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3M™ PELTOR™ WS™ ALERT™ XPV Solar Powered Headset

Technical Data Sheet

Description

Bluetooth® MultiPoint headset with noise-cancelling microphone is self-charging by photo-voltaic power and connects to a mobile app to more easily set-up and adjust the headset. The headset helps to protect the user against hazardous noise, but also makes it easy to make phone calls with both hands free in noisy environments.

Key Features

- Multifunction Button (Choose between pre-defined functions)
- Music and Pod Mode
- Support Qualcomm® aptX™ HD
- WAP (Work Audio Profiles)
- Bluetooth® MultiPoint technology for connection to one or two external Bluetooth devices for hands-free talk and streaming
- Noise-cancelling boom microphone for clear speech transmission in noisy environments
- Level-dependent function for ambient listening to help promote auditory situational awareness
- Self-charging consisting of a seamlessly integrated solar cell material that converts all forms of light, both indoors and outdoors into sustainable electrical energy
- Connection to an iOS and Android compatible mobile app to more easily set-up, adjust settings, and view power status of the headset. The 3M™ Connected Equipment mobile app is available to download from App Store and Google Play
- Over the Air (OTA) firmware update
- Push-to-Listen feature to listen to your surroundings easily and instantaneously
- Voice-guided menu system
- Auto power off: The headset will turn off after 4 hours of non-use to save battery
- Low-battery warning at low battery level
- Replaceable cushions (hygiene kit)

MRX21A1WS7

Applications

The 3M™ PELTOR™ WS™ ALERT™ XPV Headset offers Bluetooth® wireless communication useful in noisy environments. This is essential when users need to be connected to their mobile phone throughout the day (e.g., handymen in construction industries, private contractors operating their own equipment, farmers, maintenance workers in industrial applications, etc.) and everywhere hands-free communication and hearing protection could be of benefit.

Standards and Approvals

3M Svenska AB hereby declares that this 3M™ PELTOR™ Headset is in compliance with the essential requirements and other provisions set out in the ACMA (Australian Communications and Medial Authority) regulations. The product has been tested by an accredited laboratory in accordance with the requirements in AS/NZS 1270 and has met the specifications of hearing protector Class 5. When selected, used and maintained as specified in AS/NZS 1269, this hearing protector may be used in noise up to 110 dB(A) assuming an 85 dB(A) criterion. A lower criterion may require a higher protector class.

Quick Reference

Attenuation Data	MRX21A1WS7 Headband
SLC80	27dB
Class	5
Tested to	AS/NZS1270:2002
Physical Properties	
Clamp Force	10 N
Weight (Batteries Included)	407g
Material Listing	
Cup	ABS
Shells	ABS, TPE
Headband	Wire Stainless Steel Wire
Helmet Attachment Arm	N/A
Two-Point Fastener	POM
Cushion	PVC foil and PUR foam
Insert (Liner)	PUR foam
Wind Shield (Mics)	PUR foam
Speech Microphone	PUR, TPE, PA
Microphone for Ambient Listening	PET Foam
USB Charger jack	TPE, ABS
Specifications	
Battery Type	Lithium-Ion
Operating Time	The headsets battery life will last for approximately 110 hours when using the ambient/ environmental or about 78 hours when using Bluetooth® streaming and ambient/ environmental listening. However, the exact battery life operation times may vary depending on the environment, temperature, outside conditions, and the battery age/ condition. **NOTE: Depending on the environment, temperature, and battery age/ condition, the operation time may vary.**
Bluetooth® technology	Bluetooth version: 5.2 Bluetooth headset profile (HSP): 1.2 Bluetooth hands-free profile (HFP): 1.8 Bluetooth Advanced Auto Distribution Profile (A2DP): 1.3.2 Audio/Video Remote Control Profile (AVRCP): 1.6.2 Bluetooth range: Up to 10 m (+4 dBm)
Microphone/ Type	3M™ PELTOR™ Electret Boom Microphone MT53N-14/1
3M™ Versaflo™ M-300 Head top - Compatible Microphone	N/A
Speakers	27 mm diameter, 100 Ohm
Operating temperature	-20°C (-4°F) to 50°C (122°F) (battery dependent)
Storage temperature	–20°C (–4°F) to 40°C (104°F) <90% humidity
Speakers	27 mm diameter, 100 Ohm
Microphone/ Type	3M™ PELTOR™ Electret Boom Microphone MT53N-14/1
3M™ Versaflo™ M-300 Head Top - Compatible Microphone	3M™ PELTOR™ Boom Microphone MT53V/1
Operating temperature	-20°C (-4°F) to 50°C (122°F) (battery dependent)
Storage temperature	–20°C (–4°F) to 40°C (104°F) <90% humidity
Product lifetime	Up to 5 years (excl. batteries)
Other	
Colour	Green
Hygiene Kit	HY82
Compatible with 3M™ E-A-Rfit™ Validation System	No
Helmet Attachment Backplate	N/A

Use limitation: Never modify or alter this product.

Fitting Instructions

Inspect the hearing protector before each use. If damaged, select an undamaged hearing protector or avoid the noisy environment.

When additional personal protective equipment is necessary (e.g. safety glasses, respirators, etc.), select flexible, low profile temples or straps to minimize interference with the earmuff cushion. Remove all other unnecessary articles (e.g. hair, hats, jewelry, headphones, hygiene covers, etc.) that could interfere with the seal of the earmuff cushion and reduce the protection of the earmuff.

Headband Headset

To fit the hearing protector:

1. Slide out the cups and tilt the top of the cup out, as the cable must be on the outside of the headband (Fig 1).
2. Pull the cups apart and place the earmuffs over the ears so that the cushions form a snug seal around the ears.
3. Adjust the height of the cups by sliding them up or down while holding the headband in place (Fig 2).
4. The headband should be positioned across the top of your head as shown and should support the weight of the headset. (Fig 3).

Fit Check

When hearing protectors are correctly worn, your voice should sound hollow and sounds around you should not sound as loud as before.

Hearing Protector Fit Testing the 3M™ E-A-Rfit™ Dual-Ear Validation System

The success of your hearing conservation program requires more than offering earplugs or earmuffs. Each worker needs to wear the most effective hearing protector for the environment and the correct fit for their unique anatomy.

With 3M™ E-A-Rfit™ Dual-Ear Validation System, you can quickly identify how much protection each worker receives from their 3M hearing protectors.

The Technology Behind 3M™ E-A-Rfit™

The 3M™ E-A-Rfit™ Dual-Ear Validation System is based on Field Microphone-In-Real Ear (F-MIRE) technology that measures the effectiveness of hearing protectors from inside a worker's ears, providing accurate, quantitative results.

The tester wears a pair of modified 3M™ probed hearing protectors connected to a dual-element microphone. A loudspeaker is placed in front of the tester. When it emits a broadband noise, the dual-element microphone measures the signal in the ear canal and outside the ear plug. In less than five seconds, the difference between the two measurements is calculated and a Personal Attenuation Rating (PAR) is displayed.

It Starts with PAR

The 3M™ E-A-Rfit™ Validation System puts the worker in the context of their noise environment and helps you understand their level of attenuation.

The results you get from the 3M™ E-A-Rfit™ is displayed as a PAR. The PAR is a numerical value that shows the reduction in sound level within the ear when a hearing protector is worn. The resulting PAR, combined with the worker's exposure to noise, is used to determine if a worker is receiving appropriate protection from the noise hazard.

Knowing the PAR lets you identify workers who are inadequately protected, so you can provide real-time intervention and training.

Key Benefits of the 3M™ E-A-Rfit™ Dual-Ear Validation System include:

- Tests both ears simultaneously in less than 5 seconds
- Science-based, quantitative testing
- Fast, clear, and accurate results
- Tests 7 frequencies 125Hz to 8000Hz
- 3M™ Earplug, earmuff and headset (comms) testing capability

Contact your 3M Personal Safety Specialist to find out more about our 3M™ E-A-Rfit™ Dual-Ear Validation System or for assistance in solving your complex or day-to-day hearing conservation challenges

Attenuation Data

3M™ PELTOR™ WS™ ALERT™ XPV Headband Headset - MRX21A1WS7 **AS/NZS 1270:2002**

Test Frequency (HZ)	125	250	500	1000	2000	4000	8000	SLC_{80}	Class	Clamp Force
Mean Attenuation (dB)	15.7	19.0	24.9	32.3	34.0	35.6	32.2	27dB	5	10 N
Standard Deviation (SD) (dB)	4.5	3.1	3.9	4.3	4.0	4.9	6.1			
Means minus SD (dB)	11.2	15.9	21.0	28.0	30.0	30.7	26.1			

Hearing protector Class 5 tested to AS/NZS1270. When selected, used and maintained as specified in AS/NZS1269, this protector may be used in noise up to 110dB(A) assuming an 85dB(A) criterion. A lower criterion may require a higher protection class.

Mean = Mean attenuation value derived from testing in accordance with AS/NZS 1270:2002.
SD = Standard Deviation derived from testing in accordance with AS/NZS 1270:2002.
Mean-SD = Mean attenuation value minus Standard Deviation
SLC_{80} = Single number rating commonly used in Australia and New Zealand to compare acoustic performance of hearing protectors. The subscript '80' indicates that in well managed hearing protector programs, the protection provided is expected to equal or exceed the SLC80 in 80% of protector-wearer noise spectrum combinations.
Class = A simplified process for selecting hearing protectors based on the wearers 8-hour equivalent continuous A-weighted sound pressure level.

3M strongly recommends personal fit testing of hearing protectors. Research suggests that users may receive less noise reduction than indicated by the attenuation label value(s) on the packaging due to variation in fit, fitting skill, and motivation of the user. Refer to applicable regulations and guidance on how to adjust attenuation label value(s). In the absence of applicable regulations, it is recommended that the attenuation label value(s) be reduced to better estimate typical protection.

The effectiveness of a hearing protector reduces dramatically when the hearing protector does not fit properly, is incorrectly inserted or is not worn 100% of the time during ALL hazardous noise events. Removal of the hearing protector, even for brief moments, substantially reduces protection and greatly increases the risk of hearing damage.

Cleaning and Maintenance

Follow recommended care and cleaning instructions in order to maintain best noise reduction and function.

Cleaning

- Carry out a visual battery condition check. Replace if battery leakage or defects are detected.
- Use a cloth wetted with soap and warm water to clean the outer shells, headband including the solar cell surface and ear cushions.

NOTE: Do NOT immerse the hearing protector in water.

If the hearing protector gets wet from rain or sweat, turn the earmuffs outwards, remove the ear cushions and foam liners, and allow to dry before reassembly. The ear cushions and foam liners may deteriorate with use and should be examined at regular intervals for cracking or other damage.

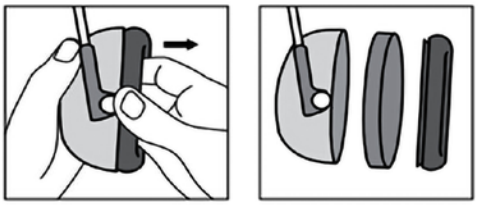
When used regularly, 3M recommends replacing the foam liners and ear cushions at least twice a year to maintain consistent attenuation, hygiene, and comfort.

In hot and humid environments more frequent changes may be required to maintain acceptable hygiene. If an ear cushion is damaged, it should be replaced.

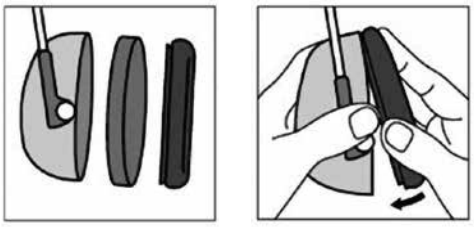
Maintenance - Removing and Replacing the Ear Cushions (Hygiene Kit)

Cushions and inserts can be replaced by using the approved Hygiene Kits for your 3M™ PELTOR™ Product. See 'Ordering Information' section.

1. To remove the ear cushion, slide your fingers under the inside edge of the ear cushion and firmly pull straight out.



2. Replace the worn or damaged cushions and insert with the new pair from the approved hygiene kit. Fit one side of the ear cushion into the groove of the earcup and then press on the opposite side until ear cushion snaps in place.



- 3M™ PELTOR™ HY100A Clean Hygiene Pads can be applied onto the earmuff cushions to help absorb sweat and moisture for improved comfort and hygiene.

Storage

- Store the product in a clean and dry area before and after use.
- Remove battery before storing the product for extended periods
- Always store the product in the original packaging and away from any sources of direct heat or sunlight, dust and damaging chemicals.
- Storage temperature range:–20°C (–4°F) to 40°C (104°F).
- Relative humidity: <90%.
- Make sure that no force is applied to the headband and that the cushions are not compressed.

Disposal

If the product is to be disposed*, it should be disassembled and disposed of as solid waste. Please see local authority regulations for disposal advice and locations

*Discard the product within 5 years from date of manufacture or immediately if damaged or cannot be cleaned.

Australia: Customers must refer to their Local Council Municipal area for disposal of electronics at their end of life.

New Zealand: Customers must dispose of electronics at their end of life in their local e-waste disposal bins.

Ordering Information

3M Code	Model #	Description
Headsets		
UU012025084	MRX21A1WS7	3M™ PELTOR™ WS™ ALERT™ XPV Headset with Powerfoyle™ Solar Cell Technology, Multipoint, headband
Accessories - Microphone		
UU011614862	MT53N-14/1	3M™ PELTOR™ Electret Boom Microphone, 240mm with plug incl windshield M995/2
XH001679154	M995/2	3M™ PELTOR™ M995 Wind Shield for Speech Microphone
AT010580697	HYM1000	3M™ PELTOR™ HYM1000 Microphone Protection
Accessories - Battery		
	ACK012/1	3M™ PELTOR™ Lithium Ion battery pack
	FR16/1	3M™ PELTOR™ CHarging cable USB A to USB C
Accessories - Hygiene		
UU008567388	HY82	3M™ PELTOR™ HY82 Hygiene Kit (cushion and foam liner)
XH001651351	HY100A	3M™ PELTOR™ HY100A Clean Hygiene Pad

In the box

- 1 x Headset
- 1 x Lithium Ion Battery
- 1 x Charging Cable
- 1 x User Instructions

Warning

These hearing protectors help reduce exposure to hazardous noise and other loud sounds. Misuse or failure to wear hearing protectors at all times that you are exposed to noise may result in hearing loss or injury. For proper use, see supervisor, User Instructions, or call 3M TechAssist Helpline 1800 024 464.

Always ensure the hearing protection device (HPD) is:

- Suitable for the application;
- Fitted correctly;
- Worn during all periods of exposure;
- Replaced when necessary.

Important Notice

To the extent permitted by law, 3M shall not be liable for any loss or damage including any loss of business, loss of profits, or for any indirect, special, incidental or consequential loss or damage arising from reliance upon any information herein provided by 3M. Nothing in this statement will be deemed to exclude or restrict 3M's liability for death or personal injury arising from its negligence.

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