

# Radius P200 synthesized portable radio

## General Specifications

<b>Model Series:</b>	H33RFU/H43RFU	H34RFU/H44RFU
<b>Frequency:</b>	136-174	403-433, 438-520
<b>Power Supply:</b>	One rechargeable nickel cadmium battery	
<b>Dimensions:</b>	7.0 x 2.7 x 1.38 (177 x 69 x 35mm)	
<b>Average Battery Life @ 5-5-90 Duty Cycle:</b>	<b>Low Power</b>	<b>High Power</b>
<b>*Medium Capacity:</b>	8 hours	5 hours
<b>High Capacity:</b>	14 hours	8 hours
<b>Mil-Std:</b>	Designed to meet Mil-Std 810 C and D	
<b>Sealing:</b>	O-ring design to withstand raining testing per Mil-Std. 810 C/D	
<b>Shock &amp; Vibration:</b>	Impact resistant polycarbonate housing exceeding EIA RS-316B	
<b>Dust &amp; Humidity:</b>	Weather resistant housing exceeding EIA RS-316B	

\*Available for use in Light Duty Cycle Applications

### Transmitter

	VHF		UHF	
	High 5W	Low 2W	High 4W	Low 2W
<b>RF Output NI-CD @ 10.0V:</b>				
<b>Frequency Separation:</b>	6 MHz No Deg		8 MHz No Deg	
<b>Allowable Separation (w/degradation):</b>	16 MHz*		16 MHz*	
<b>Frequency Stability -30 to +60 C: 25 C Ref</b>	± .0005%		± .0005%	
<b>Modulation: Spurs/Harmonics:</b>	20KOF2D, 20KOF3E -55 dB		-53 dB	
<b>Audio Response: (From a 6 dB/Oct. Pre-Emphasis; 300 to 3000 Hz)</b>	+1, -3 dB +		+1, -3 dB	
<b>Audio Distortion: (@ 1000 Hz, 60% Rated Max. Dev.)</b>	5%		5%	
<b>FCC Designation:</b>				
<b>Low Power</b>	AZ489FT3699		AZ489FT4700	
<b>High Power</b>	AZ489FT3700		AZ489FT4701	
<b>FM Noise:</b>	-40 dB		-40 dB	

\*Constrained by Sub-Bands Limitations

### Receiver

	VHF	UHF
<b>Channel Spacing:</b>	30 kHz	25 kHz
<b>Modulation Acceptance:</b>	>7.5 kHz	>7.5 kHz
<b>Frequency Separation:</b>	6 MHz No Deg	8 MHz No Deg
<b>Allowable Separation (w/degradation):</b>	16 MHz*	16 MHz*
<b>Sensitivity 20 dB Quieting:</b>	.35 µV	.50 µV
<b>12 dB Sinad:</b>	.25 µV	.35 µV
<b>Squelch:</b>	.18 µV	.22 µV
<b>Selectivity: (EIA SINAD)</b>	-65 dB	-65 dB
<b>Intermodulation:</b>	-65 dB	-63 dB
<b>Frequency Stability -30 to +60 C Ref.</b>	± .0005%	± .0005%
<b>Spur Rejection:</b>	-65 dB	-65 dB
<b>Image Rejection:</b>	-60 dB	-60 dB
<b>Audio Output: (@ Less than 10% Dist.)</b>	500 mW	500 mW
<b>EIA Useable Bandwidth:</b>	6 kHz min.	5 kHz min.

Applicable MIL-STD.	810C Methods/Procedures	810D Methods/Procedures
Low Pressure	Method 500.1	Method 500.2
High Temperature	Method 501.1	Method 501.2
Low Temperature	Method 502.1	Method 502.2
Temperature Shock	Method 503.1	Method 503.2
Solar Radiation	Method 505.1	Method 505.2
Rain	Method 506.1	Method 506.2
Humidity	Method 507.1	Method 507.2
Salt Fog	Method 509.1	Method 509.2
Dust	Method 510.1	Method 510.2
Vibration	Method 514.2	Method 514.3
Shock	Method 516.2	Method 516.3



For further information contact:



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# Radius

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## Operator Features/Advantages

**Power Up Alert**—Each time the radio is turned on, a micro-computer self test occurs and an internal self-check gives an alert tone to signal the user that the radio is working properly each time it is turned on.

**The user knows the radio is working each time it is turned on. This reduces the possibility of personnel unknowingly putting non-working equipment to use.**

**Universal Capability**—The P200 portable radio has a top mounted Universal connector attaching a variety of audio accessories. This connector also provides accessibility for programming and testing the radio.

**The use of audio accessories provides the user added convenience by allowing talk and listen operation without removing the radio from its carry case or belt.**

**Easy Channel Selection**—One easy-to-grip knob selects both channel and squelch code.

**Operation is fast, easy and dependable.**



**Channel Busy Light**—The dual function LED glows with a flashing green light when there is channel activity on a PL or DPL protected channel.

**Adds user convenience, allowing a quick glance at the radio control top to determine if a channel is free.**

**Battery Status/Transmit Indicator**—The red dual function light emitting diode (LED) activates when transmitting and glows steadily. When the battery requires charging the LED blinks.

**Users know when the battery is low, allowing them to charge or replace the existing battery. This can help avoid your personnel inadvertently being left without communications.**

**Monitor Button**—The monitor button is conveniently located on the side panel of the radio, for quick and easy one-handed activation. It allows the user to monitor the channel for activity before transmitting.

**The location of the monitor button allows the user to monitor a channel using only one hand, leaving a hand free for other activities.**

## Options/Advantages



**Touch-Code Dual Tone Multiple Frequency (DTMF)**—Three different DTMF options are available on the P200 radio:

- Standard DTMF
- Continuous Tone DTMF
- DTMF with Automatic Number Identification (ANI)

**Standard Tone DTMF**—Standard DTMF provides you with 9 repertory memory locations where you can store your commonly used phone numbers. The phone numbers are stored via a program button on the front cover of the P200.

**Other Features Available on Standard DTMF are:**

Sixteen Characters per Memory Location  
Last Number Redial  
Scratch Pad Memory  
Indefinite Pause

**Continuous Tone DTMF**—This option is similar to the Standard DTMF option, except that no memory features are available and the tones will continue for as long as a button is depressed.

**DTMF WITH ANI (Automatic Number Identification)**—Use this option when your Telephone Interconnect System requires ID codes for each radio. In DTMF with ANI, memory is not available for manual storage or erasure. A special fixture is required to program information in any of the nine memory locations. Therefore, ID codes can only be programmed by the system operator. The Last Number Redial, Scratch Pad Memory and Automatic Dialing features will remain the same as in Standard Tone DTMF.

## Approved for Operation in Hazardous Atmospheres Factory Mutual Intrinsically-Safe Approved Models

For those applications requiring the use of portable radios in hazardous atmospheres, both low and high power P200 Radios are approved by Factory Mutual as intrinsically safe for use in Classes I, II & III Division 1, Groups C, D, E, F, and G. Also approved for non-incendive for use in Class I, Division 2, Groups A, B, C, and D.

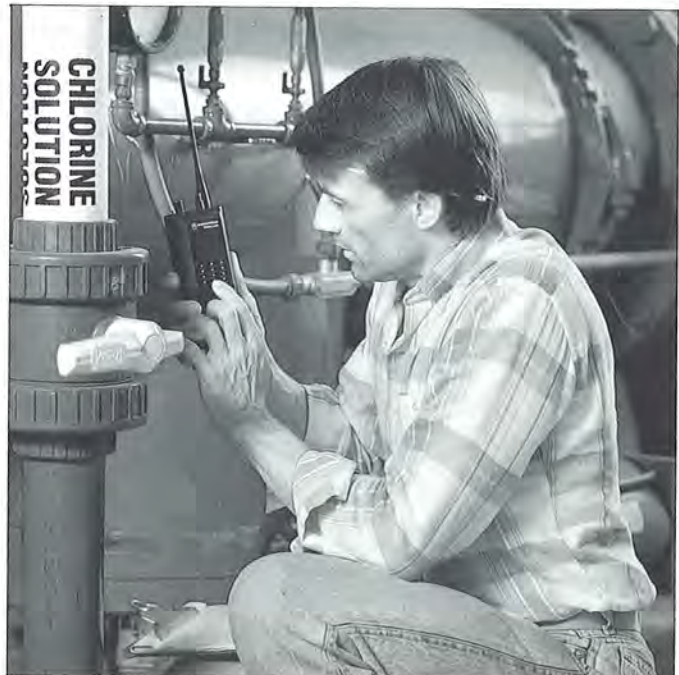
**The intrinsically safe rating by Factory Mutual states that electrical equipment will not release sufficient electrical or thermal energy, under normal or abnormal operating conditions, to cause ignition of specific hazardous atmospheres designated on the radio label.**

**Time-Out-Timer**—Transmission is limited to a 60 second duration. The transmission is automatically terminated after 60 seconds and an audible alert tone is emitted to signal this condition to the operator. After releasing the PTT, the operator can again key-up for the next transmission.

**This automatic time-out prevents the user from tying up the channel in case of accidental keying of the transmitter.**

**Quik-Call II Decoding (Selective Call Signaling)**—When P200 is placed in the Quik-Call operating mode, only messages preceded by the individual radio's coded signal will be received. A two-tone paging encoder system is required for operation.

**Quik-Call II decoding lets your radio double as a pager. This provides you with system flexibility and keeps your personnel out of the communications flow until they are needed.**



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## SYSTEMS

### Advances/Advantages



**2 or 6 Channel Models**—Multi frequency capabilities of P200 allows you to use different repeater systems and communicate with different groups. **The P200 provides the capability and flexibility to work in a wide variety of small and medium size systems.**

**Wide Spaced Transmit and Receive**—In VHF, Transmitter and/or Receiver frequencies can be separated by up to 16 MHz with no degradation of performance. In UHF they can be separated by up to 8 MHz.

**Users with multiple channels or with a need for multiple system access can now get the flexibility of wider bandwidth with the assurance of full performance.**

**Multi Digital Private-Line and Private-Line Coded Squelch**—Coded squelch allows only those calls with your particular code to be heard and can be enabled on a per channel basis. Up to four codes are available per radio.

**This feature will minimize annoying co-channel interference and provide access to systems and repeaters that have different squelch code requirements.**

## RELIABILITY AND PERFORMANCE

### Improvements/Advantages

**Small Size and Lightweight**—The P200 housing size and weight depends on the battery type. With a high capacity battery the radio is 7 $\frac{1}{4}$  inches tall and weighs 24.1 ounces. With a medium capacity battery, however, P200 is 6 $\frac{1}{2}$  inches tall and weighs 21.4 ounces.

**The choice of battery allows you to choose between the long battery life or the small size. With P200 you have a choice. Choose whichever is more important to you—small size or the long battery life.**

**Choice of Power Levels**—P200 Portable is available in 2 or 5 watts in VHF and 2 or 4 watts in UHF.

**A choice of power levels allows you to design the system that meets your specific coverage needs.**

**Rugged Design**—The housing is constructed of highly durable, impact resistant, molded polycarbonate compound. O-rings and seals are utilized to provide extra resistance against dirt, dust and water intrusion.

**P200 is designed to take a beating on the job and keep talking. A durable radio can help save money on replacement and repairs.**



**Radio Cloning**—Each P200 radio has a unique data stored "personality" with frequencies, squelch codes, and other operating characteristics. Using a simple cloning cable you can duplicate one radio's characteristics into another P200 of the same sub-band.

**Independent work groups operating on different frequencies will appreciate the ease with which a radio can be moved from one group to another. With cloning the process is faster, easier and less expensive.**

**Field Programmability**—P200 utilizes a reprogrammable EEPROM code plug, which permits the Radius Dealer to change the operating characteristics of your radio within the designated sub-band. Programming is done via a programming cable interface to an IBM PC or Laptop PC.

**Frequency and operating characteristics can be changed quickly and inexpensively, saving time and money. A radio can be changed with a minimum of down time, enabling you to easily move the radio from one work group to another.**



## ACCESSORIES



**Choice of Carrying Accessories**—A variety of carry accessories are available for your comfort and convenience. Our radio cases are of top quality leather and are available in sizes designed to fit your radio and battery. Cases are available with standard belt loop or swivel back covers, with restraining T-strap.



**Choice of Batteries**—Nickel Cadmium rechargeable High Capacity Rapid Rate Battery is a standard feature with P200. The Medium Capacity Rapid Rate Battery is available when ordering a Low Power P200 Radio. All batteries are easy to change, slide-on type that lock securely. Battery choices are available to provide your personnel the optimal combination of power, duty cycle and weight.

**Battery housings are ultrasonically welded and separate from the radio compartment providing protection against shocks and drops.**



**Speaker/Microphone/Antenna (SMA) (UHF Only)**—A special public safety remote speaker microphone accessory has a top mounted antenna, providing additional antenna height for better radiation.

**Remote Speaker Microphone**—A speaker microphone is available to provide remote talk and listen capability. By attaching the microphone to the top of the radio, you can use the remote speaker "mic" to transmit or receive while the radio remains comfortably on the belt or in the case.



### Choice of Chargers

**Rapid Rate Desktop Chargers**—A variety of chargers are available to fit the charging capabilities of your batteries. Choose rapid rate single unit or rapid rate six unit chargers. The rapid chargers are equipped with red and green lights to indicate:

1) Rapid charging; 2) Charge complete. All desktop units will accept any of the 2 battery sizes, with or without radio attached.



**Compact Charger**—The compact charger provides a 16 hour charge rate. When there is little available space, the compact charger's small size is the answer. This standard feature is convenient in size and weight and is ideal for users who occasionally charge their radio at home.