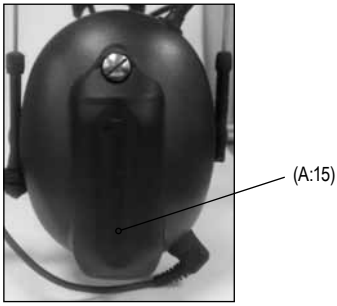
3M™ Peltor™ LiteCom

MT53H7A4600-NA
MT53H7B4600-NA
MT53H7P3E4600-NA

The Sound Solution

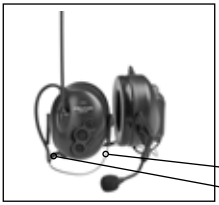
PELTOR™

(A) Headband MT53H7A4600-NA



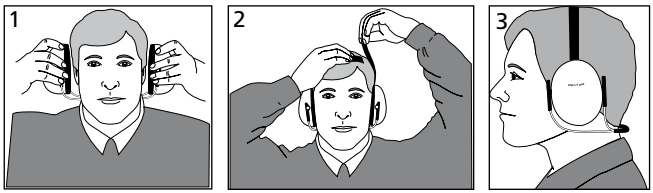
(B) Helmet attachment
MT53H7P3E4600-NA

(C) Neckband
MT53H7B4600-NA

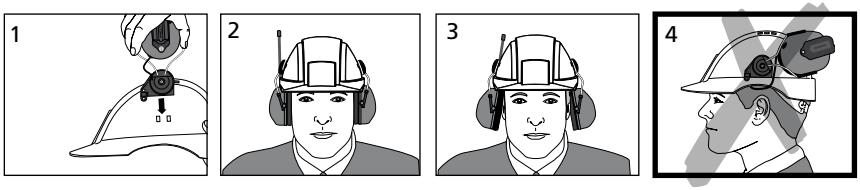


(D)

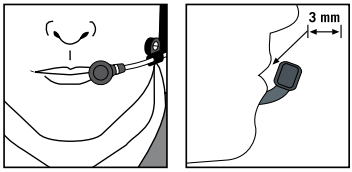
(E)



(F)



(G)



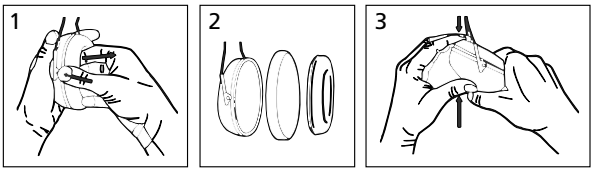
(H) Radio Channel Frequencies

Channel	Radio Serrice Type	Frequency (MHz)
1	BRS 1	464.5000
2	BRS 2	464.5500
3	BRS 3	467.7625
4	BRS 4	467.8125
5	BRS 5	467.8500
6	BRS 6	467.8750
7	BRS 7	467.9000
8	BRS 8	467.9250

(I) CTCSS (Continuous Tone Coded Squelch System)

1. 67.0	**8.** 88.5	**15.** 110.9	**22.** 141.3	**29.** 179.9	**36.** 233.6
2. 71.9	**9.** 91.5	**16.** 114.8	**23.** 146.2	**30.** 186.2	**37.** 241.8
3. 74.4	**10.** 94.8	**17.** 118.8	**24.** 151.4	**31.** 192.8	**38.** 250.3
4. 77.0	**11.** 97.4	**18.** 123.0	**25.** 156.7	**32.** 203.5	
5. 79.7	**12.** 100.0	**19.** 127.3	**26.** 162.2	**33.** 210.7	
6. 82.5	**13.** 103.5	**20.** 131.8	**27.** 167.9	**34.** 218.1	
7. 85.4	**14.** 107.2	**21.** 136.5	**28.** 173.8	**35.** 225.7	

(J)



(K) Attenuation

	Frequency [Hz]	125	250	500	1000	2000	3150	4000	6300	8000	NRR	CSA Class
MT7H7A4600-NA Head band	Mean Attenuation [dB]	17.8	23.0	32.1	36.2	35.1	39.0	38.7	38.3	36.5	25	A
	Standard Deviation [dB]	4.4	3.2	2.8	3.0	2.4	3.8	3.0	3.5	3.9		
MT7H7B4600-NA Neck band	Mean Attenuation [dB]	18.9	25.9	35.2	37.0	34.9	40.6	39.9	39.7	39.7	26	A
	Standard Deviation [dB]	5.2	3.2	3.3	2.9	2.5	3.6	3.0	2.3	2.5		
MT7H7P3E4600-NA Helmet attachment	Mean Attenuation [dB]	19.4	24.3	33.6	35.5	34.1	38.5	38.0	35.8	35.7	25	A
	Standard Deviation [dB]	3.4	3.3	3.8	1.7	2.6	3.6	3.1	5.4	5.4		

ANSI S3.19-1974

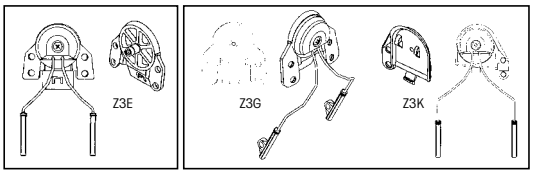
The NRR calculated from these laboratory-based attenuation data is 25 in the over the head and hard hat attached versions and 26 when worn behind the head.
The NRRs may overestimate the hearing protection provided during typical use due to variation in earmuff fit, earmuff fitting skill and motivation of the user. 3M recommends reducing the NRR by 50% for estimating the amount of noise reuction provided.
The level of noise entering a person's ear. when a hearing protector is worn as directed, is closely approximated by the difference between the A-weighted environmental noise level and the NRR.
Example:
1. The environmental noise level as measured at the ear is 92 dBA.
2. The NRR is 25 decibels (dB).
3. The level of noise entering the ear is approximately equal to 67 dBA.

⚠ Caution: For noise environments dominated by frequencies below 500 Hz, the C-weighted environmental noise level should be used.
Although hearing protectors can be recommended for protection against the harmful effects of impulsive noise, the noise reduction rating (NRR) is based on the attenuation of continuous noise and may not be an accurate indicator of the protection attainable against impulsive noise such as gunfire.
Improper fit of this device will reduce its effectiveness in attenuating noise. Consult the fitting instructions for proper fit.

(L) Weight

MT53H7A4600-NA	13.9 oz. (394 g)
M753H7B4600-NA	13.5 oz. (384 g)
MT53H7P3E4600-NA	14.7 oz. (418 g)

(M) Helmet attachments



Technical data

Frequency range:	464-467 MHz (BRS)
Operation mode:	Half duplex
Channels:	Max 8
Channel separation:	12.5 kHz
Modulation:	FM: 2.5 kHz
Microphone type:	Electret (MT53)
Receiver sensibility:	Typical-122 dBm
Output power:	150mW
Selective squelch:	CTCSS (38 sub channels)
Range:	Up to 3 km depending on conditions
Power supply:	2x AA alkaline (3,0 V) or NiMH (2,4 V)
Power consumption:	Stand-by: <59 mA
	Receiving: <70 mA
	Transmitting high power: <230 mA
	Transmitting low power: <160 mA
Operating time:	20 hours
Operating temperature:	-4F to +131F (-20ºC to +55ºC)
Storage temperature:	-40F to +131F (-40ºC to +55ºC)

3M™ Peltor™ LiteCom

Hearing protector with built-in two-way radio.
Read these instructions carefully before use and save them for future reference.

1. COMPONENTS

1.1 Headband (figure A)

(A:1) Headband
(A:2) Headband padding (PVC foil)
(A:3) Headband wire (stainless steel)
(A:4) Two-point fastener (POM)
(A:5) Ear cushion (PVC foil and PUR foam)
(A:6) Attenuation cushion (PUR foam)
(A:7) Cup
(A:8) Speech microphone (electret microphone)
(A:9) On/Off/Mode
(A:10) +
(A:11) –
(A:12) Antenna
(A:13) Speech microphone input (J22)
(A:14) PTT (Push To Talk button)
(A:15) Battery cover

1.2 Helmet attachment (figure B)

(B:1) Cup supporting arm (stainless steel)

1.3 Neckband (figure C)

(C:1) Neckband wire (stainless steel)
(C:2) Neckband cover (POX)

2. FITTING AND ADJUSTMENT

2.1 Over the head position (figure D)

(D:1) Slide out the earcups and tilt the upper part of the cups outward so that the wires are positioned away from the headband.
(D:2) Position the earcups over your ears so that the cushions fully enclose the ears and seal tightly against the head. Adjust the height of each earcup while holding the headband down until you have a tight and comfortable fit that exerts even pressure around the ears.
(D:3) The headband should sit straight on the head.

2.2 Behind the head position (figure E)

For independent use with or without hard hats or caps.
(E:1) Slide out the earcups and tilt the upper part of the cups outward so that the wires are positioned away from the headband.
(E:2) Position the earcups over your ears so that the cushions fully enclose the ears and seal tightly against the head.
(E:3) Adjust the height of each earcup until you have a tight and comfortable fit that exerts even pressure around the ears.

2.3 Helmet attachment (figure F)

(F:1) Insert the helmet slot adapters into the slots on each side of the helmet until they snap into place.
When in use, the attachment arms must be pushed inward until you hear a click on both sides, indicating a shift from ”stand-by” to ”usage” position. Position the earcups over your ears so that the cushions fully enclose the ears and seal tightly against the head. Adjust the position of each earcup while holding the helmet in place until you have a tight and comfortable fit that exerts even pressure around the ears. Make sure the cups and attachment arms are not in contact with the inner lining or the edge of the hard hat when in the ”usage” position, otherwise this may lead to leakage.
(F:2) Note that the cups can be placed in usage position and stand-by position (F:3)
Note: In Canada, users of hard hats combined with earmuffs must refer to CSA Standard Z94.1 on industrial protective headwear.

3. USAGE/FUNCTIONS

3.1 Inserting batteries

- Improperly installed batteries can damage the headset.
- Remove the batteries when storing the headset for extended periods of time.
- Replace batteries when interference increases or the sound level becomes weak.
- Do not replace batteries with the unit switched on.
- Low battery level is indicated by a voice message, ”low battery”, repeated every 5 minutes. If not replaced, a ”battery empty” message will sound and the unit will switch off automatically.
- Check the functioning of the unit after installing or replacing batteries.
- Open the battery cover (A:15) by turning the locking screw counterclockwise.
- Install 2 1.5 V AA batteries. Position the + and - poles as shown on the battery cover.
- Replace cover and secure by turning the locking screw clockwise.

Warning! Dry cell batteries can explode if recharged. Do not attempt to charge the included alkaline batteries as this may damage the headset.

3.2 Switching the headset on and off

Press and hold the On/Off/Mode button (A:9) for two seconds to switch the headset on or off. A voice message will confirm that the unit has been switched on or off. The last setting is always saved when the headset is switched off.
Note! Power is switched off automatically if the product has been inactive for two hours. Automatic power-off is indicated by a voice message: “automatic power off” followed by a series of short tones for 10 seconds, then the unit is switched off.

3.3 Scrolling through the menu

Press the On/Off/Mode button (A:9) briefly to browse through the menu. A voice message confirms each step.

3.4 Radio volume (sound level for communication radio)

Press the + button (A:10) or – button (A:11) to adjust the volume to one of five levels. Each change is confirmed by a voice message. To turn the volume off, press the – button (A:11) for two seconds. This is confirmed by the message “radio volume off”. Press the + button (A:10) to switch this function back on.
Note! No radio communication can be heard when the volume is switched off.
Note! When the volume is switched off the other menus will not be available.

3.5 Channel (radio frequency)

Press the + button (A:10) or – button (A:11) to select between eight available channels. Each change is confirmed by a voice message. See table H Radio channel frequencies.

3.6 VOX (voice-operated transmission)

VOX enables LiteCom to transmit automatically when sound above a certain level reaches the microphone. This allows radio transmission without pressing the PTT button (A:14).
Press the + button (A:10) or – button (A:11) to adjust the sensitivity of voice operated transmission. Each change is confirmed by a voice message. You can choose between five levels or switch this function off. When the level is low it is easier to transmit. To switch this function off, press the – button (A:11) for two seconds. This is confirmed by the message “VOX off”. The PTT button (A:14) must now be used to transmit. Press the + button (A:10) to switch this function back on. Alternatively switch voice-operated transmission on or off by briefly press the PTT button twice. A voice message confirms the current VOX setting.
The radio has a Busy Channel Lock Out (BCLO) function that prevents VOX operation if the channel is being used for other transmission. An audible tone indicates that the channel is already being used. Note! To activate the VOX function the speech microphone (A:8) must be very close to your mouth, 1–3 mm (figure G). The user’s voice will be heard in the headset when the radio is transmitting.

3.7 Squelch (hiss reduction)

“Squelch” means that background hiss in the earphones is prevented when the incoming signal is below the set squelch level. Press the + button (A:10) or – button (A:11) to adjust the squelch level. Each change is confirmed by a voice message. You can choose between five levels or switch this function off. A low squelch level may permit longer range. To switch this function off, press the – button (A:11) for two seconds. This is confirmed by the message “squelch off”. Press the + button (A:10) to switch this function back on.

3.8 Sub channel (selective squelch)

Sub channel allows multiple groups of users to use the same channel without hearing other groups. When sub channel is active, an inaudible code will be transmitted with speech, and this code is used to ”open” the receiver of other users of the group. This

allows multiple groups of users to use the same channel without hearing other groups. This product supports Continuous Tone Coded Squelch System (CTCSS), which means there are 38 codes which have been assigned the numbers 1–38 (table I, CTCSS). All communication on a channel can be heard if this function is switched off.
Note! When the sub channel function is switched on, all other incoming radio communication will be blocked. Press the + button (A:10) or – button (A:11) to select the sub channel. Each change is confirmed by a voice message. You can choose between 38 tones or switch this function off. To switch this function off press the – (A:11) button when sub channel 1 is selected, or press the + (A:10) button when channel 38 is selected. This is confirmed by the message "sub channel off". Press the + button (A:10) to switch this function back on.

3.9 PTT (Push-to-talk)
Press and hold the PTT button (A:14) to transmit manually using the radio. PTT transmission works at any time, regardless of BCLO (Busy Channel Lock Out, see 3.6 VOX).

3.10 Reset to factory defaults
To restore the default settings the unit must first be switched off. Then press and hold the + (A:10) and – (A:11) buttons at the same time while also pressing the (A:9) On/Off/Mode button. This is confirmed by the voice message "restore factory defaults".

4. IMPORTANT USER INFORMATION

Caution! The noise reduction may be lower when eyeglasses, goggles or respirator straps are worn between the sealing surface of the earmuff cushions and the sides of the wearer's head. For best noise reduction, select eyeglasses or goggles that have thin, flat temples or straps which will minimize interference with the seal of the earmuff cushions. Pull long hair back to the extent possible and remove other items that may degrade the earmuff seal such as pencils, hats, jewelry or earbuds. Do not bend and reshape the headband as this will cause a loose fit and allow sound leakage.

Warning! These hearing protectors help reduce exposure to hazardous noise and other loud sounds. Misuse or failure to wear hearing protectors at all times when exposed to hazardous noise may result in hearing loss or injury. This product contains metallic components that may increase electrical hazards. For proper use, see supervisor, Fitting Instructions, or call 3M Technical Service (In U.S.A. call 1-800-243-4630. In Canada, call 1-800-267-4414)

5. MAINTENANCE (figure J)

5.1. Removing/replacing ear cushions
(5.1) Slide your fingers under the edge of the ear cushion and pull straight out.
(5.2) Insert a new ear cushion by pressing until it snaps into place.

5.2 Care and Cleaning Instructions
- Follow recommended care and cleaning instructions in order to maintain best noise reduction and function.
- Wash outside of earmuffs only. Use mild soap and water. Do not immerse in water. Remove cushions or liners which have become damp and allow them to dry before reinstalling.
- Do not clean with solvents such as alcohol or acetone, or with waterless hand cleaners or products containing lanolin.
- Do not store the earmuff in temperatures above 130 F (+55 C), for example behind a windshield or window.
- Inspect earmuffs regularly for cracked or worn parts, especially the cushions. Replace as needed. For replacement foam liners and ear cushions, order Hygiene Kit HY79. 3M recommends replacing foam liners and cushions at least twice a year in order to maintain acceptable noise reduction, hygiene and comfort.

6. FCC and IC Regulations and warnings

6.1. FCC Warning
This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation. Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. Before any station transmits on any channel authorized in the GMRS from an point (a geographical location) within or over the territorial limits of any area where radio servicesare regulated by the FCC, the responsible party must obtain a license (a written authorization from the FCC for a GMRS system .

6.2.FCC Radiation Exposure Statement
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. Do not transmit for more than 50% of the total transceiver use time; transmitting over 50% of the total

use time may exceed the limits in accordance to the FCC RF exposure requirements. Nominal transceiver operation is 5% transmission time, 5% reception time and 90% stand-by time.

6.3. IC Warning

This device complies with Industry Canada license-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.
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.

7. CAUTION

When set to full gain the earphones can produce an equivalent sound level of up to 87dB(A). This is considered safe for daily 8-hours use, as long as the time spent in receiving mode does not exceed 2.5 hours. If the time spent listening to the earphones exceeds 2.5 hours per day the gain setting must be reduced below maximum. One step below maximum gain produces an equivalent sound level of 82 dB(A), considered safe even if used in the listen mode, in noise, for a full 8-hours day.
If after wearing this device, tinnitus (ringing or buzzing in the ears) is heard, or your hearing seems muffled or dulled, or for any other reason you suspect a hearing problem, the volume levels should be reduced and the fit, condition, and adequacy of this device should be checked for the noise in which it is being worn. If the condition persists see an audiologist or physician for a professional review.

8. SPARE PARTS/ACCESSORIES

3M™ Peltor™ HY79 Hygiene kit

Replaceable hygiene kit consisting of two attenuation cushions, two foam rings and two snap-in ear cushions. Replace at least twice a year to ensure constant attenuation, hygiene and comfort.

3M™ Peltor™ HY100A Single-use protectors

A single-use protector that is easy to fit to the ear cushions. Pack of 100 pairs.

3M™ Peltor™ HYM1000 Microphone protector

Moisture-resistant and wind-resistant hygienic tape that protects the speech microphone and extends its life at the same time. Pack of 16 feet (5 meters) is sufficient for around 50 replacements.

3M™ Peltor™ M995 Wind shield for electret microphone

Effective protection from wind noise for electret microphone that also protects it and extends its life. One protector per pack.

3M™ Peltor™ACK053 Rechargeable battery

NiMH rechargeable battery that can replace two AA type 1.5 V standard batteries.

3M™ Peltor™ FR08 Power supply

Power supply for FR09/ACK053.

3M™ Peltor™ FR09 Battery charger

Charger for ACK053

3M™ Peltor™ 1180 SV Battery cover

3M™ Peltor™ MT53N-12 Electret microphone

Supplied as standard with product.

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