



RCA
Communications Systems



BR850 SERIES

BR850-IS UHF

BR850-IS VHF

Intrinsically Safe
Professional Two-Way Radio

THE RELIABLE INTRINSICALLY SAFE RADIO!

The RCA BR850 handheld radio series is not only durable, but filled with the features you need to perform at your highest level. They are designed with XSound™ Sonic Plus extra loud audio and an incredibly long lasting lithium battery that is able to handle even the longest shifts on the job. This model is also equipped with life-saving and security features such as Man Down emergency signaling and SecurEncrypt™ transmission scrambling technology. When you require an Intrinsically Safe radio to use in hazardous or potentially explosive environments, the RCA BR850 series is the undisputed industry standard.

BR850 FEATURES

INTRINSICALLY SAFE The RCA BR850-IS is SGS certified to the requirements of ANSI/UL913 5th Edition for use in Class I, II, III, Division 1; Groups C, D, E, F, G; Temp T3C hazardous locations.

AUTO CONTACT The feature is especially helpful in high-demanding communication environments, such as climbing, exploration, and rescue work. The radio beeps when the user is moving out of communication range.

NARROWBAND COMPLIANT These radios are FCC 2013 Narrow Band Compliant.

DATA TRANSMISSION The wireless transfer of data from one radio to another, through personal computers connected to the source radio and the target radio.

CHANNEL ANNUNCIATION This enables the radio to audibly report the current channel number when the unit is powered on or when you are switching channels.

Programmable - A programming cable for USB 2.0 port is provided for radio programming.

FIRMWARE UPGRADEABLE External Flash memory allows the radio firmware to be upgraded to include the latest features.

BATTERY POWER INDICATOR When you press the function key, the radio sounds "1", "2", "3", or "4" to indicate the current battery level of very low, low, satisfactory, or high respectively.

POWER ON SELF-TEST The radio itself checks its status automatically when power is on, and emits a corresponding alert if an error occurs (e.g. CPU error or EEPROM error), allowing the user to early detect unit faults.

HIGH TRANSMIT POWER The transmit power is 4W UHF band and 5W VHF band which accommodates wide communication coverage.

SELECTABLE VOLUME LEVEL The volume level of output audio and alert tone is programmable per user needs.

EMBEDDED MESSAGE & SERIAL NUMBER The radio's memory can store messages including service and programming records, for ease of maintenance and servicing, plus this feature also makes the unit identifiable by its Serial Number.

STUN/KILL & REVIVE This feature provides enhanced security to prevent unauthorized use of lost or stolen units, by remotely inhibiting of either transmit or transmit/receive. A stunned radio will return to operational use once again after receiving the revive code.

HIGH VOLUME A powerful 0.5W speaker with a diameter of 40mm, vocal cavity enhancements and innovations, ensures a superb clear, crisp sound, even in noisy environments.

2-TONE / 5-TONE ENCODE & DECODE Signalling system is radio dependent. 5-Tone models and 2-Tone models are available.

ADVANCED SECURITY FEATURES Safety and security are critical factors for modern organizations. The BR850-IS's Lone Worker, Safety Check, Man Down, Soft Power-off, Whisper and Scrambler features are designed to assure your safety in case of emergencies or accidents.

DTMF ENCODING

LONE WORKER The lone worker feature provides added security and safety for individuals who work remotely from their team. Should a user not respond to a regular warning tone, a defined emergency procedure is activated, sounding an emergency alarm or transmitting an emergency signal to the control center.

SAFETY CHECK Allows the control center or other authorized radios to check your radio status. Should the user not respond to a safety check signal, then a defined emergency procedure is activated, sounding an emergency alarm or transmitting an emergency signal to the control center.

MAN DOWN Providing even greater safety for employees in hazardous environments, the BR850-IS has a Man Down feature. In case you are suffering an attack or other accidents, and the radio falls over for a predetermined time period, this feature automatically summons assistance by sounding an emergency alarm or transmitting an emergency signal to the control center. You need to place the radio vertically, to exit the emergency mode.

SOFT POWER-OFF If you turn the radio off while it operates in emergency mode, the radio shall continue transmitting Emergency ID to the control center after you turn the radio



off. After the emergency procedure is completed, the radio shall automatically power off.

BUILT-IN SCRAMBLER The scrambler feature provides enhanced security for your important public safety and private security communications.

WHISPER When discretion is key, the Whisper feature means that even the quietest message can be

transmitted and understood. Selectable gain levels allow your radio to suit every working condition.

SIGNALING RCA's RDC2400 and MDC1200 signaling:

-The RDC2400 signaling is exclusive to RCA, and contributes to the system to achieve features including ANI (Automatic Number Identification), Call Timer, Record, Record Inquiry, Selective Call (Individual Call, Group Call, Zone Call, Broadcast), Alert Call (Individual Call, Group Call, Zone Call, Broadcast), Kill/Stun/Revive, Status Inquiry, Safety Check, Status Message, Short Message and Data Transmission.

-The MDC1200 Signaling allows functions including PTT ID Encode & Decode, Emergency Encode, Radio Check Encode & Decode, Kill & Revive Decode, Selective Call (Individual Call, Group Call, Fleet Call, Broadcast), Alert Call (Individual Call, Group Call, Fleet Call, Broadcast), Status Message Encode, and Fixed Message Encode.

BR850 SPECIFICATIONS

GENERAL SPECIFICATIONS		
Model		RB850-IS™
Channel Numbers		16
Channel Spacing		Analog: 12.5 KHz / 25 KHz
Operating Voltage		DC 7.4V
Frequency		UHF: 400-470Mhz
Operating Temperature		-4°F ~ +122°F (-20 °C ~ +50 °C)
Storage Temperature		-4°F ~ +140°F (-20 °C ~ +60 °C)
Weight		15 oz. / 426g (with battery B850LI-IS)
Size: HxWxD (inches)		4.98" x 2.16" x 1.5" (without antenna)
Waterproof Level		IP54 Dust and Water Resistant
Battery	B850LI-IS	7.4V 1700mAh Lithium-Ion Battery; 12.58 Wh
Battery Life (5:5:90 duty cycle)		Up to 10 Hours

RECEIVER	
Frequency Stability	± 2.5 ppm
Intermodulation	65dB
Adjacent Channel Selectivity	70dB @ 25KHz / 60dB @ 12.5 KHz
Spurious Response Rejection	70dB
Block	84dB
Rated Audio Power	0.5W
Audio Distortion	≤3%

TRANSMITTER	
Transmit Power	Low - 1W / Medium - 2W / High - 3.5W (UHF)
FM Noise	-40db @ 12.5 KHz / -45db @ 25 KHz
Sensitivity	0.25/0.35µV
Transmit Spurious Radiation	-36dBm@<1GHz, -30dBm@>1GHz
Adjacent Channel Power	-60dB@12.5KHz
Modulation Limit	2.5KHz @ 12.5 KHz / 2.5KHz @ 25 KHz
Idle Slot Power	-57dBm
Audio Response	+1dB---(-3)dB
Rated Audio Distortion	≤5%
Emission Designator	Analog 11K0F3E, 16K0F3E

digital
CODED SQUELCH™



SECURENCRYPT™

SGS
ANSI/UL 913
CSA C22.2 No. 157

MAN DOWN
EMERGENCY SIGNALING

2 YEAR
WARRANTY
PROTECTION PROGRAM

MDC1200
COMPATIBLE

Xsound™
Enhanced Audio Clarity

For more information, visit www.RCACommunicationsSystems.com

ACCESSORIES & OPTIONS



Remote Speaker Mic
SM850L-IS



High Capacity Li-Ion
1700 mAh 7.4V
B850LI-IS



Single Unit
Rapid Charger
CH850RP



Six Bank
Rapid Charger
CH850RP6



Leather Holster w/
Fixed Belt Loop
HL850FL



Leather Holster w/
Swivel Belt Loop
HL850SL



Stubby Antenna
AN250U-3 (UHF)
AN250V-3 (VHF)



Belt Clip
BC850



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