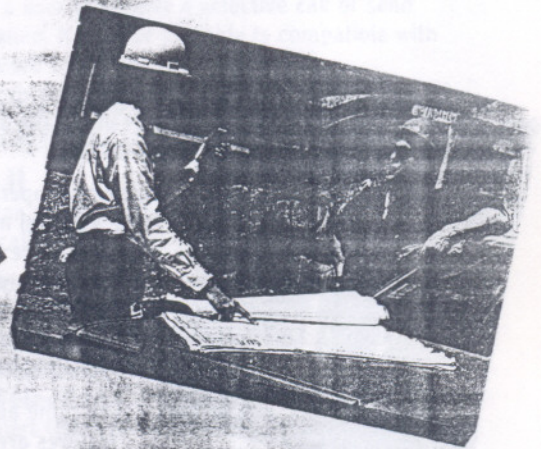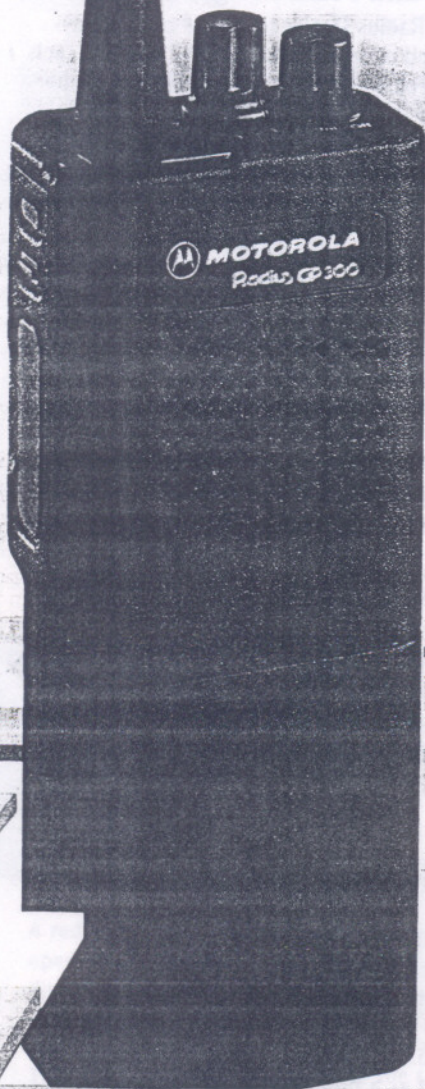# BREAKTHROUGH COMMUNICATIONS
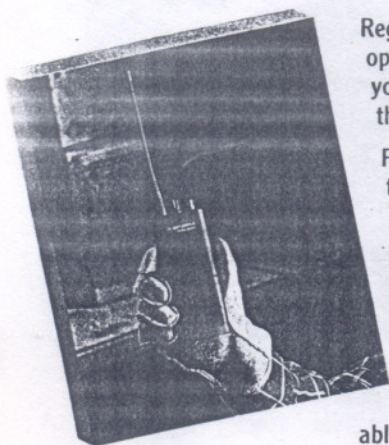

Radiu

(M) MOTOROLA

GP 300
PORTABLE TWO-WAY RADIOS

Radius® GP 300

Opening up a world of new possibilities.

Regardless of the size of your operation, you owe it to yourself to take a look at the GP300.

For smaller operations, the 2-channel model provides more advanced features than ever before. And it provides all of this in a very compact sized radio.

The same advanced features are available in the 8-channel model, with the option of channel scanning and signalling capabilities.

The 16-channel model puts you at the forefront of Radius' technological advances, providing multiple channels, scan and signalling capabilities for virtually any size operation.

All three models draw on advanced technology to bring you higher levels of utility than ever before...and open up a world of new possibilities for your communications needs.

Breakthrough Communications at Your Fingertips

The Radius GP300 puts a world of advanced technology in the palm of your hands. This feature-packed, yet compact radio is designed with the user in mind. All operating controls are located on the top and side of the unit and can even be operated with gloves on.

Antenna Connector
On/Off/Volume Control
PTT
Control Buttons
Accessory Connector
Channel Selector
LED Indicator

Programmable Power Levels

Each channel can be dealer programmed to deliver anywhere from 1-5 Watts in VHF models and 1-4 Watts in UHF models. Now you can match each channel's power output to a specific range of intended use which maximizes battery life.

Synthesized and Field Programmable

Allows your local Radius Dealer to add or change any radio frequency and other individual characteristics, such as PL or Unit ID. For added convenience, cloning capability allows the dealer to transfer one radio's personality to another. Keeps your system flexible so that it can continue to meet your needs as they grow and change.

Unlimited Multiple-Coded Squelch Capability (PL/DPL)

Most multiple-coded squelch capable radios offer one PL/DPL code per channel; the GP300 offers TWO (one each for every transmit and receive frequency). This privacy feature allows you to hear only those calls accompanied by your unit's PL/DPL code **and** place calls to only those that accept your code. So the opportunity for separate talk groups is virtually unlimited; the 2-channel model offers 4 PL/DPLs, the 8-channel model offers 16 and the 16-channel model offers an unprecedented 32.

Wide Band Frequency Separation

Wide bandwidth allows the addition or changing of frequencies anywhere within the radio's operating band without compromising clarity or performance.

GP300 Optional Enhancements

Priority Channel Scan

(8 and 16-channel models only)
Your Radius Dealer can program a scan list using a channel location, allowing you to "scan" multiple channels at the turn of a knob. A channel of increased importance can be designated as a priority channel within the scan list and monitored more frequently.
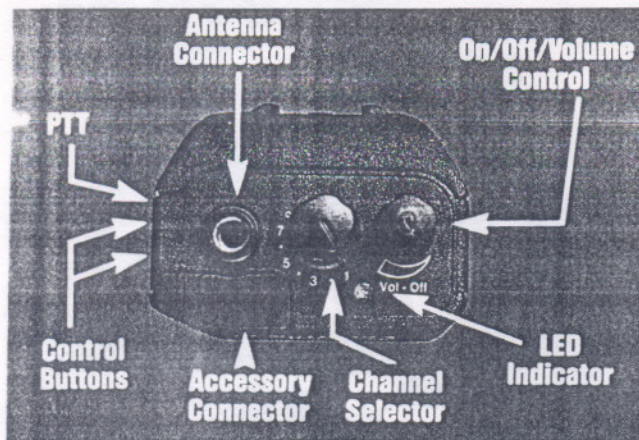
Nuisance Channel Delete

(8 and 16-channel models only)
When an irrelevant conversation is tying up the scan feature, the user can temporarily remove that nuisance channel by pressing the side control button.

Busy Channel Lock-Out

Prevents the radio from receiving unauthorized transmissions and from transmitting on a busy channel, keeping lines of communication clear.

Time-Out Timer

Save battery power and busy channel aggravation by limiting all transmissions to 60-seconds each. Inadvertent transmissions will turn off when the time limit is reached.

Battery Saver/Low Battery Alerts

The Battery Saver feature of the GP300 assures you adequate battery power each and every time you need it. In addition, the GP300 provides both an audible and visual low battery warning.

Internal Voice Operated Transmission (VOX)

When hands-free operation is desired, the GP300 can be activated by voice alone. Rather than adding VOX electronics into every accessory you buy, it's built right into the radio. This allows you to activate VOX with standard headsets, keeping costs down.

Touch-Code Encoding Keypad

(8 and 16-channel models only)
Dual Tone Multiple Frequency (DTMF) tones are encoded through the optional numeric keypad for access to the land-line telephone network and for remote control.

Tricolor Transmit Indicator

A red, yellow and green LED confirms the status of operation on a continuous basis. The following conditions are all identifiable with unique LED indicators: busy channel, low battery, disabled PL/DPL, incoming selective call, active channel scan and active transmit. These indicators help you operate the radio quickly and easily.

RapidCall Signalling: A good reason to think ahead and choose the 8 or 16-channel models.

The 8 or 16-channel versions of the Radius GP300 are capable of the RapidCall advanced package of selective signalling. RapidCall signalling provides a feature set which allows a user to receive a selective call or send unit identification. Now your portable is compatible with Radius mobiles.

The 8-channel GP300 models offer the following RapidCall features:

Quik-Call II

The GP300 can receive two types of Quik-Call II pages in the group call or individual call formats:

- **Call Alert**
  Voiceless paging with an important advantage—continuous beeping that does not stop until the message is answered.
- **Voice Selective Call (SelCall)**
  Paging alert followed by a voice message.

MDC-1200

The MDC-1200 option provides high-speed digital signalling:

- **Push-to-Talk Identification (PTT ID)**
  Every time the PTT button is pressed a unique ID is sent. This allows the dispatcher to identify which radio is transmitting.

The 16-channel GP300 models add the following RapidCall features:

MDC-1200

- **Call Alert**
  The same feature that was described above with one important difference. The radio returns a verification to the sender that the page has been received.
- **Voice Selective Call (SelCall)**
  The radio receives an individual or group voice message with an alert to indicate that it's a selective call.
- **Radio Check**
  Radio check allows a dispatcher to determine whether the portable is on and functioning without disturbing the radio operator.

DTMF

DTMF signalling provides compatibility with existing radio systems:

- **Push-to-Talk Identification (PTT ID)**
  Same signalling feature as above in a different signalling format.

Radius
Completing The Communications Circle.

Breakthrough technology that breaks the price barrier...

Radius® GP 300

More channels. More features. More of everything that makes a two-way radio indispensable.

The more you depend on clear communications, the more you'll appreciate the Radius GP300. It offers state-of-the-art technology at a price readily affordable by even small and medium size users.

Never before have advanced features like these been so accessible:

- Your choice of 2-channel, 8-channel or 16-channel operation

- Dealer programmable priority channel scan

- Unlimited Private-Line/Digital Private-Line (PL/DPL)

- The ability to choose different power levels on different channels

- Internal VOX (Voice Activated Transmit) provides hands-free operation when used with audio accessories

- Signalling compatibility with Radius RapidCall Mobile Radios

- Compact size with exceptional talk-out range and battery life

- Breakthrough audio clarity

- Plus—all the features and benefits you've come to expect from Radius

It's a giant step forward in portable communications... only from Radius.

Shown Actual Size

Motorola Built and Backed, Military Tough

Quality and reliability are standard features of the GP300—backed by Motorola's commitment to excellence.

- Each model must pass Motorola's Accelerated Life Testing before we offer it to you. ALT simulates five years of hard use in the field and is your best assurance of durability.

- Each GP300 unit is built to withstand on-the-job punishment—made from the same hi-impact material used to make football and motorcycle helmets. Special O-rings and seals are designed to keep out dirt, dust and moisture.

- The Radius GP300 meets tough military specifications by satisfying MIL-STD 810 C, D and E. Meeting these standards earns it the approval of the U.S. military for use in rough environments.

- The GP300 is also available with Factory Mutual Intrinsically Safe Approval for operation in hazardous atmospheres. When equipped for such operation, the GP300's 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.

## Optional Accessories: the last word in flexibility.

Remote Speaker Microphone
Attaches to operator's clothing for louder audio and easier accessibility to the PTT button. Eliminates the need to remove the radio from a belt to hear better or send a message.

Choice of Batteries
Choose standard high capacity or slimline low capacity shock-resistant Nickel-Cadmium rechargeable batteries, depending on your needs.
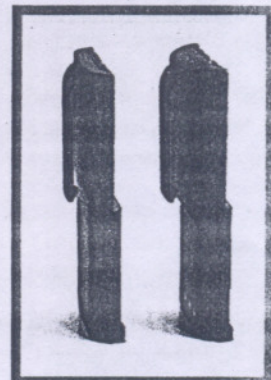
Choice of Chargers
Rapid rate model completes the charge in an hour; light indicates charge in progress. Standard charger provides 10-hour charge rate. Multi-unit charger charges up to 6 units. All are available in 110, 220, or 240V.
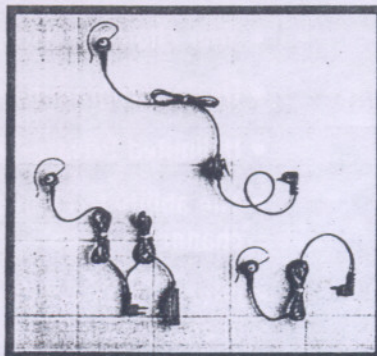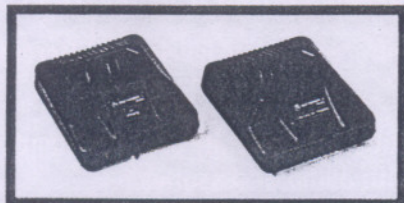
Choice of Earpieces
Allows you to listen to clear transmissions in noisy environments or when privacy is important. Available with and without volume control.

Surveillance Microphone
When subtlety is important, the Surveillance Microphone provides both a small lapel microphone with PTT button and a small earpiece which plug into the radio.
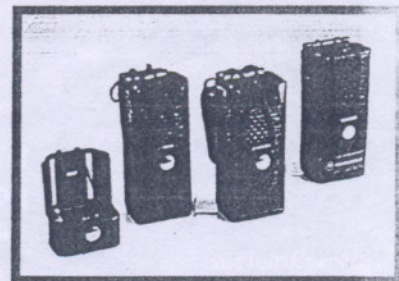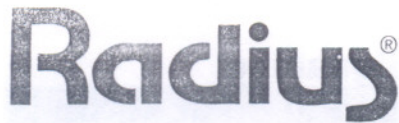
Headset
Frees up operator's hands and provides sound clarity in noisy environments. The user can transmit with the radio's internal VOX capability or with the PTT button.

Choice of Carrying Cases
Choose leather, nylon or urethane, available with standard belt-loop or swivelback covers and restraining straps.

Radius®

GP300 Portable Two-Way Radio Specifications

General

	VHF	UHF
Model Series:	P93YPC	P94YPC
Frequency:	136-162, 146-174 MHz	403-433, 438-470, 465-495, 490-520 MHz
Channel Capacity:	2, 8 or 16	
Power Supply:	One rechargeable Nickel-Cadmium battery	
Dimensions*:	5.5" x 2.34" x 1.65" (140 x 59 x 42mm)	
Weight*:	17.8 oz. (509 g)	

Average Battery Life @ 5-5-90 Duty Cycle:	Low Power	High Power	Low Power	High Power
High Capacity:	10.5 hrs.	8 hrs.	10.5 hrs.	8 hrs.
Low Capacity:	5.2 hrs.	4 hrs.	5.2 hrs.	4 hrs.

MIL-STD:	Passes MIL-STD 810 C, D & E
Sealing:	Passes rain testing per MIL-STD 810 C, D & E
Shock & Vibration:	Impact resistant polycarbonate housing passes EIA RS-316B and MIL-STD 810 C, D & E
Dust & Humidity:	Weather resistant housing passes EIA RS-316B and MIL-STD 810 C, D & E

*Standard high capacity battery model

Transmitter

	VHF		UHF	
RF Output Ni-Cd @ 7.5V.	High 5W	Low 1W	High 4W**	Low 1W
Frequency Separation:	26, 28 MHz		30, 32 MHz	
Frequency Stability (-30°C to +60°C):	± .0005%		± .0005%	
Spurs/Harmonics:	.25 µW		.25 µW	
Audio Response: (From a 6 dB/Oct. Pre-Emphasis: 300 to 3000 Hz)	+1, -3 dB		+1, -3 dB	
Audio Distortion: (@ 1000 Hz 60% Rated Max. Dev.)	<3%		<3%	
FM Noise*:	-45 dB		-45 dB	
FCC Designation:	ABZ99FT3010 ABZ99FT3011		ABZ99FT4010 ABZ99FT4011 ABZ99FT4012	
FCC Modulation:	FM Designator F3E, F2D, F1D			

*Typical Specifications
**Maximum RF Output is 3 W on frequencies greater than 512 MHz.

Optional Signalling Features with RapidCall Package

"8" indicates availability in 8-Channel Model. "16" indicates availability in 16-Channel Model.

Signalling Format:	PTT ID Encode	Call Alert Decode	Voice SelCall Decode	Radio Check Decode
MDC-1200:	8, 16	16	16	16
Quik-Call II:		8, 16	8, 16	
DTMF:	16			

All three signalling formats can be programmed into a single radio, one format per channel.
The GP300 can also be ordered with Select V Signalling in both 8 and 16-channel modes.

For further information contact:

Military Standards 810 C, D & E

	810C		810D		810E	
Applicable MIL-STD:	Methods	Procedures	Methods	Procedures	Methods	Procedures
Low Pressure:	500.1	1	500.2	1,2	500.3	1,2
High Temperature:	501.1	1,2	501.2	1,2	501.3	1
Low Temperature:	502.1	1	502.2	1,2	502.3	1,2
Temperature Shock:	503.1	1	503.2	1	503.3	1
Solar Radiation:	505.1	1	505.2	1	505.3	1
Rain:	506.1	1,2	506.2	1,2	506.3	1,2
Humidity:	507.1	2	507.2	3	507.3	3
Salt Fog:	509.1	1	509.2	1	509.3	1
Dust:	510.1	1	510.2	1	510.3	1
Vibration:	514.2	8,10	514.3	1	514.4	1
Shock:	516.2	1,2,5	516.3	1,4	516.4	1,4

Factory Mutual Approvals

Factory Mutual has given the GP300 an intrinsically safe rating for use in Classes I, II and III. Division 1, Groups C, D, E, F and G, on models ordered with the 600 mAH FM battery option and the full 1200 mAH FM battery option. Factory Mutual has given the GP300 an intrinsically safe rating for use in Class I, Division 1, Groups C and D, on models ordered with the limited 1200 mAH FM battery option.

Models ordered with any FM battery option are approved for non-incendive use in Class I, Division 2, Groups A, B, C and D.

Receiver

	VHF		UHF	
Channel Spacing	12.5 kHz	20/25/30 kHz	12.5 kHz	20/25 kHz
Frequency Separation:	26, 28 MHz		30, 32 MHz	
Sensitivity*				
EIA: 12 dB SINAD:	- -	.22 µV	- -	.22 µV**
CEPT 84: 20 dB SINAD:	.35 µV	.30 µV	.35 µV	.30 µV
20 dB Quieting:	.38 µV	.32 µV	.38 µV	.32 µV
Squelch:	10 dB SINAD		10 dB SINAD	
Selectivity				
EIA:	- -	-70 dB	- -	-70 dB
CEPT 84:	-60 dB	-70 dB	-60 dB	-70 dB
Intermodulation:				
EIA:	- -	-70 dB	- -	-70 dB
CEPT 84:	-70 dB	-70 dB	-70 dB	-70 dB
Frequency Stability (-30°C to +60°C):	±.0005%		±.0005%	
Spur Rejection				
EIA:	- -	-75 dB	- -	- -75 dB
CEPT 84:	-70 dB	-70 dB	-70 dB	-70 dB
Image Rejection				
EIA:	- -	-75 dB	- -	-70 dB
CEPT 84:	-70 dB	-70 dB	-70 dB	-70 dB
Audio Output (@ 1 kHz, 60% Dev.)				
EIA: (@ < 5% Dist):	- -	500 mW	- -	500 mW
CEPT 84 (@ < 10% Dist.):	500 mW	500 mW	500 mW	500 mW
EIA Useable Bandwidth:	- -	7.5 kHz	- -	7.5 kHz

*Typical specifications
**Typical specification is .28 µV on frequencies greater than 512 MHz

(M) **MOTOROLA**

Radio Products Group

In 1988 Motorola was a winner of the first Malcolm Baldridge National Quality Award.

National Quality Award