

Specification Sheet

CENTRAL ELECTRONICS BANK (CEB)



MOTOROLA
intelligence everywhere™

DECENTRALIZED CONTROL FOR MAXIMUM CONSOLE RELIABILITY AND REDUNDANCY

- Distributed microprocessors
- Multiple, distributed, independent diagnostics for self-testing and corrective action

CONSOLE CONTINUOUSLY CHECKS PATHS THROUGH SELF-DIAGNOSTICS

- Self-testing of audio and data paths
- Rapid identification and communication of console status to operator
- Optional logging to printer for record keeping

SELF-HEALING PROVIDES CORRECTIVE ACTION

- CEB switches to standby circuit if a failure is detected
- If necessary, failed modules electronically isolated
- Majority consensus of boards ensures accurate diagnostic execution

LOCAL OR REMOTE OPERATOR POSITIONS ALLOW SYSTEM TO MEET VARYING GEOGRAPHIC NEEDS

- Full dispatch capabilities including radio control, parallel status, and signalling control can be provided to operators at remote locations over modems

DIGITAL AUDIO SWITCHING HELPS MINIMIZE CROSSTALK AND BACKGROUND NOISE

MODULAR SWITCHING POWER SUPPLY

- Efficient, low power consumption, minimum heat generation for lower utility usage
- Light, modular design eases maintainability



The Central Electronics Bank (CEB) is the brain of the CENTRACOM Gold Series system. The CEB connects the operator positions to the radio system infrastructure.

OPTIONAL BATTERY BACKUP ENHANCES PERFORMANCE

- Eliminates need for a separate UPS to help save floor space and minimize costs
- Keeps CEB fully operational up to 30 minutes
- Automatic Switchover

MULTIPLE CEBs MAY BE NETWORKED INTO AN EMBASSY SYSTEM

- Increases audio resource capacity beyond 96
- Provides wide area dispatch operation

MINIMAL DOWNTIME ON SERVICING

- All modules are designed for hot pull and insert. This allows the system to be serviced while in operation.
- Modules may be sent to the System Support Center for servicing
- Optional spare boards available

GENERAL SPECIFICATIONS

Control Type	Distributed Multi-Microprocessor
Audio Switch Type	Time Division Multiplex utilizing 3 bus system
Voice Digitization	64 Kbps μ LAW P.C.M.
Operator Link	Max. 2000 ft. 7 pair cable. (Longer distances can be achieved via telephone lines or microwave using low speed modems)
Control Architecture	Autonomous control resident on each Operator Interface. Loss of one or more of these intelligent controllers will not affect the remaining console operation.
Data Communications	1 MHz bus with failsafe dual level tristate isolation on all modules. Separate signalling paths for bus control, with failsafe dual level tristate isolation on all modules. Separate voting link for diagnostic communications.
Line Protection	3 Terminal spark gap

END TO END SPECIFICATION

Line Input terminal to the speaker, and microphone to the line terminal.	
Freq. Response	300 to 3200 Hz +1, -3 dB
Distortion	Less than 2%
Hum and Noise*	
Transmit	50 dB below rated output of +11 dBm
Elite	50 dB below 0.25 watts speaker output for receive. (Maximum speaker output is 1 watt).
(For SmartZone Systems)	45 dB below 0.25 watts speaker output for receive. (Maximum speaker output is 1 watt).
Cross Talk*	55 dB below rated output levels
Level Control	Digital Level Memory – Gain level held in digital memory. Gain will not increase in the presence of noise or the absence of voice. Constant output (less than 3 dB change) for all voice input levels over the rated range.

RECEIVER LINE INPUTS

Receive/Call Light Sensitivity	-25 dBm (opt. -35 or -40 dBm)
Line Balance	70 dB @ 1000 Hz
Line Input Impedance	600 Ohms or 10,000 Ohm balanced

TRANSMIT LINE OUTPUTS

Line Output	Max. +11 dBm into 600 Ohm line, adjustable
Line Output Impedance	600 Ohm or 10,000 Ohm balanced

STATUS

Auxiliary Outputs	Form A dry closure, 24 volts, AC or DC. 1 Amp, non-inductive load. (Form B or Form C opt. available).
Auxiliary Inputs	Buffered inputs (or optional galvanically isolated, balanced input with maximum loop resistance of 10K Ohms for distant closures).

* At room temperature

BASE STATION CONTROLS

Tone Control	Guard Tone and one function tone (two sequential function tones optional), in the 500 to 2200 Hz frequency range. 15 standard control tones available. Total tone duration is less than 250 ms for any function.
DC Control	125V DC. Positive and Negative currents ($\pm 20\%$): 2.5, 5.5, 12.5 mA. Maximum loop resistance, including base station termination. 10K Ohms.

POWER SUPPLY

	(single)	(double)
Efficiency	70%	70%
Input Voltage Range	93-264 VAC	93-264 VAC
Input Frequency Range	47-63 Hz	47-63 Hz
Approvals	UL, CE, FCC, CSA, IEC	
Overload Protection	Electronic over voltage protection and current limiting	
Short Circuit Protection	Continuous short circuit protection	

DIAGNOSTICS

Independent Diagnostics subsystems are located in every Operator Interface Module and provide redundant diagnostic operation utilizing a "majority rule" system to evaluate, correct and/or isolate failed Central Electronic Bank modules.

Diagnostic Redundancy	– Equals number of Operator Interface Modules in system. Failure of one or more of these diagnostic subsystems will not affect the operation of the remaining diagnostic subsystems.
Auto Loop Tests	– Intra/inter-module audio paths in Central Electronics Bank are tested continuously. (Nominal cycle time for system test equals: 2 minutes.)
Data Tests	– Maximum time to identify failed Central Electronics Bank module is 5 seconds. (A second 5 second interval is used to confirm diagnosis prior to operator notification). – Links between operator positions and Central Electronics are tested every 5 sec. – Cyclical Redundancy Code (CRC) data integrity checks are performed continuously on all data communications – RAM/ROM tests are executed on initialization – Switch to standby System Timer Module occurs automatically every 24 hours
Self-Healing	– Auto-switch to standby System Timer Module – Firmware restart of failed module – Auto-switch to standby Base Interface Modules, if present – Automatic isolation and dual level tristating of failed modules
Diagnostics Display	– Audible alert to all operators – Abbreviated display to all operators – Status LED's on all Central Electronics Bank modules – Printer output at Central Electronics Bank – Diagnostic interrogation from operator keypad or optional terminal at Central Electronics bank



MOTOROLA, CENTRACOM Gold Series and the Stylized M Logo are registered in the U.S. Patent and Trademark Office. All other product or service names are the property of their respective owners.
©Motorola, Inc. 2002. (0212) VPS
Specifications subject to change without notice.