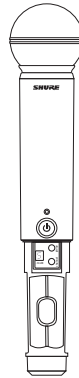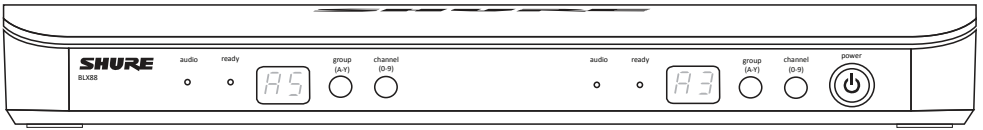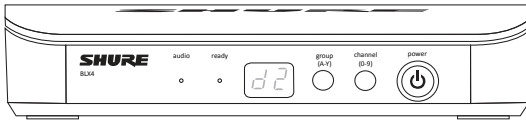# SHURE

**LEGENDARY
PERFORMANCE™**

BLX Wireless System

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. Install in accordance with the manufacturer's instructions.
8. DO NOT install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. DO NOT defeat the safety purpose of the polarized or grounding-type 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 ultimate rated current 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.

⚠ 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.

BLX

System Components

Note: Your system comes with a combination of the following components.

- BLX1 Bodypack Transmitter
- BLX2 Handheld Transmitter (choice of SM58, BETA58A, or PG58)
- BLX4 Wireless Receiver
- BLX88 Dual Wireless Receiver
- PS21 Power Supply

- Lavalier microphone (choice of PG185, WL185 or WL93)
- Headworn microphone (choice of PG30 or WH30-TQG)
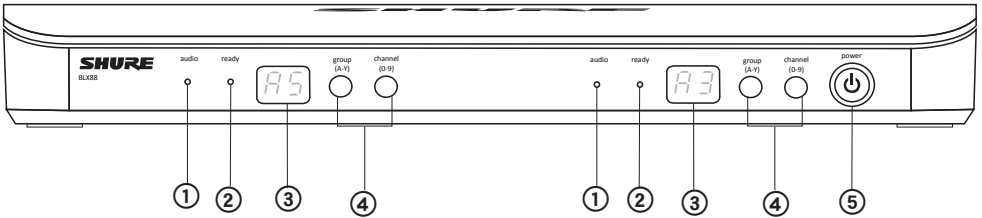- Instrument microphone (BETA98H)
- Guitar cable (WA302)

Features

Front Panel

**BLX4**
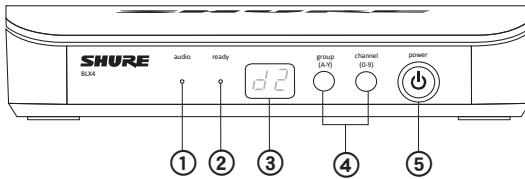
BLX88

① **audio LED**
Indicates strength of incoming audio signal: green for normal and red for overload.

② **Ready LED Icon**
Green light indicates system is ready for use and receiving transmitter signal.

③ **LED Display**
Displays group and channel setting.

④ **group and channel Buttons**
Scan: Push and release group button to scan for an open group and channel.
Manual: Push and hold group button to find an open group. Push and release channel button to find a channel in the current group.

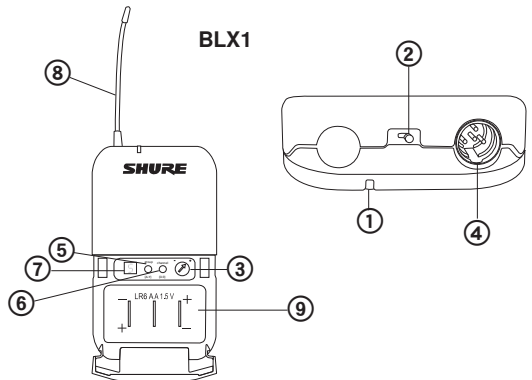⑤ **power Button**
Turns power on or off.

Back Panel

BLX4

① ② ③ ④

BLX88

③ ④ ② ① ③ ④
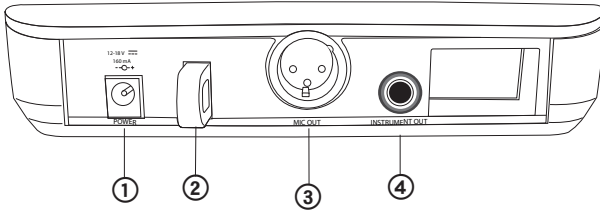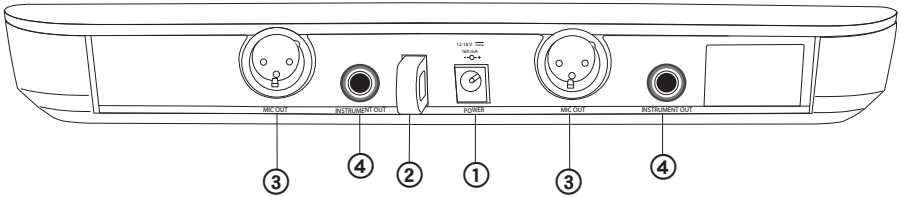
① **AC Adapter Jack**

② **Adapter Cord Tie-Off**

③ **XLR microphone output jack MIC out**

④ **6.35 mm (1/4") instrument level output jack instrument out**

Note: XLR and 1/4" connectors can be used simultaneously. Refer to the output information in Specifications.

BLX1

① **LED Indicator**
Displays power and battery status (see table).

② **power Switch**
Toggles power on or off.

③ **Audio Gain Adjustment**
Gain thumb wheel—located on the inside of bodypack door.

④ **4-Pin Microphone Input Jack (TA4 connector)**

⑤ **group Button**
Changes group setting.

⑥ **channel Button**
Changes channel setting.

⑦ **LED Display**
Displays group and channel setting.

⑧ **Antenna**

⑨ **Battery Compartment**

BLX1

BLX2

① **LED Indicator**
Displays power and battery status (see table).

② **power Button**
Push to turn power on or off.

③ **group Button**
Changes group setting.

④ **channel Button**
Changes channel and gain setting.

⑤ **LED Display**
Displays group and channel setting.

⑥ **Identification Cap**

⑦ **Battery Compartment**

BLX2

2
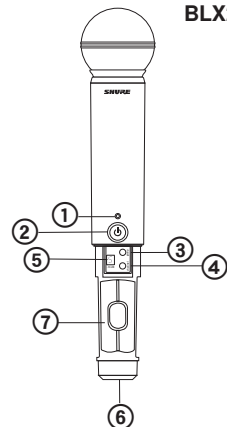
Transmitter LED Indicators

LED Indicator	Status
Green	Ready
Rapidly Flashing Amber	Controls locked
Solid Red	Battery power low (1 hour remaining*)
Flashing Red and shuts off	Batteries dead (change batteries to power on transmitter)

*For alkaline batteries only. For rechargeable batteries, solid red means the batteries are dead.

Single System Setup
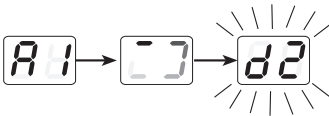
Before you begin, turn off all transmitters and turn on any equipment (other microphones or personal monitoring systems) that could cause interference during the performance.

1. Press and release the `group` button on the receiver.

   The receiver scans for the clearest group and proceeds to channel scan.

   Note: If you want to stop the scan, push the `group` or `channel` button.

2. Turn on transmitter and change the group and channel to match the receiver (See Manually Setting Group and Channel).

   Once the receiver is set up, perform an audio check on the microphone.
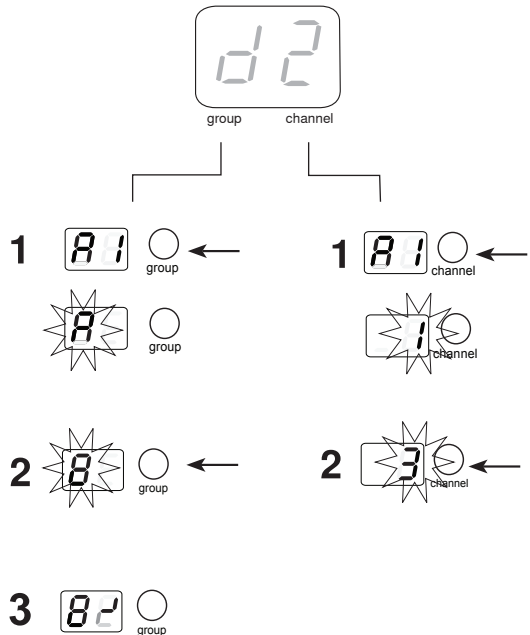
Manually Setting Group and Channel

Receiver Setup

Group (letter)

1. Hold the `group` button on the receiver until the display begins to flash.

2. While the display is flashing, press the `group` button again to advance to the next group.

   Note: Only the group setting will be displayed during the manual setup.

3. Once the desired group is reached, release the `group` button. Then the receiver will automatically perform a channel scan.

Channel (number)

If channel needs to be changed, follow the same procedure using the `channel` button instead of the `group` button.

Transmitter Setup

Transmitter group and channel must be manually set to match the receiver.

Group (letter)

1. Press and release the `group` button on the transmitter to activate the display. Press the `group` button again and the display flashes.
2. While the display is flashing, press the `group` button again to advance to the desired group setting.

Channel (number)

If channel needs to be changed, follow the same procedure using the `channel` button instead of the `group` button.

Note: When the group and channel correctly match the receiver, the `ready` LED on receiver illuminates.

Multiple System Setup

Up to 12 systems can operate simultaneously (band and RF environment dependent).

Important: Set up each system one-at-a-time. Once a receiver and transmitter is tuned to the same group and channel, leave the transmitter powered on. Otherwise, scans from the other receivers will not detect that channel as occupied. For the BLX88, be sure to setup both transmitters before progressing to the next receiver.

Turn **on** any other equipment that could cause interference during the performance so it will be detected during the group and channel scans in the following steps.

Before you begin system set up, turn all receivers **ON** and all transmitters **OFF**.

For the first receiver:

1. Perform a group scan.

   This finds the group with the most clear channels.

   Note: For the BLX88, the group scan sets up both receivers at the same time.
2. Turn on the first transmitter and change the group and channel to match receiver.
3. Leave the transmitter on and continue with the additional systems.

For each additional receiver:

1. Use manual setup to change the receiver to match the group setting of the first receiver. Recall that each time the group setting is changed, a channel scan is automatically done.
2. Turn on the transmitter and change the group and channel to match the receiver.
3. Leave the transmitter on and continue to the next system.
4. Once all receivers are set up, perform an audio check on all microphones.

Locking and Unlocking Controls

Lock system controls to prevent accidental setting changes or power off.

Transmitter

Turn the transmitter on. Hold the `group` button, then press the `channel` button for approximately 2 seconds. The LED indicator rapidly flashes amber when locked and green when unlocked.

Receiver

Turn the receiver on. Simultaneously press the `group` and `channel` button to lock or unlock. The display flashes rapidly.

When locked, the LED display flashes rapidly if any key is pressed.

The BLX88 can be locked from either side for both sides.

Wireless Tips to Improve System Performance

If you encounter wireless interference or dropouts, try the following suggestions:

- Replace the transmitter batteries
- Choose a different frequency channel
- Reposition the antennas so there is nothing obstructing a line of sight to the transmitter (including the audience)
- Avoid placing transmitter and receiver where metal or other dense materials may be present
- Move the receiver to the top of the equipment rack
- Remove nearby sources of wireless interference, such as cell phones, two-way radios, computers, media players, and digital signal processors
- Keep transmitters more than two meters (6 feet) apart
- Keep the transmitter and receiver more than 5 meters (16 feet) apart
- Keep them away from large metal objects
- During sound check, mark trouble spots and ask presenters or performers to avoid those areas

Getting Good Sound

Correct Microphone Placement

- Hold the microphone within 12 inches from the sound source. For a warmer sound with increased bass presence, move the microphone closer.
- Do not cover grille with hand.

Wearing the Headworn Microphone

- Position the headworn microhpone 13 mm (1/2 in.) from the corner of your mouth.
- Position lavalier and headworn microphones so that clothing, jewelry, or other items do not bump or rub against the microphone.
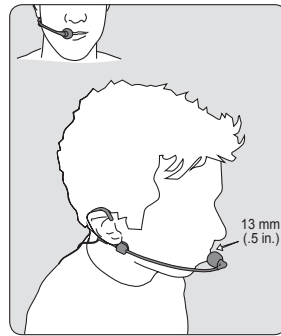
Adjusting Gain

Monitor the `audio` LED indicator on the receiver front panel when setting the transmitter gain.

- **Green**: normal levels
- **Red**: excessive sound levels (overload).

BLX1

Use the thumb wheel on the inside of the bodypack battery door to adjust the gain up (+) or down (–) until desired level is reached. For instruments, turn gain to minimum setting. For lavaliers, increase the gain as desired. The `audio` LEDs on the receiver should illuminate when you speak into the microphone or play your instrument. The red LED should only illuminate infrequently when you speak loudly or play your instrument loudly.
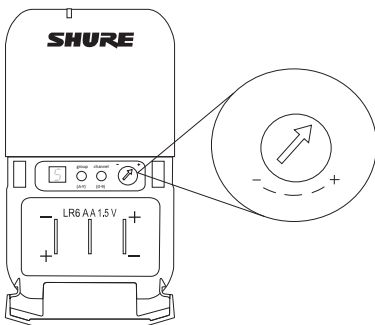
BLX2

The BLX2 features two gain level settings, default and attenuated (-10 dB). The default setting is used for most situations. If the receiver `audio` LED flickers red often, set the microphone to attenuated. Use the `channel` button to change the gain setting.

1. Hold down the `channel` button for 5 seconds.

   A dot appears on the lower right-hand corner of the LED display, which indicates −10 dB gain setting has been activated.

2. To change the gain back to default, hold the `channel` button again for 5 seconds, or until the dot disappears.
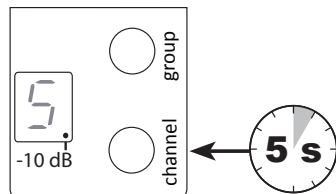
Batteries

Expected life for AA batteries is up to 14 hours (total battery life varies depending upon battery type and manufacturer).

When the LED indicator turns red, it signifies "low battery" with approximately 60 minutes of remaining battery life.

For alkaline batteries only. For rechargeable batteries, solid red means the batteries are dead.
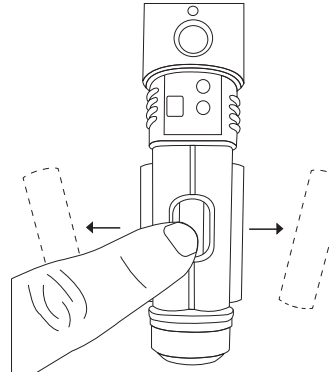
To remove batteries from the handheld transmitter, push them out through the opening in the microphone battery compartment.

⚠ **WARNING:** Danger of explosion if battery incorrectly replaced. Operate only with Shure compatible batteries.

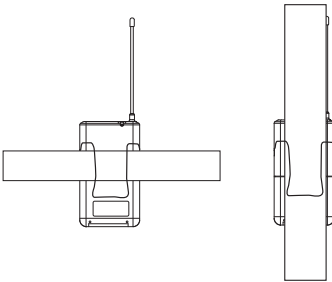⚠ **WARNING:** Battery packs shall not be exposed to excessive heat such as sunshine, fire, or the like.

Wearing the Bodypack Transmitter

Clip the transmitter to a belt or slide a guitar strap through the transmitter clip as shown.

For best results, the belt should be pressed against the base of the clip.

Power Off

Hold down the `power` button to power off the BLX2 or BLX4/88. To power off the BLX1, slide the power toggle switch to OFF.

Removing and Installing Identification Caps

The BLX2 is equipped with a black identification cap from the factory (dual vocal systems comes with a black and gray cap).

To remove: Remove battery cover. Squeeze sides and pull off cap.

To install: Make sure the tab matches the slot on the bottom of the handheld and click into place. Replace battery cover.

An optional Identification Cap Kit containing 9 colored caps is available (see Optional Accessories).

Troubleshooting

Issue	Indicator Status	Solution
No sound or faint sound	Receiver `ready` LED on	• Verify all sound system connections or adjust gain as needed (see Adjusting Gain) • Verify that the receiver is connected to mixer/amplifier
	Receiver `ready` LED off	• Turn on transmitter • Make sure the batteries are installed correctly • Perform transmitter setup (see Single System Setup) • Insert fresh batteries
	Receiver LED screen off	• Make sure AC adapter is securely plugged into electrical outlet. • Make sure receiver is powered on.
	Transmitter indicator LED flashing red	Replace transmitter batteries (see Changing Batteries).
Audio artifacts or dropouts	Ready LED flickering or off	• Change receiver and transmitter to a different group and/or channel. • Identify nearby sources of RF interference, and shutdown or remove source. • Replace transmitter batteries. • Ensure that receiver and transmitter are positioned within system parameters System must be set up within recommended range and receiver kept away from metallic surfaces. • Transmitter must be used in line of sight from receiver for optimal sound
Distortion	Audio LED on receiver indicates overload (red)	Reduce transmitter gain (see Adjusting Gain).
Sound level variations when switching to different sources	N/A	Adjust transmitter gain as necessary (see Adjusting Gain).
Receiver/transmitter won't turn off	LED/display flashing rapidly	See Locking and Unlocking Controls.

*System must be set up within recommended range and receiver kept away from metallic surfaces.

BLX

Working Range	91 m (300 ft) Line of Sight Note: Actual range depends on RF signal absorption, reflection and interference.
Audio Frequency Response	50 to 15,000 Hz Note: Dependent on microphone type
Total Harmonic Distortion Ref. ±33 kHz deviation with 1 kHz tone	0.5%, typical
Dynamic Range	100 dBA-weighted, typical
Operating Temperature	-18°C (0°F) to 57°C (135°F) Note: Battery characteristics may limit this range.
Polarity	Positive pressure on microphone diaphragm (or positive voltage applied to tip of WA302 phone plug) produces positive voltage on pin 2 (with respect to pin 3 of low-impedance output) and the tip of the high impedance 1/4-inch output.

BLX1

Audio Input Level		gain position
	max:	-16 dBV maximum
	min (0 dB):	+10 dBV maximum
Gain Adjustment Range		26 dB
Input Impedance		1 MΩ
RF Transmitter Output		10 mW, typical varies by region
Dimensions		110 mm x 64 mm x 21 mm (H x W x D)
Weight		75 g (2.6 oz.), without batteries
Housing		Molded ABS
Power Requirements		2 LR6 AA batteries, 1.5 V, alkaline
Battery Life		up to 14 hours (alkaline)

BLX2

Audio Input Level		gain position
	0dB:	-23 dBV maximum
	-10dB:	-10 dBV maximum
Gain Adjustment Range		10 dB
RF Transmitter Output		10 mW, typical varies by region
Dimensions		224 mm X 53 mm dia. (8 7/8 X 2 1/8 in.)
Weight		218 g (7.7 oz.) (without batteries)
Housing		Molded ABS
Power Requirements		2 LR6 AA batteries, 1.5 V, alkaline
Battery Life		up to 14 hours (alkaline)

BLX4 & BLX88

Output Impedance	XLR connector:	200 Ω
	6.35 mm (1/4") connector:	50 Ω
Audio Output Level Ref. ±33 kHz deviation with 1 kHz tone	XLR connector:	–27 dBV (into 100 kΩ load)
	6.35 mm (1/4") connector:	–13 dBV (into 100 kΩ load)
RF Sensitivity		-105 dBm for 12 dB SINAD, typical
Image Rejection		>50 dB, typical
Dimensions	BLX4:	188 mm X 103 mm X 40 mm (H x W x D)
	BLX88:	388 mm X 116 mm X 40 mm (H x W x D)
Weight	BLX4:	241 g (8.5 oz.)
	BLX88:	429 g (15.1 oz.)
Housing		Molded ABS
Power Requirements		12–15 V DC @ 160 mA (BLX88, 320 mA), supplied by external power supply (tip positive)

Certifications

BLX1, BLX2, BLX4, BLX88

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.

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

BLX4, BLX88

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

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

IC: 616A-BLX4A, 616A-BLX4B, 616A-BLX4C, 616A-BLX4D, 616A-BLX88A, 616A-BLX88B, 616A-BLX88C, 616A-BLX88D

BLX1, BLX2

Certified under FCC Part 74.

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

FCC ID: DD4BLX1A, DD4BLX1B, DD4BLX1C, DD4BLX1D; DD4BLX2A, DD4BLX2B, DD4BLX2C, DD4BLX2D. **IC:** 616A-BLX1A, 616A-BLX1B, 616A-BLX1C, 616A-BLX1D; 616A-BLX2A, 616A-BLX2B, 616A-BLX2C, 616A-BLX2D

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.

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

   Authorized European representative:
   Shure Europe GmbH
   Headquarters Europe, Middle East & Africa
   Department: EMEA Approval
   Jakob-Dieffenbacher-Str. 12
   75031 Eppingen, Germany
   Phone: 49-7262-92 49 0
   Fax: 49-7262-92 49 11 4
   Email: EMEAsupport@shure.de

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.

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.

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.

SHURE®