Multi-Speed Base Station Controller
BSC 2212

The BSC 2212 (Base Station Controller) is the central component of RadioMobile's mobile data system.

The BSC 2212 provides error-free, digital communication between a host computer and multiple mobile units over a full-duplex, FM radio channel. The BSC channel contention among the mobile units is managed by the BSC using Digital Sense Multiple Access (DSMA) techniques. Automatic Gain Control (AGC) circuits in the BSC compensate for variations in mobile signal deviation.

The Base Station Controller installs at the transmitter site and is interfaced directly with the base radio. The BSC automatically controls the operation of the radio during digital transmission.

Communication with the host computer is implemented over Ethernet or a RS232C data port, usually via telephone modem or microwave links from the control center. The BSC uses a specially-developed host message protocol to ensure fast and accurate communication with the host.

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Specifications for BSC

Data Rate	22KB Wide Band (25 Khz channels), 11Kb, Narrow Band (12Kb). Programmed ahead of time.
Radio Protocol	
Radio Modulation	4800 bps: Nyquist Filtered Bipolar (NFB). 9600 bps: 2 level Pulse Amplitude Modulation (PAM) with spectral precoding. 22k 4 level FSK
Channel Contention	Combination of Digital Sense Multiple Access (DSMA) and ALOHA
Forward Error Corrections	4800 bps: Modified Reed-Solomon. Single burst of 56 bit errors are correctable. 9600 - 22k bps: Interleaved Modified Reed-Solomon. Single bursts of 96 bit errors are correctable.
Address Capacity	4800 bps: 4096. 9600 bps - 22k: 1,048,576
Dynamic Group IDs	7 maximum + All Call ID
CW Identifier	User programmable to 12 characters
Radio Interface	
Transmit Audio Level	0-10 Vpp in 0.25 dB Steps
Transmit Driving Ability	600 ohms minimum load resistance. Stable with any output loading.
Receive Audio Level	100 mVpp to 10 Vpp
Receive Input Impedance	100k Ohm
Equalization	DSP equalizes transmit and receive audio distortion
Automatic Gain Control	4800 bps, 9600 bps: AGC in Base Station Controller receives messages with deviation between 700 Hz and 7000 Hz. 9600 bps: adjustable AGC 4.8k - 22k
Base Station	DB25P, DTE, 19k - 56k; DCD from Telco Modem controls BSC power; Ethernet
Environmental	
Humidity	0 - 95% RH, without condensation
Altitude	SL to 10,000 ft.
Power	BSC: 120/240 VAC or 10 – 15 VDC auxiliary. 220mA
Dimensions	1.75” H x 19” W x 8” D
Weight	3 lbs.

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