions.
5. DO NOT use this apparatus near water.
6. CLEAN ONLY with dry cloth.
7. DO NOT block any ventilation openings. Allow sufficient distances for adequate ventilation and install in accordance with the manufacturer's instructions.
8. DO NOT install near any heat sources such as open flames, radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat. Do not place any open flame sources on the product.
9. DO NOT defeat the safety purpose of the polarized or groundingtype plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wider blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. PROTECT the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. ONLY USE attachments/accessories specified by the manufacturer.
12. USE only with a cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. UNPLUG this apparatus during lightning storms or when unused for long periods of time.

14. REFER all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. DO NOT expose the apparatus to dripping and splashing. DO NOT put objects filled with liquids, such as vases, on the apparatus.
16. The MAINS plug or an appliance coupler shall remain readily operable.
17. The airborne noise of the Apparatus does not exceed 70dB (A).
18. Apparatus with CLASS I construction shall be connected to a MAINS socket outlet with a protective earthing connection.
19. To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.
20. Do not attempt to modify this product. Doing so could result in personal injury and/or product failure.
21. Operate this product within its specified operating temperature range.

This symbol indicates that dangerous voltage constituting a risk of electric shock is present within this unit.

This symbol indicates that there are important operating and maintenance instructions in the literature accompanying this unit.

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

Important Product Information

The possible results of incorrect use are marked by one of the two symbols—"WARNING" and "CAUTION"—depending on the imminence of the danger and the severity of the damage.

⚡	WARNING: Ignoring these warnings may cause severe injury or death as a result of incorrect operation.
⚠	CAUTION: Ignoring these cautions may cause moderate injury or property damage as a result of incorrect operation.

CAUTION

• Never disassemble or modify the device, as failures may result.

• Do not subject to extreme force and do not pull on the cable or failures may result.

• Keep the product dry and avoid exposure to extreme temperatures and humidity.

WARNING

• If water or other foreign objects enter the inside of the device, fire or electric shock may result.

• Do not attempt to modify this product. Doing so could result in personal injury and/or product failure.

This device is able to produce sound volume higher than 85 dB SPL. Please check your maximum allowed continuous noise exposure level based on your national employment protection requirements.

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

⚠ WARNING

LISTENING TO AUDIO AT EXCESSIVE VOLUMES CAN CAUSE PERMANENT HEARING DAMAGE. USE AS LOW A VOLUME AS POSSIBLE. Over exposure to excessive sound levels can damage your ears resulting in permanent noise-induced hearing loss (NIHL). Please use the following guidelines established by the Occupational Safety Health Administration (OSHA) on maximum time exposure to sound pressure levels before hearing damage occurs.

90 dB SPL at 8 hours	95 dB SPL at 4 hours	100 dB SPL at 2 hours	105 dB SPL at 1 hour
110 dB SPL at ½ hour	115 dB SPL at 15 minutes	120 dB SPL Avoid or damage may occur	

LICENSING INFORMATION

Licensing: A ministerial license to operate this equipment may be required in certain areas. Consult your national authority for possible requirements. Changes or modifications not expressly approved by Shure Incorporated could void your authority to operate the equipment. Licensing of Shure wireless microphone equipment is the user's responsibility, and licensability depends on the user's classification and application, and on the selected frequency. Shure strongly urges the user to contact the appropriate telecommunications authority concerning proper licensing, and before choosing and ordering frequencies.

Information to the user

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 the 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 Industry Canada licence-exempt RSS standard(s). Operation of this device 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.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

This Class B digital apparatus complies with Canadian ICES-003. Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

Note: EMC conformance testing is based on the use of supplied and recommended cable types. The use of other cable types may degrade EMC performance.

Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

Quickstart Instructions

Rack Mount Transmitter

1. Connect to a power outlet using the supplied power cable.

2. Attach the supplied antennas to the `antenna out` BNC connectors.

3. Connect the audio source, such as the output of a mixer, to the audio inputs. You can use both input jacks or choose either one for a mono source.

4. Switch RF off and power on.

5. For mono (one input), access the `Audio` menu and select `Mono`.

   Set the input sensitivity to match the source using the `Util` > `Audio` > `INPUT` setting.

6. Adjust the audio source level so that, for the average input signal level, the top two yellow LEDs flicker and the lower LEDs are solid. If the red clip LED illuminates and a warning appears on the LCD, the inputs are overdriven. Decrease the audio input level to `+4 dBu` from the `Audio` menu. If the signal level is too low, change the input sensitivity to `-10 dBV`
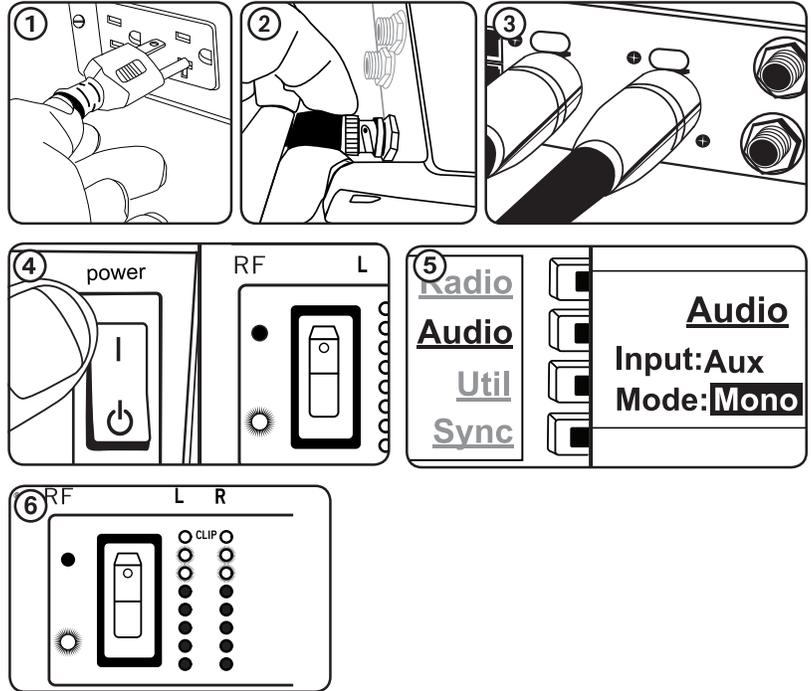
Bodypack

Open by pressing the latches on both sides and pulling. Insert the batteries or battery pack and attach antennas. Turn on using the volume knob. The battery light illuminates.
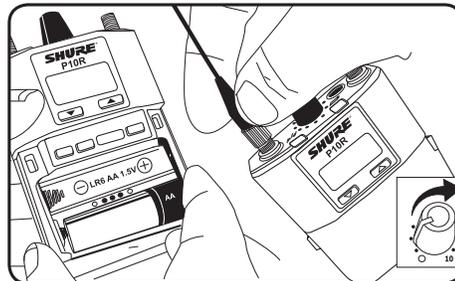
Scan and Sync

1. On the bodypack, press the `scan` button. The display flashes `SYNC NOW...`.

2. Align the IR windows on the bodypack and rack unit, the IR window on the transmitter illuminates. Press the `sync` button on the transmitter. The rack unit `Level` LEDs flash, and the screen displays `SYNC SUCCESS`.

3. Turn the RF switch on. The blue RF LED illuminates on the bodypack to indicate that it is detecting the transmitter. The bodypack also displays the RF signal strength (RF).

4. **Important:** Turn bodypack volume down before plugging in earphones.

5. Insert the earphones and slowly turn up the volume.

Important: Remove the protective film from the face of the transmitter or the IR sync may not work.
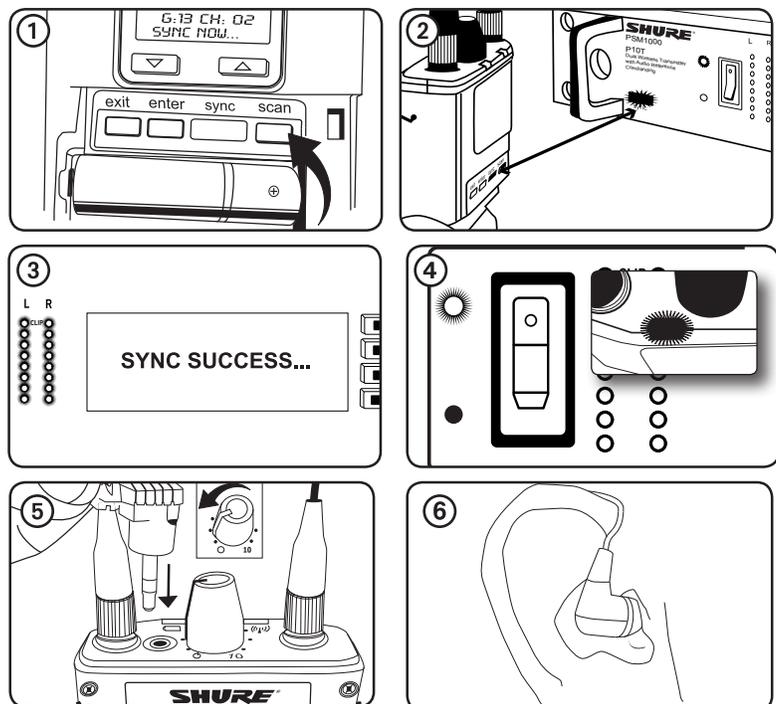
Front Panel Controls
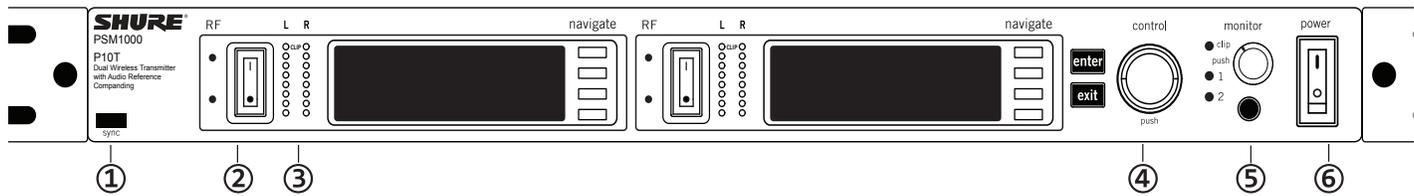
① Sync Window
Align bodypack IR window with sync window on TX.

② RF Switch
Mutes RF output. For setting up multiple systems or adjusting settings without transmitting unwanted RF or audio signals.

③ Audio Indicators
Use the control wheel to adjust the audio so that, for the average input signal level, the top two yellow LEDs flicker and the lower LEDs are solid. Press the `enter` button to save the value, `exit` to cancel. The red clip LED indicates the inputs are overdriven. Reduce the level at the audio source or change the input sensitivity of the rack unit from the `Audio` > `Input` menu.

④ Status Display and Controls
Use the navigation buttons to access the configuration menu. Push the control wheel to move the cursor to the next item. Turn the control wheel to change a parameter—the `enter` button flashes. Press it to save the value. Press the `exit` button to cancel changes and return to the previous menu.

⑤ Headphone Monitoring
The monitor control adjusts signal output to the 3.5 mm headphone jack. Push button to toggle between transmitters. Monitor clip LED indicates headphone audio is clipping.

⑥ Power Switch
Turns the unit on and off.

Rear Panel
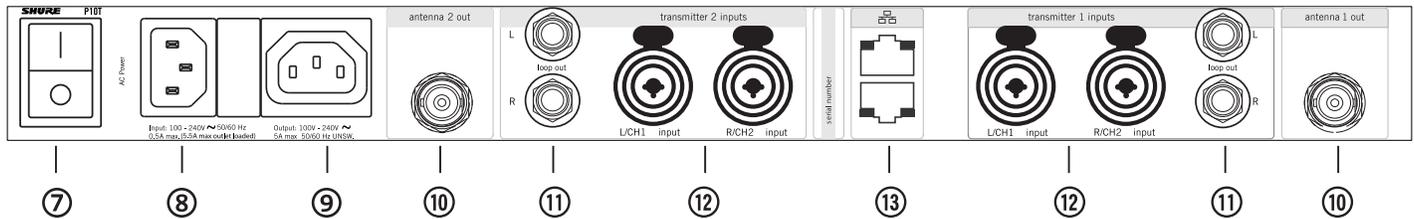
⑦ Primary power switch
This switch disconnects power to the unit. It is not affected by the interface power lock in the `Util` menu. Only the front power switch can be locked.

⑧ Power plug
AC mains power input, IEC Connector 100-240 Vac.

⑨ AC mains power passthrough
Use with an IEC extension cable to supply AC power to another device. Unswitched.

⑩ Antenna (BNC) port
Attach supplied antennas. If you are rack mounting, use a front panel or remote mounting kit from Shure.

⑪ `loop out`
Sends audio signal going into the transmitter to another device.

⑫ Audio Inputs
Connect to balanced or unbalanced outputs. Use either jack for mono input. Accepts male XLR or 6.35 mm (1/4-inch) TRS plugs.

⑬ Ethernet Jack
Two-port RJ-45 Ethernet jack for connection to a network or computer.

Transmitter Menu Structure and Navigation

Home Screen
The home screen provides access to submenus and displays a summary of transmitter settings.
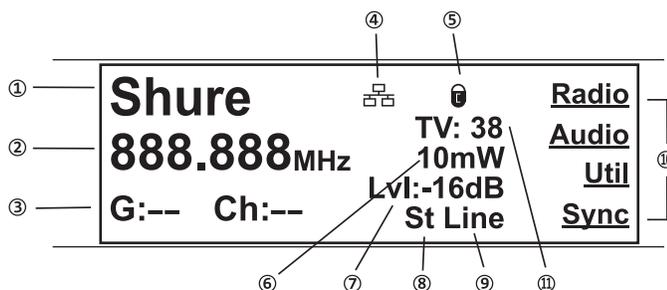
① Audio channel name
② Frequency setting
③ Group and Channel
④ Network Icon
⑤ Lock Icon
⑥ RF Power Level
⑦ Audio Level

⑧ Mix-mono or stereo
⑨ Aux/Line in
⑩ Submenus
⑪ TV Channel

Menu Navigation

Radio Frequency (RF) Settings

Access the `Radio` menu to adjust the frequency and power at which the unit operates.

`G`: Group number. Each group contains channels selected to work well together in a single installation.

`Ch`: Channel number. Sets the transmitter to a channel in the selected group.

`888.888 MHz`: Displays the frequency to which the transmitter is set. Frequency selection; adjustable in increments of 1MHz or 25kHz.

`PWR`: Power level at which the transmitter operates. Select from 10, 50, or 100 mW (power levels vary by region).
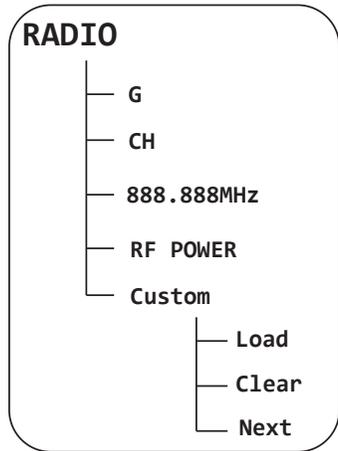
`Custom`: For creating custom frequency groups. See Custom Groups.

```
RADIO

    ─ G

    ─ CH

    ─ 888.888MHz

    ─ RF POWER

    ─ Custom

            ─ Load

            ─ Clear

            ─ Next
```

Audio Settings

Access the following settings from the `Audio` menu.

Input Level (`Input`)

This changes the audio level for the inputs on the back of the rack transmitter.

`Line`: +4 dBu (line level)

`Aux`: −10 dBV (aux level)

Audio Mode (`Mode`)

`Stereo/MX`: Transmits each input as a separate channel.

`Mono`: Combines both inputs into a single channel.

`PTP`: Set up the device for point-to-point wireless audio.

Output Level (`Level`)

Adjust output level.

```
AUDIO

    ── Input

            ── Line

            ── Aux

    ── Mode

            ── Stereo/Mix

            ── Mono

            ── PTP

    ── Level
```
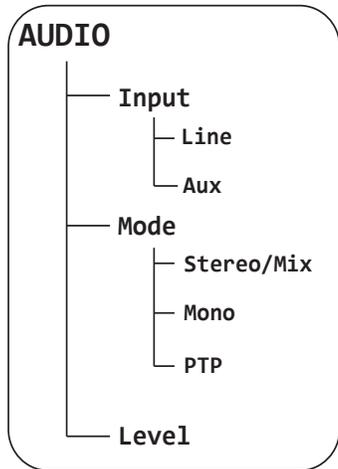
Receiver Synchronization Menu (`Sync`)

Transferring Settings to the Bodypack During Sync (`RxSetup`)

Use this feature to store settings that will be transferred to the bodypack during a sync.

Each parameter has the default value `NoChange`, which leaves that setting unaffected by a sync.

`Lock`
    `ON`: Locks the bodypack interface.
    `Off`: Unlocks the bodypack interface.

`VLim`
    `ON`: Turn volume limit on.
    `Off`: Turn volume limit off.

`LimVal`: Sets value for volume limit.

`HiBoost`: Sets value for high frequency boost.

`Mode`: Sets stereo (`ST`) or MixMode (`MX`).

`BalMx`: Sets balance for MixMode.

`BalSt`: Sets balance for stereo mode.

Downloading and Viewing Spectrum Scan Data (`Spectrum`)

Align the receiver and transmitter IR ports and press `SyncScan` to download spectrum scan data from the receiver.

After downloading data, the following options are available:

`Deploy`: Enters a submenu from which you can deploy open frequencies to all transmitters on the network.

`Cursor`: Enables the control wheel to move the cursor.

`Zoom`: Enables the control wheel to zoom into graphic at cursor position.

Tip: Push the control wheel to toggle between cursor and zoom modes.

Sync

Press to sync the receiver and transmitter using the IR port.

```
SYNC
    └ RxSetup

            ─ Lock

            ─ V Lim

            ─ Lim Val

            ─ Hi Boost

            ─ Mode

            ─ Bal Mx

            ─ Bal St

      Spectrum
         └ Sync Scan

                ─ Deploy

                ─ Cursor

                ─ Zoom

      Sync

         ─ Retry

         ─ OK
```

5
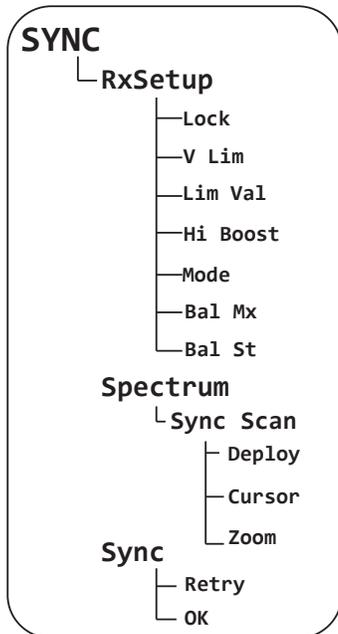
Utility Settings

Channel Name
`Util` > `Channel Name`

Turn control wheel to change channel name. You can set a different name for each channel on the device (this name is uploaded to the bodypack with sync).

Display Settings
`Util` > `Display`

Change the look of the LCD panel from the display menu.

`Brightness`: Sets display brightness to high, low, or medium.

`Disp. Invert`: Changes display from light on dark to dark on light.

`Contrast`: Use the control wheel to adjust contrast.

Interface Locks
Use these controls to lock or unlock power switch and front panel controls.

Power Switch
`Util` > `Lock` > `Power Switch`

`Locked`: Locks power switch.

`Off`: Unlocks power switch.

Front Panel
`Util` > `Lock` > `Front Panel`

`Locked`: Locks the controls on the front panel for the selected transmitter.

`Off`: The front panel is unlocked.

Unlocking Front Panel
To unlock the front panel, select `Util` > `Unlock`

Network Setup
Use this menu to find, display and change how this device connects to the network. There is one set of network settings for both transmitters.

Device Identification (`Device`)
Allows you to assign a display name. This applies to both channels on the device. To name each channel individually, use the `Channel Name` setting.

Setup (`Mode`)
`Automatic`: Default setting for use with DHCP networks.

`Manual`: Manual IP addressing. Allows you to enter an IP address (`IP`) and subnet mask (`SUB`).

`MAC`: Displays MAC address for this device, view only, and there is only one MAC address for both transmitters.

`Reset`: Manual mode only. Resets network settings to the factory defaults.

Find All Network Devices (`Find All`)
Lists all network devices.

• Scroll to any of the listed devices and press `Show Info` to view information about that device.

• Press `Flash` to flash the LEDS of all devices on network

• Press `Back` to return to previous screen

Additional Settings (`More`)
`Product ID`: Displays product serial number.

`Reset All`: Restores the values on all networked devices to factory default settings.

`FW Update`: Displays the receiver firmware version that is currently stored in the transmitter. Press `Download` to transfer the update to a receiver through the IR port.

```
UTIL
  ├── Channel Name
  ├── Display
  │     ├── Brightness
  │     │     ├── High
  │     │     ├── Med
  │     │     └── Low
  │     ├── Disp. Invert
  │     └── Contrast
  ├── Lock
  │     ├── Power Switch
  │     └── Front Panel
  ├── Network
  │     └── Device
  │           ├── Setup
  │           │     └── Mode
  │           │           ├── Automatic
  │           │           └── Manual
  │           │                 ├── IP
  │           │                 ├── SUB
  │           │                 └── MAC
  │           ├── Find All
  │           │     ├── Show
  │           │     │     ├── Flash
  │           │     │     ├── Info
  │           │     │     └── Back
  │           │     └── Flash All
  └── More
        ├── Product ID
        │     └── More
        ├── Reset All
        └── FW Update
              └── Download
```
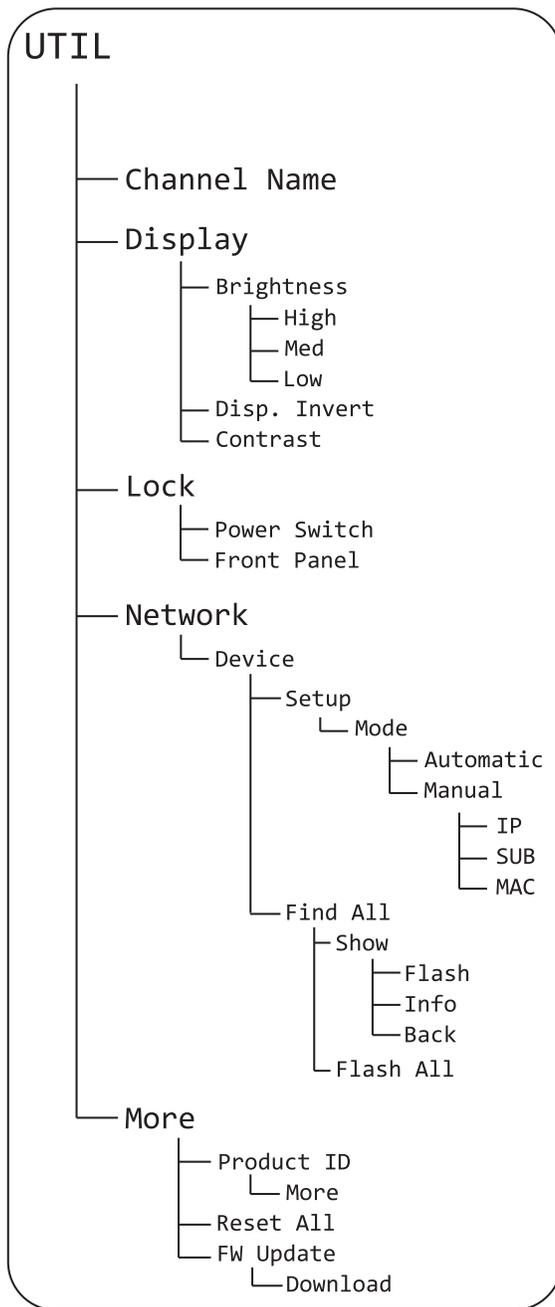
Bodypack Receiver
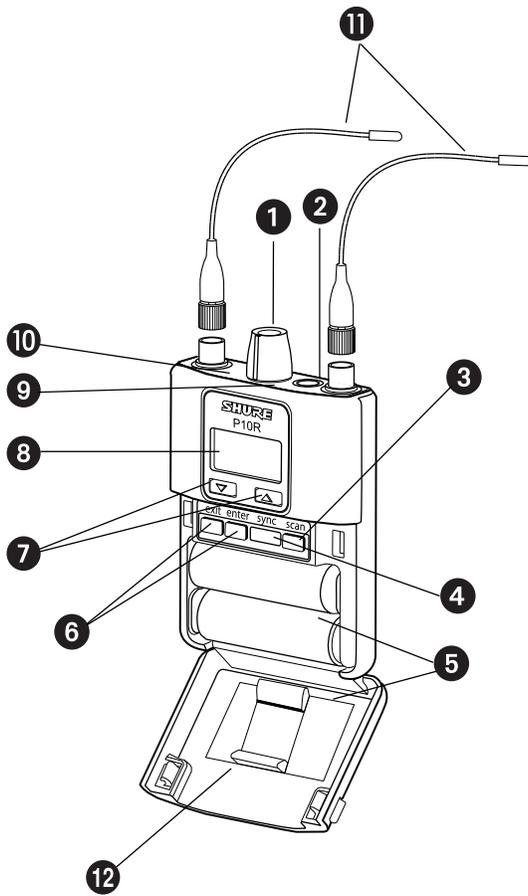
① Power Switch and Volume Control
Turns the bodypack on and off and adjusts earphone volume.

② 3.5 mm Earphone Jack
Insert earphones here.

③ Scan Button
Press the scan button to find an available frequency. Press and hold for two seconds to find the group with the most available channels.

④ IR Window
For transmitting settings between bodypack and rack unit.

⑤ Battery Compartment
Requires 2 AA batteries or Shure rechargeable battery. Open by pressing the latches on both sides and pulling.

⑥ Menu buttons
Use in conjunction with the ▼▲ buttons to access the configuration menus.

⑦ ▼▲ Buttons
Use to adjust the audio mix (in MixMode only), or in conjunction with the menu buttons to change settings.

⑧ LCD Screen
Displays current settings and menus.

⑨ Tri-Color Battery LED
Illuminates green, amber, or red to indicate battery power. When red, change battery immediately.

⑩ Blue RF LED
Indicates the bodypack is receiving a signal from the transmitter.

⑪ SMA Connector
For detachable antennas.

⑫ Removable AA Adapter
Remove to use with a Shure SB900 rechargeable battery.

Note: To remove adapter, open door and slide out. To reinstall adapter, place over the clip and press, there will be an audible click when seated.

RF Settings

Access the following RF settings from the `RADIO` menu.

`G`: Group number. Each group contains channels selected to work well together in a single installation.

`CH`: Channel number. Sets the receiver to a channel in the selected group.

`888.888 MHz`: Displays the frequency to which the transmitter is set. Highlight and use the ▼▲ buttons to set the transmitter to a specific frequency.

`SQUELCH`: Adjusts the squelch setting.

`FULL SCAN`: Performs spectrum scan and displays open frequencies in a graphical interface.

`RF PAD`: Attenuates antenna signals in 3 dB increments.
ANTENNA: Defeats diversity reception for single antenna operation.

Utilities and Display Settings

Access the following settings from the `UTILITIES` menu.

`CUEMODE`: Enters `CUEMODE` to exit, press `enter` and select `EXIT CUEMODE`

`DISPLAY`: Change the display settings on the bodypack

`CONTRAST`: Sets display brightness to high, low, or medium.

`LOCK PANEL`: Locks all controls except power and volume.To unlock, press `exit`, select `OFF`, and press `enter`.

`BATTERY`: When using an SB900 - Shure rechargeable battery, the following information is displayed: `Hrs: Min Left`, `temperature`, `Status`, `Cycle Count`, and `Health`.

`RESTORE`: Returns receiver to factory default settings.

Audio Settings

Access the following audio settings from the `Audio` menu.

Output Mode (`MODE`)
`STEREO`: Stereo
`MIXMODE`: MixMode

High-Frequency EQ Boost (`HIBOOST`)
`OFF`: No boost (flat).
`4 dB`: 4 dB boost at 10 kHz.
`2 dB`: 2 dB boost at 10 kHz.

Volume Limiter (`V LIMIT`)
`V LIMIT`: Turns limiter on (`ON`) or off (`OFF`) .
VALUE: 3 to 9: analogous to volume knob position (for example, 5 is equal to the 5th dot on the volume knob).

Output Gain (`GAIN`)
`HIGH`: Increases gain by 10 dB
`STANDARD(STD)`: 0 dB of gain.

Battery Life

Battery Indicator	Tri-Color Battery LED	Approximate Hours Remaining (h:mm)					
		Alkaline			Li-ion		
		Volume Level			Volume Level		
		4	6	8	4	6	8
▭	Green	6:00 to 3:50	4:20 to 2:45	3:15 to 2:05	8:45 to 4:00	7:15 to 4:00	6:25 to 4:00
▭	Green	3:50 to 2:50	2:45 to 2:00	2:05 to 1:30	4:00 to 3:00	4:00 to 3:00	4:00 to 3:00
▭	Green	2:50 to 1:15	2:00 to 1:00	1:30 to 0:50	3:00 to 2:00	3:00 to 2:00	3:00 to 2:00
▭	Green	1:15 to 0:25	1:00 to 0:20	0:50 to 0:20	2:00 to 1:00	2:00 to 1:00	2:00 to 1:00
▭	Amber	0:25 to 0:15	0:20 to 0:10	0:20 to 0:10	1:00 to 0:30	1:00 to 0:30	1:00 to 0:30
▭	Red	< 0:15	< 0:10	< 0:10	< 0:30	< 0:30	< 0:30
Total Battery Life		6:00	4:20	3:15	8:45	7:15	6:25

Note: Battery life using Energizer brand AA Alkaline batteries and the following conditions:

- Receiver audio set to `HIBOOST = OFF` and `V LIMIT = OFF`
- Transmitter audio `INPUT` set to `Line+4 dBu` and `Level` set to –9 dB
- Audio input to the transmitter: pink noise at +8.7 dBV
- Audio output at receiver: 115 dB SPL in ear with SE425 earphones (impedence at 22 Ω)set at volume level 4.

Note: Using lower-impedance earphones or ones with different sensitivity, different battery types, and higher gain settings in the PSM system may cause the receiver battery life to be different than specified.

Pink noise is a signal with a frequency spectrum such that the power spectral density is inversely proportional to the frequency. In pink noise, each octave carries an equal amount of noise power.

Multiple System Setup

When setting up multiple systems, designate a single bodypack to scan for available frequencies and download them to all the rack units.

The bodypack must be from the same frequency band as all the transmitters.

1. Power on all the rack units. **Turn off the RF**. (This prevents them from interfering with the frequency scan.)

   Note: Turn **on** all other wireless or digital devices as they would be during the performance or presentation (so the scan will detect and avoid any interferance they generate).

2. Use the bodypack to **scan for a group** by pressing and holding the `scan` button for **two seconds**. The bodypack displays the group and the number of available channels, and flashes `SYNC NOW....`.

   Important: Note the number of available channels. If you have more rack units than available channels, eliminate potential sources of interference and try again, or call Shure Applications for assistance.

3. Sync the bodypack with the first rack unit by aligning the IR windows and pressing `sync`.

4. Press `scan` again on the bodypack to find the next available frequency.

5. Sync the bodypack with the next rack unit.

6. Repeat with all the rack units.

7. Sync each performer's bodypack to its respective rack unit by aligning the IR windows and pressing `snyc`. DO NOT press scan on the bodypacks.

8. Turn on the RF on all rack units. The systems are ready to use.

CueMode

CueMode allows you to upload the name and frequency settings from multiple rack units and store them as a list on a single bodypack. You can then, at any time, scroll through that list to hear the audio mix from each transmitter, just as each performer does during a show.

CueMode lists are retained even if CueMode is exited, the bodypack is turned off, or batteries are removed.

Note: Set the channel frequency and assign display names for each transmitter **before** creating your CueMode list.

Adding Transmitters to the CueMode List

Note: The transmitter must be from the same frequency band as the bodypack.

1. Open the battery door and press the `enter` button.

2. From the main menu, scroll to `UTILITIES` and press `enter`. Select `CueMode` and press `enter` again.

3. Align IR windows and press `sync` on the rack unit.

   The LCD displays `SYNC SUCCESS` after frequency and name data are uploaded to the CueMode list. It also displays the CueMode number for that transmitter and the total number of transmitters.

4. Repeat the above step for each transmitter.

Note: Syncing while in CueMode does not change any of the settings on the bodypack.

Auditioning Mixes

1. Enter CueMode from the `UTILITIES` menu.

2. Use the ▼▲ buttons to scroll through your CueMode list to hear the mixes.

Exiting CueMode

Exit CueMode by pressing `enter` and selecting `EXIT CUEMODE`.

Managing CueMode Mixes

While in Cue Mode, you can access the following menu by pressing `enter`:

`REPLACE MIX`: Select and press sync on a rack unit to upload new data for the current mix (for example, if you have changed the transmitter frequency).

`DELETE MIX`: Removes the selected mix.

`DELETE ALL`: Removes all mixes.

`EXIT CUEMODE`: Exits CueMode and returns the bodypack to the previous frequency setting.

Frequency Scan

Use a frequency scan to analyze the RF environment for interference and identify available frequencies. There are three types of scan:

- **Channel Scan** Press the scan button on the bodypack. Finds the first available channel.
- **Group Scan** Press and hold the scan button for two seconds. Finds the group with the greatest number of available channels. (Each group contains a set of frequencies that are compatible when operating multiple systems in the same environment.)
- **Full Scan** From the bodypack menu select `AUDIO` > `FULL SCAN`. Press `RUN SCAN` to initiate a full scan. Press `SPECTRUM` to view full results in a graphical display.

Note: When performing a frequency scan:

- **Turn off** the RF on the transmitters for the systems you are setting up. (This prevents them from interfering with the frequency scan.)
- **Turn on** potential sources of interference such as other wireless systems or devices, computers, CD players, large LED panels, effects processors, and digital rack equipment so they are operating as they would be during the presentation or performance (so the scan will detect and avoid any interference they generate).

Sync

You can transfer frequency settings in either direction: from the bodypack to the rack unit, or from the rack unit to the bodypack.

Note: You can also choose to transfer other settings to the bodypack during a sync, such as lock or mode settings, using the `Sync` > `RxSetup` menu on the rack transmitter.

Downloading settings from the bodypack

1. Press the `scan` button on the bodypack.
2. Align the IR windows and press the `sync` button from the rack transmitter LCD menu while the bodypack display is flashing "`SYNC NOW...`".

   The level LEDs on the rack unit flash.

Sending settings to the bodypack

1. Press the `Sync` button on the rack transmitter to accesss the sync menu.
2. Align the IR windows.

   When properly aligned the IR window on the transmitter illuminates.
3. Press `Sync` to transfer settings

   The blue LED on the bodypack flashes.

Creating Custom Groups

This feature allows you to create your own groups of frequencies.

Menu: `Radio` > `Custom`

1. Turn the Control wheel to select a custom group from the `Group` menu. (U1, U2, etc.)
2. Push the Control wheel to move to the Channel parameter and turn it to select a channel (01, 02, 03, etc.)
3. Push the Control wheel to move to the Freq parameter and select a frequency for that channel.
4. Push the `Next` menu key to select a frequency for the next channel in that group.
5. Select `Load` to find all other devices of the same model and band on the network. Then press `enter` to deploy the custom group list to all these devices.

   This overwrites all existing custom groups.
6. `Clear` deletes all custom groups for all devices on the network.

MixMode

Some performers need to hear more of their own voice or instrument, while others want to hear more of the band. With MixMode, the performer creates their own mix using the balance control (▼▲ buttons) on the bodypack.

To use MixMode, send a solo mix of the performer to the `CH. 1 IN` input on the transmitter, and send a band mix to the `CH. 2 IN` input.

Set the performer's bodypack for MixMode. The bodypack combines the two signals and sends them to both earphones, while the balance control on the bodypack adjusts the relative levels for each.

LOOP Applications

Use `LOOP OUT` L (left) and R (right) outputs to send a copy of the audio signal going into the transmitter to other devices. Following are a few of the many applications for these outputs.

Note: The input level control and the input pad do not affect the `LOOP OUT` signals.

MixMode for Multiple Systems

Configure each system for MixMode. From the mixing console, send a mix of the whole band to input 2 of the first transmitter. Connect the `LOOP OUT R` output to the `CH. 2 IN` input of the next transmitter. Continue the chain with all the transmitters.

Next, create solo mixes for each performer. Send each mix to input 1 of the transmitter for that performer.

Floor Monitors

Send the audio from the LOOP outputs to onstage loudspeakers. The bodypack and the onstage monitors receive the same audio signals.

Recording Devices

To record a performance, connect the LOOP outputs to the inputs of a recording device.

Squelch

Squelch mutes audio output from the bodypack when the RF signal become noisy. While squelch is activated, the blue LED on the bodypack turns off.

For most installations, squelch does not need adjustment, and it keeps the performer from hearing hiss or noise bursts if the RF signal becomes compromised. However, in congested RF environments or in close proximity to sources of RF interference (such as large LED video panels), the squelch may need to be lowered to prevent excessive audio dropouts. With lower squelch settings, the performer may hear more noise or hiss, but will experience fewer audio dropouts.

Important: Before lowering squelch, first try to eliminate the problem by finding the best set of frequencies for your installation and removing potential sources of interference.

Caution: Turning off or lowering the squelch setting can increase the noise level and cause discomfort to the performer:

• Do not lower the squelch setting unless absolutely necessary.
• Turn earphone volume to the lowest setting before adjusting squelch.
• Do not change the squelch setting during a performance.
• Turn up the transmitter `level` setting to make noise or hiss less noticeable.

Squelch Settings

`HIGH(NORMAL)`		Default factory setting.
`MID`		Moderately decreases the signal-to-noise ratio required to squelch the receiver.
`LOW`		Greatly decreases the noise squelch threshold.
`PILOTONLY*`	⊘	Turns off noise squelch leaving only pilot squelch on.
`NOSQUELCH*`	⊗	Turns off noise and pilot tone squelch. (Sometimes used as a debugging tool by monitor engineers or RF coordinators to "listen" to the RF environment.)
* Symbol appears in display window.		

Point-to-Point Wireless Audio
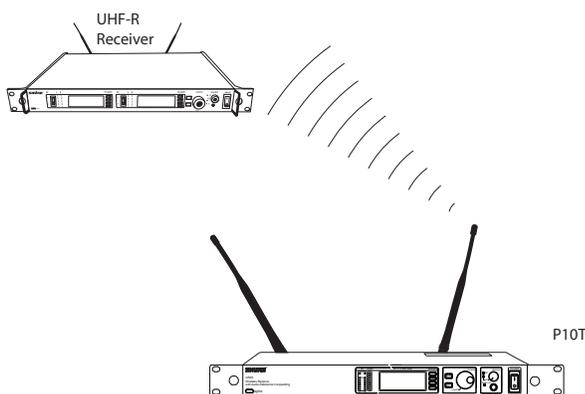
UHF-R Receiver

P10T

Use PTP mode to allow a P10T to transmit to a UHF-R receiver. This allows a transmitter and receiver setup where both units are racked and powered by AC.

For more information visit: www.shure.com/americas/products/personal-monitor-systems

Ethernet Connection

Each transmitter has an RJ-45 port on the back for connecting to other transmitters over an Ethernet network. Networking transmitters allows you to automatically set frequencies for all the transmitters with a single group scan command.

Add transmitters to a network using the default automatic network setting (`Util` > `Network` > `Mode` > `Automatic`):

1. Connect transmitters to an Ethernet router with DHCP service.
2. Use Ethernet switches to extend the network for larger installations.
3. Connect transmitters in series.

Accessing the Network with a Computer

You can control and monitor all networked transmitters through a computer running Shure Wireless Workbench software, Version 6 or later. If using the default automatic network setting, make sure your computer is configured for DHCP.

Note: Some security software or firewall settings on your computer can prevent you from connecting to the transmitter. If using firewall software, allow connections on port 2201.

Static IP Addressing

Static IP addressing is also supported. An IP address can be assigned through the network menu (`Util` > `Network` > `Mode` > `Manual`).

Note: Dual transmitters use a single IP address, which may be set through either LCD interface.

Connecting Transmitters

Direct

Computer

Computer

Router with DHCP

Computer

Extended Network

Computer

Switch

Switch
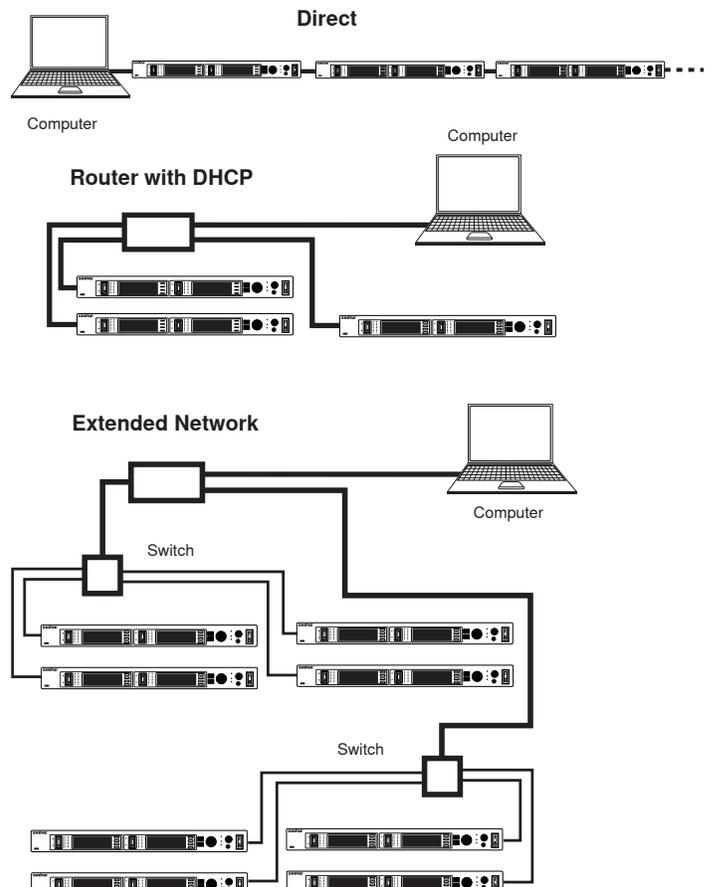
Connecting to an AMX or Crestron System

The following messages can be used to communicate with an AMX or Crestron unit across an Ethernet connection.

Message Types

The control system sends the following command messages:

SET	Sent from the control system to the Shure device to change the value of a parameter. Used to set the parameter to a specific value. Once a **SET** command is sent, the Shure device sends back a **REPORT** string with the current resultant setting.
GET	Gets the current value of a parameter. Once a **GET** command is sent, the Shure device will send back a **REPORT** string with the current setting.
REPORT	Reports the current value for a parameter. The **REPORT** string is sent from the Shure device to the Control system in response to a **SET** or **GET** command. The **REPORT** string is also sent when the value of the parameter is changed on the Shure device.

Syntax

All messages sent and received are ASCII characters.

*   Each message begins with a "<" followed by a space.
*   Each message ends with a space followed by an ">"
*   Each message is terminated by a carriage return and line feed (CRLF). The control system may need to enter the hex value, equivalent to 0x0D0A. Please see the control system user guide for information on entering carriage returns.
*   If the message is a box parameter, there should be no channel number in the string.

Example Messages

Example Messages for Channel Parameters

*   <GET 1 FREQUENCY >/0d/0a
*   <REPORT 1 FREQUENCY 578000 >/0d/0a

Example Messages for Box Parameters

*   <SET DEVICE_NAME Shure >/0d/0a
*   <REPORT DEVICE_NAME Shure >/0d/0a

Command Response Table

	COMMAND	RESPONSE
View Transmitter Name	GET DEVICE_NAME	REPORT DEVICE_NAME vvvvvvvv
Set Channel Name	SET x CHAN NAME vvvvvvvv	REPORT x CHAN_NAME vvvvvvvv
Get Channel Name	GET x CHAN NAME	REPORT CHAN_NAME vvvvvvvv
Set Audio Level	SET x AUDIO_IN_LVL vvvv	REPORT x AUDIO_IN_LVL vvvv
View Audio Level	GET x AUDIO_IN_LVL	REPORT x AUDIO_IN_LVL vvvv
Set Transmitter Group & Channel	SET x GROUP_CHAN gg,cc	REPORT x FREQUENCY vvvvvvvvvvvv REPORT x GROUP_CHAN gg,ccvvv
View Transmitter Group & Channel	GET x GROUP_CHAN	REPORT x GROUP_CHAN gg,cc
Set Transmitter Frequency	SET x FREQUENCY vvvvvvvvvvvv	REPORT x FREQUENCY vvvvvvvvvvvv REPORT x GROUP_CHAN --,--vvv
View Transmitter Frequency	GET x FREQUENCY	REPORT x FREQUENCY vvvvvvvvvvvv
Set RF Tx Level	SET x RF_TX_LVL vvvvvv	REPORT x RF_TX_LVL vvvvvv
View RF Tx Level	GET x RF_TX_LVL	REPORT x RF_TX_LVL vvvvvv
Set RF Mute	SET x RF_MUTE vvvv 1 = mute, 0 = unmute	REPORT x RF_MUTE vvvv 1 = mute, 0 = unmute
View RF Mute	GET x RF_MUTE 1 = mute, 0 = unmute	REPORT x RF_MUTE vvvv 1 = mute, 0 = unmute
Set Audio Tx Mode	SET x AUDIO_TX_MODE vvvv 1 = mono, 2 = point to point, 3 = stereo	REPORT x AUDIO_TX_MODE vvvv 1 = mono, 2 = point to point, 3 = stereo
View Audio Tx Mode	GET x AUDIO_TX_MODE	REPORT x AUDIO_TX_MODE vvvv 1 = mono, 2 = point to point, 3 = stereo
Set Audio Input Line Level	SET x AUDIO_IN_LINE_LVL vvvv 0 = off (Aux), 1 = on (Line)	REPORT x AUDIO_IN_LINE_LVL vvvv 0 = off (Aux), 1 = on (Line)
View Audio Input Line Level	GET x AUDIO_IN_LINE_LVL	REPORT x AUDIO_IN_LINE_LVL vvvv 0 = off (Aux), 1 = on (Line)
Set Metering Rate	SET x METER_RATE vvvvvvvvvvvv 0 = off, value in milliseconds	REPORT x METER_RATE vvvvvvvvvvvv 0 = off, value in milliseconds
View Metering Rate	GET x METER_RATE	REPORT x METER_RATE vvvvvvvvvvvv 0 = off, value in milliseconds
Audio Meter Level	REPORT x AUDIO_IN_LVL_L vvvvvvvvvvvv	REPORT x AUDIO_IN_LVL_L vvvvvvvvvvvv REPORT x AUDIO_IN_LVL_R vvvvvvvvvvvv

Spectrum Scan

Use this feature to scan the full RF spectrum for potential sources of interference and deploy open frequencies to all receivers on the network. A graphical representation of the scan data may be viewed on both the transmitter and receiver. This allows you to scroll through the graph to reveal details about the frequency and strength of the interfering signals.

Scanning and Deploying Frequencies

1. Turn off RF on all receivers.

2. **Collect the scan data.** From the bodypack receiver `MAIN MENU`, select `RADIO` > `FULL SCAN` > `RUN SCAN`

   The receiver displays `SPECTRUM SCAN` and scans the full spectrum.

3. **Load the scan data from the bodypack receiver to the rack transmitter.** Align the IR windows and press `Sync` > `Spectrum` > `SyncScan`

   The receiver displays the scan data as a graph and gives options for viewing and deploying.

4. **Search network for devices.** From the rack transmitter `Sync` > `Spectrum` menu, press `Deploy`.

   The rack transmitter searches the network for all available transmitters.

5. **Choose a group.** Use the control wheel to select from the available groups.

   The number of open frequencies for each group is displayed next to `Open Frequencies`.

6. **Deploy frequencies.** Press the flashing `enter` button to deploy frequencies to all channels.

   The LEDs flash on all affected channels.

Viewing Spectrum Data

From the Bodypack Receiver

`MAIN MENU` > `RADIO` > `FULL SCAN` > `SPECTRUM`

- Adjust the cursor position using the ▼▲ keys.
- Press `enter` to zoom in at the cursor position. Press `exit` to zoom out.
- Press `scan` to display frequency and power of signal at the cursor position.

From the Rack Transmitter

`Sync` > `Spectrum`

- Adjust the cursor position by pressing `Cursor` and using the control wheel.
- Frequency and power of signal at the cursor position is displayed at the top of the screen.
- Press `Zoom` and use the control wheel to zoom in and out.

Updating Receiver Firmware

Use the following steps to update the firmware on a bodypack receiver.

1. Use the WWB update manager to download the receiver firmware to the rack transmitter.

2. On the transmitter, navigate to the `Util` > `More` > `FW Update` menu.

3. Align the receiver and transmitter IR ports and press `Download`. The download begins, which can take 50 seconds or longer.

Once the download is complete, the receiver automatically begins the firmware update, which overwrites the existing firmware.

CAUTION! Do **not** turn off the receiver until the update is complete.

SPECIFICATIONS

PSM1000

RF Carrier Range	470–952 MHz varies by region
Compatible Frequencies Per band	39
Tuning Bandwidth	72–80 MHz Note: varies by region
Operating Range environment dependent	90 m (300 ft)
Audio Frequency Response	35 Hz–15 kHz +/-1dB
Signal-To-Noise Ratio A-Weighted	90 dB (typical)
Total Harmonic Distortion ref. ±34 kHz deviation @1 kHz	<0.5% (typical)
Companding	Patented Shure Audio Reference Companding
Spurious Rejection ref. 12dB SINAD	>80 dB (typical)
Frequency Stability	±2.5 ppm
MPX Pilot Tone	19 kHz (±0.3 kHz)
Modulation	FM*, MPX Stereo *ref. ±34 kHz deviation @1 kHz
Operating Temperature	-18°C to +57°C

P10R

Tri-Band RF Filtering	–3 dB at 30.5 MHz from the center frequency of each band
Active RF Gain Control	31 dB Adjusts RF sensitivity to provide more RF dynamic range
Active RF Sensitivity at 20 dB SINAD	2.2 μV
Image Rejection	>90 dB
Adjacent Channel Rejection	>70 dB
Squelch Threshold	22 dB SINAD (±3 dB) default setting
Intermodulation Attenuation	>70 dB
Blocking	>80 dB
Audio Output Power 1kHz @ <1% distortion, peak power, @32Ω	100 mW (per output)
Minimum Load Impedance	9.5 Ω
High Boost	Selectable: +2 dB, +4 dB @ 10 kHz
Volume Limiter	Selectable: 3–9 Limits volume adjustment knob. Selected value analogous to volume knob increment.
Net Weight	196 g(6.6) (with batteries)
Dimensions	99 x 66 x 23 mm (3.9 in. x 2.6 in. x 0.9 in.) H x W x D
Battery Life	4–6 hours (continuous use) AA batteries

P10T

RF Output Power	selectable: 10, 50, 100 mW (+20 dBm)
RF Output Impedance	50 Ω (typical)
Net Weight	4.5 kg (10)
Dimensions	44 x 483 x 343 mm (1.7 x 19.0 x 13.5 in.), H x W x D
Power Requirement	**Input:** 100–240 V AC, 50/60 Hz, 0.5 Amax. (5.5, with outlet loaded) **Output:** 100–240 V AC, 50/60 Hz, 5 Amax., unswitched

Audio Input

Connector Type	Combination XLR and 6.35 mm (1/4") TRS
Polarity	**XLR:** Non-inverting (pin 2 positive with respect to pin 3) **6.35 mm (1/4") TRS:** Tip positive with respect to ring
Configuration	Electronically balanced
Impedance	70.2 kΩ (actual)
Nominal Input Level	switchable: +4 dBu, –10dBV
Maximum Input Level	**+4 dBu:** +29.2 dBu **-10dBV:** +12.2 dBu
Pin Assignments	**XLR:** 1=ground, 2=hot, 3=cold **6.35 mm (1/4") TRS:** Tip=hot, Ring=cold, Sleeve=ground
Phantom Power Protection	Up to 60 V DC

Audio Output

Connector Type	6.35 mm (1/4") TRS
Configuration	Electronically balanced
Impedance	Connected directly to inputs

ACCESSORIES AND PARTS

Furnished Accessories

P10R Antenna	
470–542 MHz	UA700
540–626 MHz	UA710
596–692 MHz	UA720
670–830 MHz	UA730
830–952 MHz	UA740
P10T Antenna	
470–542 MHz	UA820G10
554-626 MHz	UA820J8
596-668 MHz	UA820K1
626-698 MHz	UA820L8
670-742 MHz	UA820LCH
710-790 MHz	UA820P8
774-865 MHz	UA820A
944-952 MHz	UA820X
518-582 MHz	UA820H8
Front Mount Antenna Cable	95A9023
Zipper Bag	95A2313
Hardware Kit (Rack mounting Screws)	90XN1371
Bumper Kit	90B8977
AA Adapter	65A15224

Optional Accessories

8-to-1 antenna combiner for better RF performance	PA821SWB
4-to-1 antenna combiner with power distribution to 4 transmitters (better RF performance and eliminates need for external power supply)	PA421SWB
Passive Directional Antenna	PA805SWB
Helical Antenna	HA-8089
Passive Omnidirectional Antenna	UA860SWB
Coaxial Cable, BNC-BNC, RG58C/U type, 50 Ohm, 2 ft length (0.6 m)	UA802
Coaxial Cable, BNC-BNC, RG58C/U type, 50 Ohm, 6 ft length (2 m)	UA806
Coaxial Cable, BNC-BNC, RG8X/U type, 50 Ohm, 25 ft length (7.5 m)	UA825
Coaxial Cable, BNC-BNC, RG8X/U type, 50 Ohm, 50 ft length (15 m)	UA850
Coaxial Cable, BNC-BNC, RG213/U Type, 50 Ohm, 100 ft length (30 m)	UA8100

BAND	RANGE	Output Power (mW)
G10	470-542	10/50/100
G10E	470-542	10/50
G11	479-542	6/10
H8Z	518-582	10/50
J8	554-626	10/50/100
J8E	554-626	10/50
K10E	596-668	10/50
L8	626-698	10/50/100
L8E	626-698	10/50
L9E	670-742	10/50
L10	670-742	10/20
P8	710-790	10/50
Q21	710-787	10/50
Q22E	750-822	10/50
Q23	750-822	10/20
R26	794-806	6/10
R27	794-806	10/50
A24	779-788 797-806	6/10
X1	944-952	10/50/100
X2	925-932	10/50
X7	925-937.5 MHz	10

NOTE: This Radio equipment is intended for use in musical professional entertainment and similar applications. This Radio apparatus may be capable of operating on some frequencies not authorized in your region. Please contact your national authority to obtain information on authorized frequencies and RF power levels for wireless microphone products.

Certifications

P10T, P9R

Meets requirements of the following standards: EN 300 422 Parts 1 and 2, EN 301 489 Parts 1 and 9, EN60065.

Meets essential requirements of the following European Directives:

- R&TTE Directive 99/5/EC
- WEEE Directive 2002/96/EC, as amended by 2008/34/EC
- RoHS Directive 2002/95/EC, as amended by 2008/35/EC
  Note: Please follow your regional recycling scheme for batteries and electronic waste

P10R

Approved under the Declaration of Conformity (DoC) provision of FCC Part 15.

Certified in Canada by IC to RSS-123.

P10T

Certified under FCC Part 74.

Certified by IC in Canada under RSS-123 and RSS-102.

The CE Declaration of Conformity can be obtained from Shure Incorporated or any of its European representatives. For contact information please visit www.shure.com

The CE Declaration of Conformity can be obtained from: www.shure.com/europe/compliance

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PERU DECLARATION OF CONFORMITY

Shure Incorporated

5800 W. Touhy Avenue

Niles, Illinois 60714-4608, U.S.A.

(847) 600-2000

Shure Incorporated declares that the following product

Model: P10TER=-G10E (470-542MHz)

Description: UHF FM Wireless In-Ear Monitor System

Has been tested and found to comply with the limits set in Peru wireless regulatory standard *RM N° 204-2009-MTC/03*. It's effective radiated power (ERP) has been measured to be less than 10 mW, as measured in accordance with ETSI standard EN 300 422.

Signed _____ **Date:** __August 19, 2011

Name, Title: Alex Chung, Sr. Manager, Global Compliance, Shure Incorporated

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