

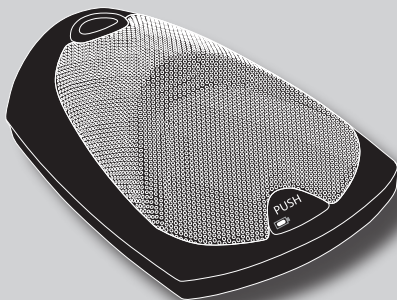
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**SHURE**<sup>®</sup>

Model MX690

***Wireless Boundary Microphone***

The Shure MX690 microphone offers cable-free installation for corporate boardrooms or other applications requiring flexible configurations. The MX690 operates within the 518–865 MHz bands and is compatible with Shure SLX wireless systems.



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27EN3240 (Rev. 1)

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## *Features*

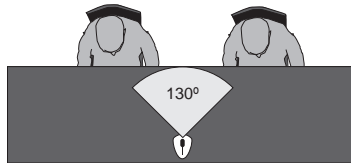
- Sleek, low profile design
- Frequency agile, microprocessor controlled transmitter
- IR link to SLX receiver for automatic frequency synchronization
- Programmable frequency Group/Channel display
- Programmable mute function
- Operates on two AA batteries
- Compatible with all Shure SLX Wireless systems
- Commshield™ technology for protection from RF interference

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## Microphone Placement

Place the MX690 within 1.5 m (5 ft.) of a talker. Aim the microphone toward the talkers and away from loudspeakers and noise sources. Use one microphone for every two talkers. Pickup angle with a cardioid cartridge is  $130^\circ$  at  $-3$  dB.

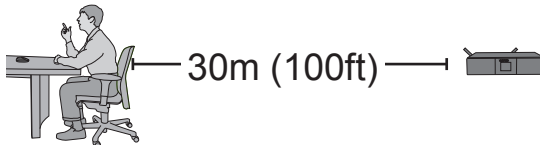
**Note:** *To minimize RF interference, maintain a distance of at least 0.3 m (1 ft.) between transmitters. In case of interference, increase the distance between transmitters or change channels.*



### Receiver

Make sure the receiver is within sight of the transmitter. Do not place receiver behind a metal barrier or any reflective surface.

*Refer to the SLX Wireless System User Guide for more information, or visit [www.shure.com](http://www.shure.com).*

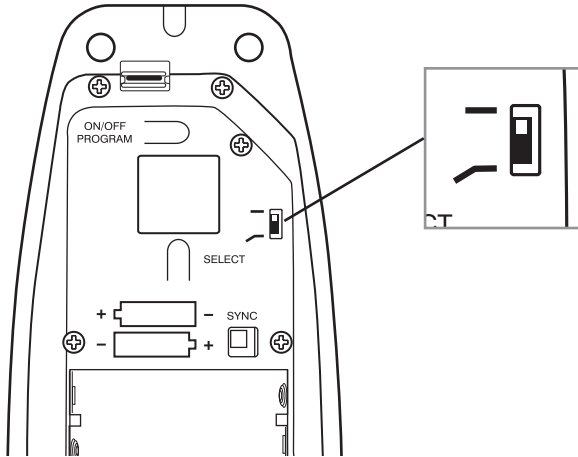


## Low-Cut Filter

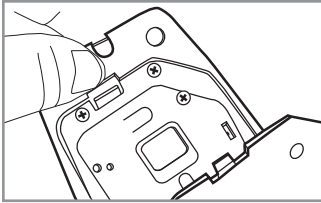
The low-cut filter attenuates frequencies below 150 Hz by 6 dB per octave.

— Filter disabled (as supplied)

⎵ Low-cut filter



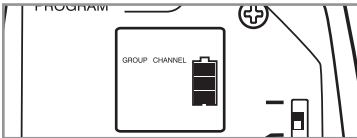
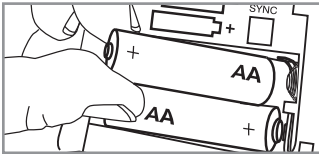
## Battery



### Installation

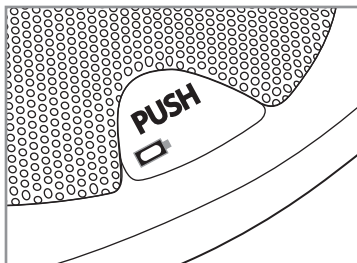
1. Open the battery compartment as shown.
2. Insert two 1.5V "AA" batteries. Make sure the +/- terminals are properly oriented.

**Note:** Alkaline batteries last up to 8 hours. Rechargeable, carbon-zinc and zinc-chloride batteries provide less operating time.



### Power Meter

The battery meter on the LCD shows remaining battery life.



### Low Power Indicator

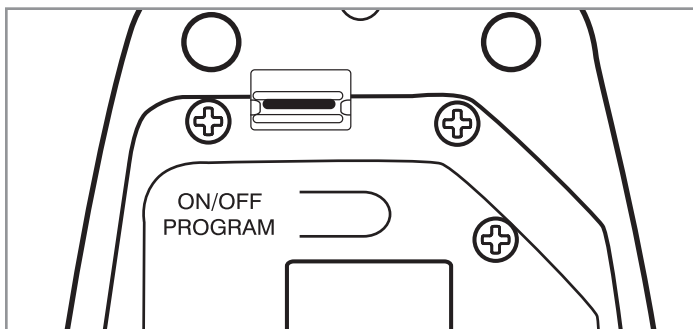
**Steady Red:** Power low. Replace batteries immediately

**Pulsing Red:** Batteries dead. Transmitter cannot be turned on until batteries are replaced.

## Power On/Off

1. Press and hold the **ON/OFF PROGRAM** button for approximately 2 seconds. The LCD illuminates.
2. To turn the transmitter off, press and hold the **ON/OFF PROGRAM** button again.

**Note:** Use the button on the bottom of the transmitter to power it on without opening the battery compartment.



## Mute Button

The mute button can be configured for toggle or momentary operation.

### ***Toggle (as supplied)***

The **PUSH** button toggles the microphone between active and muted states.

**NOTE:** *The microphone always powers up in the active state.*

### ***Momentary***

There are two types of momentary operation:

*Push-to-Mute:* The microphone is muted only while the button is pressed and held.

*Push-to-Talk:* The microphone is active only while the button is pressed and held.

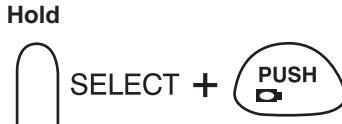
### ***To change between toggle and momentary:***

Hold the **PUSH** button and press the **SELECT** button.  
(Test the microphone to confirm the change.)



### ***To change between push-to-talk and push-to-mute:***

1. Set the button for momentary operation.
2. Hold the **SELECT** button and press the **PUSH** button.



## Mute Indicator

The bi-color LED on the top of the microphone indicates whether the microphone is active or muted.

The LED can also be set to flash when muted.

Display Mode	Status Indicator
Steady (as supplied)	Active = Green
	Muted = Red
Flashing	Active = Green
	Muted = Flashing Green

To toggle between off and flashing, press **PUSH** and **ON/OFF PROGRAM** simultaneously.

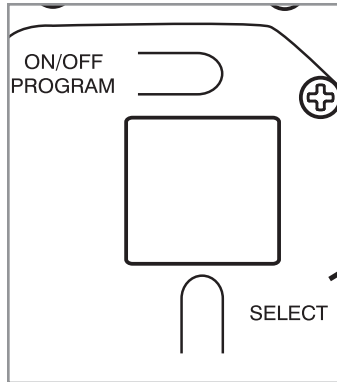




## Locking Settings

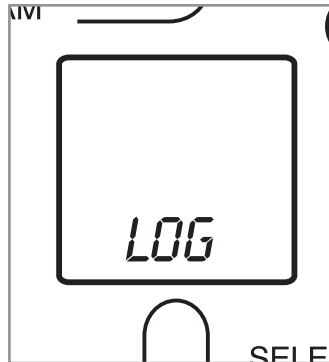
Press **ON/OFF PROGRAM** and **SELECT** simultaneously to lock or unlock transmitter settings. When locked, the current settings cannot be manually changed.

**Note:** *Locking the transmitter settings does not disable IR frequency synchronization or the High Pass/Low Cut filter.*



## LOGIC MODE

To use with a logic enabled receiver, you must perform an automatic sync. The LCD flashes "log" during sync. Once in logic mode, the LCD flashes "log" when powered up.



## ***Automatic Frequency Synchronization***

1. Power off all transmitters.
2. Power on all receivers.
3. Begin with the first transmitter. Open the battery cover and power it on.
4. Aim the IR sensor at the first receiver IR port. The transmitter should be no more than 15 cm (6 in.) from the receiver. Press and hold the receiver **SYNC** button to send group and channel data to the transmitter. The red LED on the transmitter will stop flashing when programming is complete.
5. Power off the first transmitter and repeat the synchronization with each additional transmitter and receiver pair.

## ***Manual Frequency Synchronization***

1. Press and hold the transmitter **SELECT** button until the desired group number appears.
2. Press **SELECT** again and release it when the desired channel number appears.

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### *Tips for Optimum Performance*

- Maintain a direct line of sight between the transmitter and receiver antennas.
- Avoid placing the transmitter on metal surfaces.
- Avoid placing laptop computers or other obstructions in front of the microphone during use.
- Only use with a Shure SLX4 wireless receiver.

### *Troubleshooting*

If you encounter difficulty with the SLX Wireless System:

- Make sure both the transmitter and the receiver are turned on.
- Replace the battery if the battery LED is red.
- Make sure the Group/Channel settings for each transmitter-receiver pair are identical.
- Make sure there is an unobstructed line of sight between the transmitter and receiver.
- If necessary, reposition the receiver or decrease the distance between transmitter and receiver.
- Remove local sources of RF interference, such as computers or lighting equipment.
- Remove metal objects within 0.3 m (1 ft.) of the transmitter

**Note:** *Refer to the SLX Wireless System User Guide for complete troubleshooting procedures.*

## ***Frequency Selection***

Shure offers wireless systems in a selection of bands that conform to the different government regulations of specific nations or geographic regions. These regulations help limit radio frequency (RF) interference among different wireless devices and prevent interference with local public communications channels, such as television and emergency broadcasts.

The system's band and frequency range are identified on the receiver and transmitter. For example, "H4 518-578 MHz."

For information on bands available in your area, consult your local dealer or phone Shure. More information is also available at Shure's website ([www.shure.com](http://www.shure.com)).

## ***Licensing***

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.

Changes or modifications not expressly approved by Shure Incorporated could void your authority to operate this equipment.

<b>Band</b>	<b>Range</b>	<b>Output</b>
H5	518–542 MHz	10 mW
J3	572–596 MHz	10 mW
L4	638–662 MHz	10 mW
P4	702–726 MHz	10 mW
R13	794–806 MHz	10 mW
R5	800–820 MHz	10 mW
S6	838–865 MHz	10 mW
JB	806–810 MHz	10 mW
Q4	740–752 MHz	10 mW

**Note:** *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 for wireless microphone products in your region.*

## *Master List Frequencies*

The Master List is an index of all frequencies in a band, including those not assigned to a Group or Channel. The Master List can only be accessed through the receiver, so the transmitter must be synchronized via the IR port. When a Master List frequency is in use, "MASTER LIST" appears on the display. Refer to the SLX Wireless System User Guide for more information.

**Note:** *Wireless devices such as cellular phones and two-way radios may interfere with wireless microphones. Keep these and other potential sources of interference away from the transmitters and receivers.*

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**Transmitter Specifications**

**Operating Range**

30 m (100 ft.)

**Note:** *Actual range depends on RF signal absorption, reflection, and interference*

**Frequency Stability**

±10 ppm

**Maximum Frequency Deviation**

45 kHz

**Oscillator Type**

Phase-locked loop (PLL) controlled synthesizer

**Power Requirements**

3V (2 AA alkaline or rechargeable batteries)

**Battery Life**

≥8 hours (alkaline)

**Power Consumption**

130 mA, ±15 mA

**Operating Temperature Range**

-18–57 °C (0–135 °F)

Note: Battery may limit this range

**Dimensions**

43 mmH x 87 mmW x 148 mmD (1 11/16 x 3 3/8 x 5 13/16 in.)

**Weight**

*Net:* 318 g (11.2 oz)

*Packaged:* 516 g (18.2 oz)

## ***Microphone Specifications***

### **Type**

Condenser (electret bias)

### **Frequency Response**

50–17000 Hz

### **Polar Pattern** (at 1 kHz)

Cardioid

### **Sensitivity** (at 1 kHz , open circuit voltage)

–33 dBV/Pa (22 mV)

1 Pascal=94 dB SPL

### **Dynamic Range** (1 k $\Omega$ load at 1 kHz)

96 dB

### **Common Mode Rejection** (10 Hz to 100 kHz)

45 dB minimum

### **Preamplifier Output Clipping Level** (1% THD)

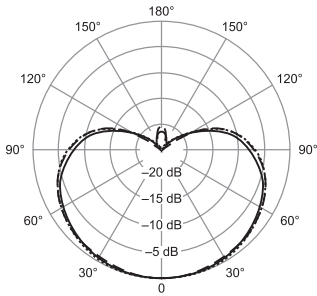
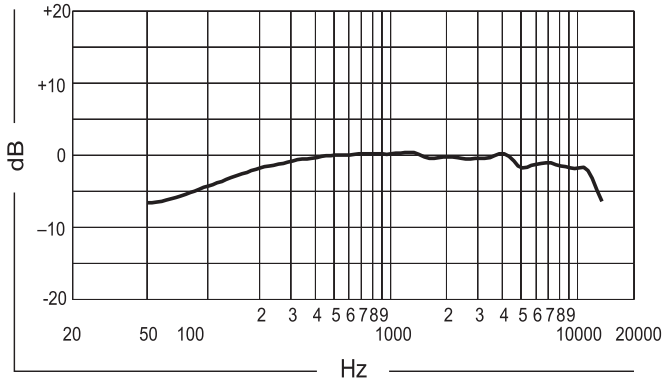
–6 dBV (0.5 V)

### **Polarity**

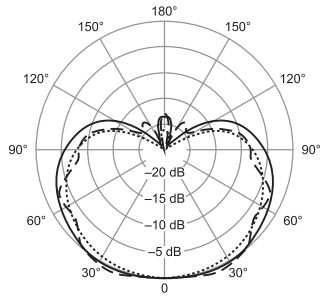
Positive sound pressure on diaphragm produces positive voltage on pin 2 relative to pin 3 of output XLR connector or tip of 1/4" phone plug.



# DRAFT



— 250 Hz  
..... 500 Hz  
- - - 1000 Hz



— 2500 Hz  
..... 6400 Hz  
- - - 10000 Hz

## ***Certification***

Certified to FCC Part 74 (FCC ID: DD4MX690).

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

(IC: 616A-MX690).

Meets essential requirements of the European R&TTE Directive 99/5/EC (ETSI EN 300-422 Parts 1 & 2, EN 301 489 Parts 1 & 9) and eligible to carry the CE marking.

Changes or modifications not expressly approved by Shure Incorporated could void your authority to operate this equipment.

**CE 0682** ⓘ

**DRAFT**  
**EU Declaration of Conformity**

**EU DECLARATION OF CONFORMITY**

We,  
of

Shure Incorporated  
5800 Touhy Avenue  
Niles, Illinois, 60714-4608 U.S.A.  
Phone: (847) 600-2000  
Web: [www.Shure.com](http://www.Shure.com)

Declare under our sole responsibility that the following product

Model: MX690                      Description: Wireless Microphone Transmitter

conforms to the essential requirements and other relevant provisions of the R&TTE Directive (1999/5/EC).

The product complies with the following product family, harmonized or national standards:

EN 301 489-1 V1.4.1 (2002-08)  
EN 301 489-9 V1.2.1 (2002-08)  
EN 300 422-1 V1.2.2 (2000-08)  
EN 300 422-2 V1.1.1 (2000-08)

The technical documentation is kept at:

Shure Incorporated, Corporate Quality Engineering Division  
SHURE Europe GmbH, EMEA Approval

Manufacturer: Shure Incorporated

Signed:                       Date: 20 December 2006  
Name and Title: Craig Kozokar, EMC Project Engineer, Corporate Quality Engineering Division

European Representative: SHURE Europe GmbH

Signed:                       Date: 20 December 2006  
Name and Title: Wolfgang Bilz, Dipl. Ing. (FH), EMEA Approval  
SHURE Europe GmbH  
Headquarters Europe, Middle East & Africa  
Wannenäcker Str. 28  
D-74078 Heilbronn, Germany  
Phone: +49 - (0)7131 - 7214 - 0  
Fax:    +49 - (0)7131 - 7214 - 14

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**SHURE<sup>®</sup>**

SHURE Incorporated <http://www.shure.com>

United States, Canada, Latin America, Caribbean:

5800 W. Touhy Avenue, Niles, IL 60714-4608, U.S.A.

Phone: 847-600-2000 U.S. Fax: 847-600-1212 Int'l Fax: 847-600-6446

Europe, Middle East, Africa:

Shure Europe GmbH, Phone: 49-7131-72140 Fax: 49-7131-721414

Asia, Pacific:

Shure Asia Limited, Phone: 852-2893-4290 Fax: 852-2893-4055