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Mine Net Active Tag Manual

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AMR's Active Mine Net Active RF Tag is a self contained communication system. It transmits a coded packet containing a unique identification number, battery life, temperature, status, reference, and a message code. The Tag transmits this packet at the highest possible output every 1.3 sec +/- 0.3 sec, as it progressively changes rate to avoid successive collisions with other tags. Many important features were integrated into this small but rugged device.

Construction. The shell is ABS plastic, allowing the button to function while providing a tough and easily cleaned exterior. Epoxy encapsulate is used to increase the durability, make the device waterproof, semi-crush proof, tamper resistant, and to increase environmental isolation as far as Intrinsically Safe criteria are concerned.

Mounting. The Tag can be mounted on the helmet in either front or rear quarters, belt, harness, and or other secure location as determined by the Mine's Safety Director. The tags can be strapped, glued, or otherwise affixed. Tags come with a pre-programmed unique number.

Tag Record. Upon Tag-Miner assignment, MineNet software allows personnel to be easily configured with their number to create a personnel record. The personnel record contains all the information on the Tag as well as pertinent personal information regarding the user including photo, physical parameters, and special needs. This record will be displayed as it is tracked through the mine.

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Integrated Messaging. The AMR Active RF Tag has integrated Coded Messaging Capability. Operators can wake up the Messaging feature and then send one of eight message codes along with the normal identification packet. Messages simply by pressing on the tactile button on the Tag face. Message Codes will be transmitted as part of the packet for around 2.5 minutes, then reset itself back to Message 0 (Default) EXCEPT the Emergency Message 3 *, see note below. The Tag provides piezo based beeping for feedback as well as a tactile button in the case that the environment is too noisy to hear the audio feedback.

Press two short times (● ●) to 'wake it up', the tag will respond with 2 beeps, then enter your desired code by the chart below. This is done to avoid the messaging function being used inadvertently by accidentally bumping the button or dropping your helmet. The Tag will verify your entry by beeping back your code. To cancel any message, press two short times.

Message Codes:

0	(None - Default)	No Message	
1	● (Short)	Yes (Going Inby)	*
2	● ● (Short-Short)	No (Going OutBy)	*
3	● ● ● (Short-Short-Short)	Emergency HELP	**
4	▬ (Long)	Loss of Comm	*
5	● ▬ (Short-Long)	Non-Emergency Help	*
6	▬ ● (Long-Short)	Equipment Failure	*
7	▬ ▬ (Long-Long)	Arrived on Scene	*

Notes:

* Mine Programmable Codes, the code assignments (meanings) entered above are only used as examples, the Mine should select terms as appropriate.

** Emergency Code will timeout in about 2 hours, it will continuously transmit and beep three times every 2.5 minutes to remind the user of the mode and possibly as an acoustic beacon.

● A Short is a quick beep: the time it takes to say 'Hi"

▬ A Long is an extended beep, at least 0.8 seconds, no more than 2 seconds; the time it takes to say "100,000"

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Specifications and Data

Physical Parameters:

Size:	2.0” x 1.25” x 0.5”
Weight:	~1.0oz
Body:	Black ABS Shell / Epoxy Encapsulated
Compression:	Tested after being run over by ManTrip
Environmental:	-40 / +85 Dec C., Highly Water Resistant

Electrical Parameters:

Battery:	3.0V Lithium (non-replaceable / encapsulated)
Service Life:	2 - 3 Years Typical
TX Frequency:	315MHz
Range:	+375ft. LOS (as tested in underground scenarios, will vary with situation, and obstructions)
Tag Reset:	The Tag will go through a re-initialization mode if the button is pressed over 4 seconds, twice, this allows for transmit frequency calibration.

Features:

Unique Tag Identification Number
Battery Level Indicated
Integrated Message Code
Internal Temperature
Audio Beep Feedback Indicator
Tactile Button
Transmit time wobble for progressive anti-collision
Long Range
Limited airtime to allow many tags to operate in close proximity