SHURE

LEGENDARY PERFORMANCE™

AXT210 Handheld Single Channel Transmitter

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 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.

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: No user-serviceable parts inside. Refer all servicing to qualified service personnel.

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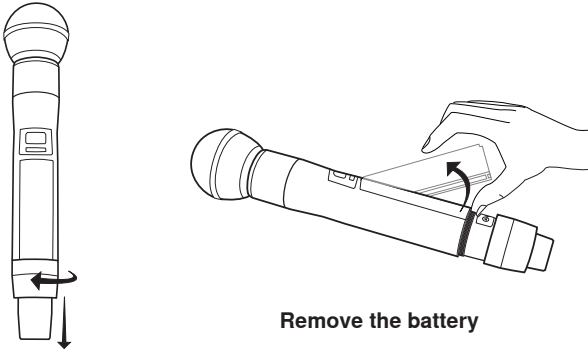
WARNING

• Battery packs may explode or release toxic materials. Risk of fire or burns. Do not open, crush, modify, disassemble, heat above 212°F (100°C), or incinerate

• Follow instructions from manufacturer

• Never put batteries in mouth. If swallowed, contact your physician or local poison control center

• Do not short circuit; may cause burns or catch fire

• Do not charge or use battery packs with other than specified Shure products

• Dispose of battery packs properly. Check with local vendor for proper disposal of used battery packs

Batteries

Axient transmitters are powered by a Shure lithium-ion rechargeable battery.

Caution: Turn off the transmitter before changing batteries.

Note: Refer to your battery charger manual for charging instructions.

Remove the battery

Unscrew the locking ring

Battery Runtime Chart

Battery runtime varies according to the transmitter's operating mode. Higher power settings will reduce battery runtime.

Remaining battery runtime is shown on the display in the form of a battery indicator icon and approximate time in hours and minutes.
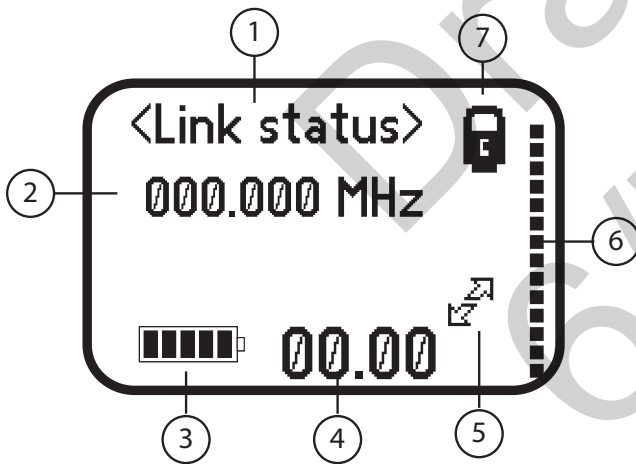
Battery Indicator	Approximate Time Remaining

Tips for achieving maximum runtime:

- Use fully charged batteries
- Use the lowest power setting if possible
- Turn off the transmitter when not in use

Main Menu Screen

The main menu screen displays the following transmitter parameters:

① **Link Status**
- **Linked** : Displays linked receiver ID
- **Unlinked** : Not linked to a receiver

② **Frequency**
Tuned frequency of the transmitter

③ **Battery Charge Indicator**
5-segment icon indicates battery life

④ **Remaining Battery Life**
Displays remaining battery life in hours and minutes

⑤ **Showlink Icon**
Indicates transmitter is within range of a ShowLink access point enabling remote control of parameters

⑥ **Audio Meter**
Indicates the audio signal level

⑦ **Control Lock Icon**
Displayed when buttons are locked

Locking the Buttons

Lock the buttons of the transmitter to prevent accidental or unauthorized parameter changes.

Press and hold the ▼ and ▲ buttons for 3 seconds. Repeat to unlock.

Power-on RF Mute

The transmitter can be powered on in RF mute mode to prevent transmission of the audio signal.

Press and hold the ▼ button during power until the **RF Muted** message is displayed.

AXT210 Axient Handheld Transmitter

The AXT210 delivers ultra-linear RF performance for more channels on air and superb audio quality. Its advanced rechargeable power management supports extended battery life and highly accurate status metering. ShowLink™ Remote Control enables comprehensive real-time remote control of all transmitter parameters, including real-time frequency adjustments.

Features

- Ultra-linear RF performance places more channels on-air in crowded RF environments

- IR Sync function automatically tunes transmitter to the receiver frequency

- Comprehensive real-time remote control of all transmitter parameters when a linked transmitter is within range of a ShowLink access point.

- Shure Li-ion rechargeable battery delivers up to 10 hours of runtime from a single charge

- Rugged, sleek industrial design that withstands the demands of extreme performances

- Advanced control menu to adjust frequency, audio and security settings from the transmitter

- Two audio stages (gain and sensitivity) are adjustable for optimal audio quality.

- Rapid charging brings batteries to 50% capacity (5 hours at 10 mW power) within 1 hour

- Lockable user interface prevents accidental or inadvertent changes to controls once settings are made

Transmitter Overview

① **Microphone Cartridge**
Interchangeable with a variety of Shure cartridges

② **LCD Display**
View menu screens and settings. Momentarily press power button to activate backlight.

③ **IR Sync Port**
Use for **IR sync** automatic frequency tuning

④ **Shure Rechargeable Li-ion Battery**

⑤ **Locking Ring**
Secures the battery and protects the control buttons

⑥ **Dual-Band Antenna**
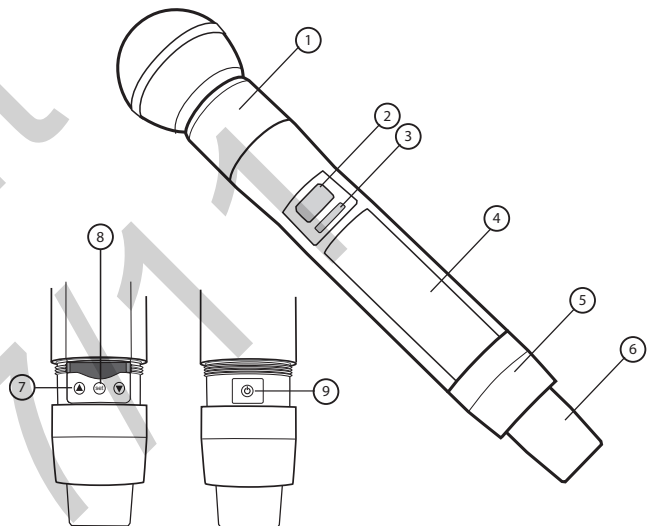For RF signal and 2.4 GHz ShowLink signal

⑦ **Arrow Buttons**
Use to scroll through menu screens and to change parameter values

⑧ **Set Button**
Enables parameter editing. After editing is complete, press to save changes and return to the main menu screen

⑨ **Power Button**
Hold for 3 seconds to turn the transmitter on or off. When editing parameters, acts as a "back" button to cancel changes and return to a previous parameter or to the main menu screen.

Included Components

Shure Microphone Cartridge: (SM58, SM86, BETA58A, BETA87A, BETA87C, KSM9/BK, KSM9/SL)
AXT920 or 920SL Handheld Rechargeable Battery (2)
Padded Case
Zipper Bag
WA371 Swivel adaptor Euro thread adapter for WA371

Optional Accessories

AXT920 or AXT920SL Handheld Rechargeable Battery
AXT904 Portable Battery Charger
AXT921 1-AA Battery Sled
WA371 Swivel adaptor Euro thread adapter for WA371
Shure Microphone Cartridges: (SM58, SM86, BETA58A, BETA87A, BETA87C, KSM9/BK, KSM9/SL)

Parameter Menus

To adjust transmitter settings, use the arrow buttons to access and edit the parameter menus.

Device ID

The device ID identifies the transmitter on a network in WWB software or when linked to a receiver.

- ID length can be up to 8 characters
- Use arrow buttons to scroll through characters
- Use **Set** button to save and move to next character

Frequency

Press the **set** button once to highlight the first 3 digits for editing, or twice to highlight all digits for editing. Use the arrow buttons to change each digit.

When finished, press the **set** button to save changes.

RF Mute

Disables the RF signal to mute the audio output.

TX On: Audio output on

TX Off: Audio output muted

Gain

Adjust the gain to set audio output level.

Gain range is -10 to +20 dB, in 1 dB steps.

RF PWR

From the main menu screen, press and hold the ▼ and **set** button to edit the RF power level.

Use lower power settings to conserve battery life and to prevent RF overload at the receiver.

Note: A password is required in some regions.

Firmware

Displays the firmware version installed in the transmitter

Unlink

The unlink command ends the linking relationship between a transmitter and a receiver.

YES: Ends the link between a transmitter and a receiver.

NO: Preserves the link between a transmitter and a receiver.

Note: When a transmitter is unlinked, the channel name will revert to **unlinked**.

Sens(sensitivity)

Adjust the sensitivity to compensate for input level variation.

Sensitivity settings are 0 or +12 dB

Group (G) and Channel (C)

A group is a set of pre-set frequencies. A single frequency within a group is a channel.

G: Change the group

C: Change the channel

PCB Serial Number

Use this menu to view the serial number of the printed circuit board (**PCB**) installed in the unit.

1. From the main menu screen, press and hold the ▼ and "set" buttons to enter the **RF Power** screen.
2. Press the ▲ button to access the serial number .
3. Momentarily press the power button to return to the home menu screen.

AA Type

Sets the AA battery type to ensure accurate runtime display when using the optional battery sled.

Alkaline

NiMH

Lithium

Showlink Test

Activates the ShowLink test 5-bar display to measure the control range of a ShowLink access point.
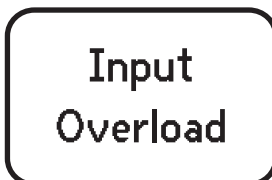
- 5 bars indicate the center of the coverage area
- 1 bar indicates the outer boundary of the coverage area
- If bars are not displayed, ShowLink control is not available
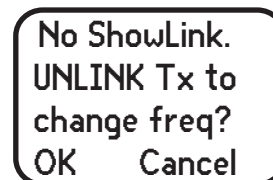
Troubleshooting

Input Overload

The **Input Overload** message indicates an excessive signal level at the transmitter input. To remove an overload, reduce the gain or sensitivity settings.

No ShowLink Alert

This alert is appears if you try to change the frequency when the transmitter is beyond the range of an active ShowLink access point. Choose **OK** to unlink the transmitter and complete the frequency change, or **Cancel** to return to the home screen.

```
Input
Overload
```

```
No ShowLink.
UNLINK Tx to
change freq?
OK    Cancel
```

Firmware Updates

Firmware is embedded software in each Axient component that controls functionality. Periodically, new versions of firmware are developed to incorporate additional features and enhancements. To take advantage of design improvements, new versions of the firmware can be uploaded and installed using the Firmware Update Manager tool available in WWB6 software. Firmware is available for download from .

Specifications- AXT210 Handheld Transmitter

Axient System

RF Carrier Frequency Range	470–952 MHz Note: varies by region
Working Range	**Under typical conditions:** 150 m (500 ft) **Line of Sight, outdoors for a single system:** 500 m (1600 ft) Note: Actual range depends on RF signal absorption, reflection and interference.
Audio Frequency Response	40 – 18 kHz (+1, -3 dB) Note: Dependent on microphone type
RF Tuning Step Size	25 kHz
Modulation 45 kHz max. deviation	FM, Audio Reference Companding with pre- and de-emphasis
Dynamic Range	>108 dB, A-weighted (referenced at 0 dB setting on bodypack)
Image Rejection	>90 dB, typical
RF Sensitivity	-110 dBm for 12 dB SINAD, typical
Spurious Rejection	>110 dB, typical
Ultimate Quieting	>110 dB, A-Weighted
Squelch Quieting	>115 dB, A-Weighted
Latency	<1 ms
Total Harmonic Distortion 45 kHz max. deviation	<0.3%, A-weighted, typical
System Audio 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.

AXT210

Sensitivity Settings	0, +12 dB
Gain Adjustment Range	-10 to +20 dB (in 1 dB steps)
Battery Type	Shure AXT920/920SL (Rechargeable Li-Ion)
Battery Life	up to 10 hours (low power mode)
Dimensions	261 mm x 37 mm (10.3 in. x 2.6 in.) L x Dia.
Weight	395 g (13.9 oz.), with batteries
Housing	Machined aluminum
Operating Temperature Range	-18°C (0°F) to 63°C (145°F) Note: Battery characteristics may limit this range.
Storage Temperature Range	-29°C (-20°F) to 74°C (165°F) Note: Battery characteristics may limit this range.

Audio Input

Configuration	Unbalanced
Impedance	>30 kΩ
Maximum Input Level 1 kHz at 1% THD	**Sensitivity Setting:** **0 dB:** 5.5 dBu **+12 dB:** −6.5 dBu

RF Output

Connector	SMA (UHF and Showlink); Shell=Ground, Center=Signal
Antenna Type	Integrated Dual Band Helical
Power	See Frequency Range and Ouput Power table
Impedance	50 Ω

Showlink

Network Type	IEEE 802.15.4
Frequency Range	2.40 to 2.4835 GHz (16 Channels)
RF Output Power	10 dBm (ERP)

Tables and Diagrams

Frequency Range and Transmitter Output Power

Band	Frequency Range (MHz)	Region	Power (mW)
G1	470 to 530	Americas	10/100
G7C	470 to 510	China	10/50
G1E	470 to 530	EMEA	10/50
G1HK	470 to 530	Hong Kong	10
H4	470 to 530	Americas	10/100
H4E	470 to 510	EMEA	10/50
H4HK	470 to 530	Hong Kong	10
J5	578 to 638	Americas	10/100
J5E	578 to 638	EMEA	10/50
J5HK	578 to 638	Hong Kong	10
K4E	606 to 666	EMEA	10/50
L3	638 to 698	Americas	10/100
L3E	638 to 698	EMEA/ China	10/50
L3HK	638 to 698	Hong Kong	10
M5	694 to 750	EMEA	10/50
Q5	740 to 814	EMEA	10/50
Q5HK	740 to 814	Hong Kong	10
Q6	740 to 752	Korea	10
Q10A	740 to 787	China	10/50
A24	779 to 806	Japan	10
JBX	806 to 810	Japan	10

Certifications

Meets essential requirements of European R&TTE Directive 99/5/EC, eligible to bear the CE mark:

WEEE Directive 2002/95/EC as amended by 2008/34/EC.

RoHS Directive 2002/95/EC as amended by 2008/35/EC.

Meets requirements of EMC standards EN 300 328, EN 300 422 Parts 1 and 2, and EN 301 489 Parts 1 and 9.

Certified under FCC Part 15 and FCC Part 74.

Certified in Canada by IC to RSS-123 and RSS-210.

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.

FCC ID: DD4AXT210. **IC:** 616A-AXT210.

This device complies with Industry Canada licence-exempt RSS standard(s). Operation 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.

This radio transmitter 616A-AXT610 has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.

Le présent émetteur radio 616A-AXT610 a été approuvé par Industrie Canada pour fonctionner avec les types d'antenne énumérés ci-dessous et ayant un gain admissible maximal et l'impédance requise pour chaque type d'antenne. Les types d'antenne non inclus dans cette liste, ou dont le gain est supérieur au gain maximal indiqué, sont strictement interdits pour l'exploitation de l'émetteur.

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

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Email: EMEAsupport@shure.de

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.

Licensing Information

Licensing: A ministerial licence to operate this equipment may be required in certain areas. Consult your national authority for possible requirements.

Changes or modification 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.

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