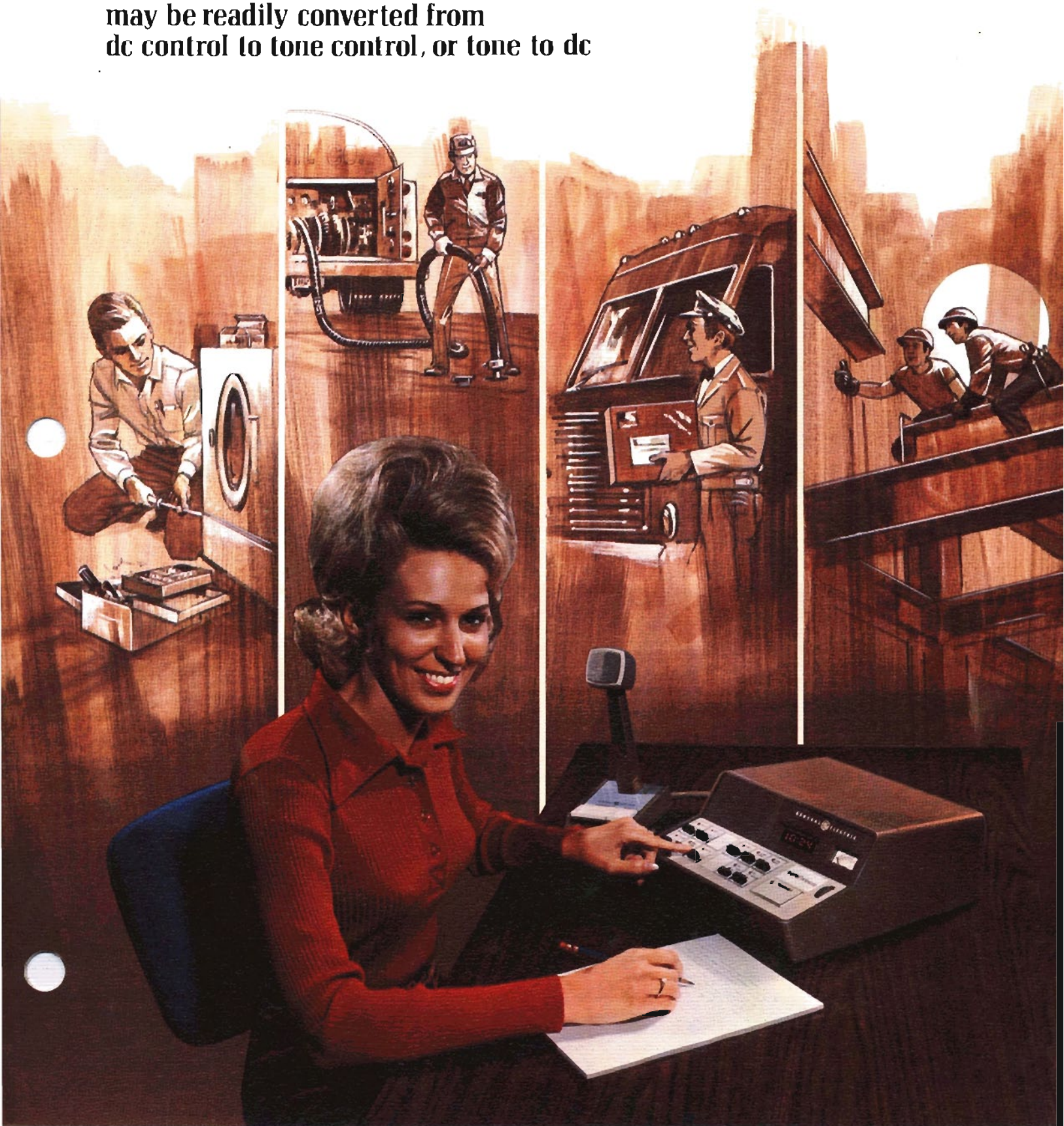


# MASTR CONTROLLER

The Desk Top Control Unit Built With The Future In Mind

Offers easy on-site expansion and  
may be readily converted from  
dc control to tone control, or tone to dc





# MASTR CONTROLLER

The General Electric MASTR Controllers allow you to place your base station in a remote location and control it from your office. This is achieved over a single pair of telephone lines.



## TONE CONTROL

*— the truly expandable system designed with an eye to the future*

The MASTR Controller is fully compatible with any General Electric remote system now in existence, and most systems other than General Electric. It is also easily expandable to include new or different functions that you may wish to add in the future.

Not only do you have two frequency operations with Channel Guard and Priority Search Lock Monitor, but the system is expandable up to twelve functions. You can use the controller to perform any additional functions that can be performed by tones.

In case of power failure, the system can be made to automatically revert to twelve-volt battery standby, and there is a flashing light option to let you know when you are operating on battery.

## DC CONTROL

*— new control currents add new functions and benefits*

The same MASTR Controller housing used for tone operation is used for dc operation. In fact, should you decide to switch from tone to dc, your service man will make the conversion for you with ease and speed. It is simply a matter of installing the appropriate function switches and plugging in the appropriate boards. An appropriate corresponding panel must be installed in the base station.

The dc operated controller is compatible with most systems now in operation.

Most present control consoles are capable of performing up to five functions. In addition to the standard functions of two-frequency transmit and receive with Channel Guard and Priority Search Lock Monitor, the MASTR Controller performs up to six functions with some features never before offered. A new control current method provides for two-frequency transmit, two-frequency receive, and Channel Guard disable operable with parallel controllers.

The MASTR Controller also operates into a total loop resistance of up to 11,000 ohms (8,000 line and 3,000 termination), allowing longer control lines. Your station can now be placed further away from your control point, or, in some cases, you can now use smaller, less expensive lines.

In case of power failure, you can now have a push-button option to put you on twelve-volt standby.

## The MASTR Controller may be used to control any remote, local/remote or remote/repeater station

### CONVERTIBILITY

— *built with the future in mind*

As your business grows and you find you need a more complex radio system, you can add more controls or functions simply by plugging in the appropriate control boards in the MASTR Controller and the station panel.

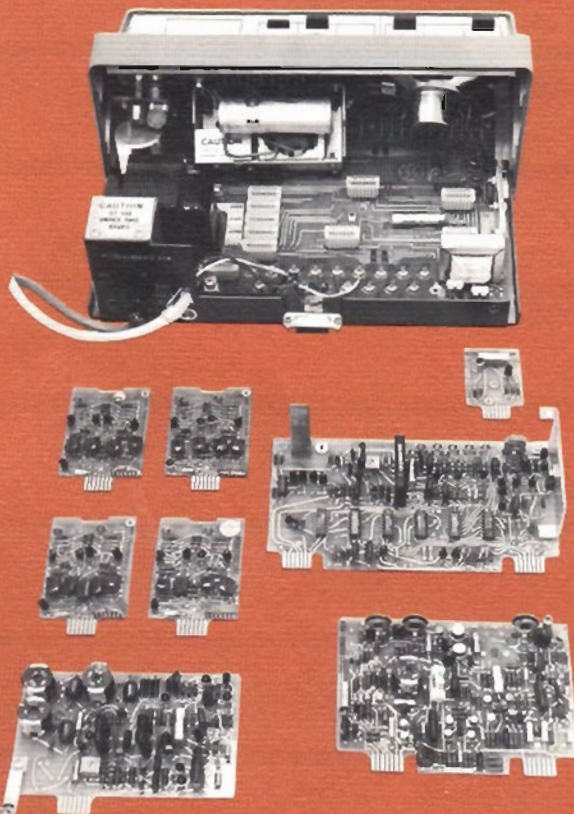
Even the function switches on the control surface of your controller snap out for easy replacement or change-over.

Once you own MASTR Controllers, whether your system is operated by dc or tone, you will never need to buy another type of control unit unless your system expands beyond twelve functions. Even if you convert from dc to tone or tone to dc, your high-style controllers remain in your possession. Only the internal plug-in function boards and surface switches change.

Your individual system requirements, whether simple or complex, can be completely satisfied now and in the future because of the extensive selection of operational functions available to you with the MASTR Controller.



An appropriate base station panel to match any combination of the MASTR Controller.



All solid-state function boards, including options, are gold-to-gold plug-in type, greatly increasing reliability and ease of convertability.

### RELIABILITY

— *state of the art providing peace of mind.*

The fact that the case and all surface parts are molded from General Electric Lexan® means high impact protection. That the unit is completely solid state means there is nothing inside to wear out—no reeds or relays but all solid-state tone generation and solid-state switches. Long-life light emitting diode indicators eliminate the need for frequent lamp replacement. Your push-to-talk switch is a newly designed, long-life micro-switch, and point-to-point wiring is greatly reduced by the plug-in function board technique.

The fact that all function boards, including options, are of the plug-in type and that they are equipped with General Electric Advanced Package System (GEAPS) connectors providing high contact density with gold-to-gold contacts, assures both convenience and reliability.

The greater reliability built into the MASTR Controller by General Electric know-how means greater convenience for you.

### AND---

— *a few additional facts you should know*

Alternate Line Selection gives you access to a back-up station in case of failure, or to a second set of lines in case of line failure.

Four-wire control separates the transmitter and receiver audio paths. Non-turn-around amplifiers give you duplex operation.

# OPTIONS AND ACCESSORIES

for greater system flexibility  
and ease of operation

## OPTIONS

Intercom

Supervisory Control/Take Over (Required by FCC  
at licensed control point)

Repeater Disable

Partial Speaker Mute

Electronic Clock – 12 or 24 Hour

VU Meter

Parallel Transmit Indicator

CG ON-OFF

Two-Level Squelch

E&M Signaling Control (dc control only)

Tone Alert

Twelve-volt Battery Standby (with switch in  
dc Control)

AC and Phone Line Surge Protection

Alternate Line Selection

Four-Wire Control for Duplex Operation

Line Compensation Kit

Auxiliary No. 1 ON-OFF

Auxiliary No. 2 ON-OFF

Notch Filter

## ACCESSORIES

Footswitch

Handset and Hookswitch

Lightweight Headset

240V to 120V Stepdown Transformer

Type 90 and 99 Tone Decoder Application

Type 90 and 99 Tone Encoder Application

Digital Encoder Application

Extender Card

Boom Microphone (exchange)

Voting Selector Interface

### *See your General Electric Communication Consultant*

General Electric's Communication Consultants will be glad to assist you in planning your two-way radio system to fit your particular requirements. General Electric Communication offices are located in every major city across the nation.

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GENERAL ELECTRIC COMPANY • LYNCHBURG, VIRGINIA 24502

**GENERAL**  **ELECTRIC**

# MASTR<sup>®</sup> REMOTE CONTROLLER



The MASTR Controller is a versatile, full-function accessory used for operating and controlling a remotely located base station over telephone lines or a continuously keyed radio frequency link. It's compact size and attractive appearance make it an asset to any shop or office location.

Three types of signalling are offered to meet the requirements of different applications. Models with DC current signalling may be used wherever control lines have DC continuity and up to six functions are needed, or for a remote station requiring such a signalling method. Tone signalling is recommended whenever control lines lack DC continuity or when up to 12 control functions are required. E&M signalling may be used in conjunction with microwave systems for push-to-talk operation.

The signalling systems available in the GE MASTR Controller series are functionally compatible with comparable competitive systems. The DC control current levels are widely adjustable in the MASTR Controller so that it is able to be used as a replacement in practically any DC system.

Design of the MASTR Controller is unique in that one system board is used with a variety of plug-in "function" modules which make up

many different combinations. These may be further expanded or modified with one or more options and accessories. This provides a wide choice of control functions and enables the MASTR controller to be easily field expanded, converted or modified to meet changing future requirements.

A standard MASTR Controller is equipped with a built-in speaker, transistorized dynamic desk microphone, on-off switch, volume control, PTT bar and selector switches for the functions provided. Blank panels are provided in unused switch positions.

Controllers provided for 3 and 4 frequency Tone Remote Base Stations are equipped with a 4-position rotary switch used to select both the receiver and transmitter frequency on each channel.

Long life, Light Emitting Diodes (LEDs) provide status information on the PTT bar and pushbutton function switches. The power-on indicator also is a trouble-free LED.

"Tone" controllers are equipped for automatic emergency transfer to a standby battery on loss of primary AC power (battery is not furnished). A similar manual function is an option for "DC" controllers.

## THE "SECUR-IT" TONE

In tone controlled models, a 2175 Hz tone precedes all function tones and is also used as the transmitter keying hold tone. In the first instance, it provides security against falsing. In keying, because it continues only as long as the PTT bar is depressed, inadvertent transmitter lockup is prevented.

## DUAL AMPLIFIERS

Separate compression amplifiers are used in each of the transmit and receive circuits. This holds input and output audio levels essentially constant and independent of control line losses or differing voice levels.

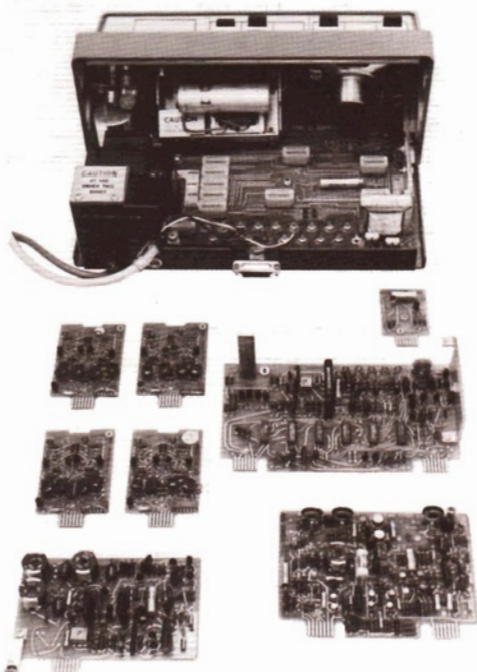
Two independent line amplifiers are used for the transmit and receive functions so that full duplex operation may be utilized.

## SWITCH PANEL

The viewing angle and plane of operation of the switch panel provide error free, convenient and easy operation. Each switch assembly can be totally removed from the front for servicing. The switch cover plate is also easily removable for change in function identification. The clock adjusts from the front, too.

## ACCESSIBILITY

All plug-in boards, the power supply and terminal strips are fully accessible by removing the back section of the case. It is held in place by just two captive screws which can be removed without tools. The entire power supply is separately covered to prevent inadvertent contact with the 115 VAC circuits.





# MASTR REMOTE CONTROLLER

## GENERAL

<b>Input Voltage:</b>	117 VAC $\pm$ 20%, 50/60 Hz	<b>Dimensions (ins):</b>	5.12(H) x 12(W) x 12.58(D)
<b>Standby Voltage:</b>	12 VDC (nominal)	<b>(cm):</b>	13.00(H) x 30.48(W) x 32.81(D)
<b>Power Input (max. functions):</b>	20W (Tx), 35W (Rx), 15W (Stby)	<b>Temperature Range:</b>	-30 <sup>o</sup> to +60 <sup>o</sup> C (-22 to +140 <sup>o</sup> F)
<b>Battery Drain on 12 VDC (max.):</b>	250 ma (Tx), 850 ma (Rx), 225 ma (Stby)	<b>Relative Humidity:</b>	90% at 50 <sup>o</sup> C (122 <sup>o</sup> F)
		<b>Altitude (for shipment):</b>	50,000 ft. (15,250 m)
		<b>Weight (max. functions):</b>	13 lbs. (5.9 kg)

## PERFORMANCE

<b>Compression:</b>	With audio increase of 30 dB beyond the start of compression output level increases less than 3 dB
<b>Distortion:</b>	3% throughout compression at rated output
<b>Frequency Response:</b>	+1, -3 dB (300 to 3000 Hz)
<b>Receive Mode</b>	
Sensitivity for threshold of compression:	-20 dBm
Audio output:	5W at 3.5 ohms
Hum & Noise:	-50 dB (below rated output)
Longitudinal Balance:	40 dB (over freq. range)
Transformer Hybrid Balance:	60 dB (1000 Hz)
Terminating Impedance:	600 ohms (150 & 900 ohms Optional)
Bridging Impedance:	3000 ohms at 300 Hz
<b>Transmit Mode</b>	
Output:	+11 dBm (600 ohm load) (150 and 900 ohms optional)
Hum & Noise:	-50 dB (below +11 dBm)

## DC CONTROL AND FUNCTIONS

Using 5 DC currents of -6, -11 to -15, -2.5, +6 and +11 to +15 mA into a control line with impedance up to 11,000 ohms (8000 line + 3000 termination), the following maximum combinations of station functions can be remotely controlled:

1 or 2 freq. transmit and 1 or 2 freq. receive with or without Channel Guard monitor, or

1 or 2 freq. transmit and 2 freq. receive (or two receivers) with Priority Search Lock Monitor (or simultaneous monitoring), or

1 freq. transmit, 1 freq. receive, repeater disable with or without Channel Guard Monitor (one Tx, one Rx)

## TONE FREQUENCY CONTROL AND FUNCTIONS

Twelve discrete tones of 1050, 1150, 1250, 1350, 1450, 1550, 1650, 1750, 1850, 1950, 2050 and 2175 Hz are used to remotely control the following maximum combinations of station functions:

1 or 2 freq. transmit, 1 or 2 freq. receive, two auxiliary (ON/OFF) functions and two level squelch (or Channel Guard on-off)

1 or 2 freq. transmit, 2 freq. receive (or 2 receivers), Priority Search Lock Monitor (or simultaneous monitoring), one auxiliary ON/OFF function and two level squelch (or Channel Guard on-off)

1 freq. transmit, 1 freq. receive, repeater disable and two auxiliary (ON/OFF) functions.

1 freq. transmit, 1 freq. receive, repeater disable, one auxiliary (ON/OFF) function and two level squelch (or Channel Guard on-off).

3 and 4 freq. transmit and receive and Channel Guard on-off (or two level squelch or one auxiliary ON/OFF function).

## PARALLEL OPERATION

Up to 10 Tone Controllers may be used in parallel to effectively control a single frequency Tone Remote Base Station (if not otherwise limited by unfavorable telephone line impedance or frequency response). The use of paralleled Tone Controllers in a multifrequency system is permissible, however, function selection and/or status indication will be meaningful only on the last Controller to operate the station.

Up to 5 DC Controllers may be used in parallel to effectively control a single frequency DC Remote Base Station. More than 5 DC Controllers could be paralleled if the user can accept the proportional increase in system attack time which results each time a DC Controller is added.

When any Remote Controller is used in parallel with a Local Controller on a multi-frequency Local/Remote Station, frequency selection (or dual channel monitor or control of other functions) can only be accomplished by the Local Controller.

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## OPTIONS

### DC & TONE MODELS

- 12/24 Hour Electronic Clock
- VU Meter
- Alert Tone
- Control Line Surge Protection Kit
- Power Line Surge Protection Kit
- Line Compensation Kit
- Intercom Kit
- Alternate Line Selection
- Four-wire Audio Kit
- Partial Speaker Mute
- Dual Channel Monitor (for MASTR II stations equipped with 2 receivers or PSLM on a 2-frequency receiver.)
- Digital (Dial) Encoder
- DTMF Encoder



*When either the Dial or DTMF Encoder is utilized, options which otherwise install in the central panel section may not be specified.*

### DC MODELS ONLY

- 2 Channel Control
- Battery Standby Transfer
- Parallel Transmit Indicator
- Supervisory Control
- E & M Signalling

*Note: When E & M signalling is used no other control current functions are available.*

### TONE MODELS ONLY

- 2, 3 or 4 Channel Control
- Two-level Squelch Control
- Channel Guard On/Off Control
- Parallel Transmit Indicator and Notch Filter
- Notch Filter (necessary only when Controllers are operated in parallel)
- Flasher Kit (indicates transfer to Emergency Power)
- Repeater Disable
- Auxiliary ON-OFF Function 1
- Auxiliary ON-OFF Function 2
- Take Over Control

### ACCESSORIES

- Voting Selector Interface
- Extender Board Service Kit
- Adapter for External Decoders & Encoders
- Handset with Hookswitch (exchange)
- Headband or ear-mount Headset
- Headset Adapter Kit
- Boom Microphone (exchange)
- Footswitch
- Step-down Transformer (242/121 VAC, 50/60 Hz, 82.5 watts)



# DESKON II



The DESKON II is a compact remote control accessory which enables the essential functions of a suitably-equipped base station to be remotely controlled over a voice-grade telephone line. It is designed for use in simple systems, or it may serve as a monitoring and PTT "extension" in a complex radio system. Only the number of control functions is limited. Most of the significant benefits, features, styling and flexibility of the more extensive control consoles are also present in the DESKON II.

Models with either DC or Tone control are offered to meet the needs of a moderate range of applications. DC is advocated wherever control lines have DC continuity and up to six remote control functions are required. Tone control is mandatory wherever control lines lack DC continuity. The two control methods available in the various DESKON II models are generally compatible with comparable equipment found in most systems. Common tone frequencies are employed and control current levels are widely adjustable to match levels utilized in existing systems.

The standard DESKON II uses all solid state circuitry with plug-in function and option printed wire boards. The telephone style housing has an attractive, durable plastic case with top-surface mounted volume control, LED transmit indicator and function switches. An ON/OFF switch and the interconnection terminal board are conveniently located on the metal base plate.

All models are provided with two-way compression amplifiers, speaker/microphone, and facilities for intercom. Models may be specified for either desk or wall mounting. An optional transistorized handset may be factory installed for added operator convenience. In such case, the built-in speaker/microphone will perform as usual until the handset is removed from its hookswitch.

A transistorized desk microphone is offered as a factory installed option on desk mount models only. When applied, the internal speaker/microphone function will be disabled and the push-to-talk operation is performed by the PTT bar on the desk mike.

# Other DESKON II Features

## THE "SECUR-IT" TONE

*In tone controlled models, a 2175 Hz tone precedes all function tones and is also used as the transmitter keying hold tone. In the first instance, it provides security against falsing. In keying, because it continues only as long as the PTT bar is depressed, inadvertent transmitter lockup is prevented.*

## DUAL AMPLIFIERS

*A separate compression amplifier is used in the transmit and receive circuits. This holds input and output audio levels essentially constant and independent of control line losses or differing voice levels. In addition, two independent line amplifiers are used for the transmit and receive functions.*

## INTERCOM

*A standard feature included in all DESKON II models. It provides for complete intercommunications with any other remote control or Base Station which is equipped for intercom.*

## BATTERY STANDBY

*DESKON II models with "tone" control have standard provisions for automatic transfer to a 12 VDC emergency power source on failure of the primary AC supply. It will also revert, without operator assistance, to normal operation immediately upon resumption of AC power. No visible indication of such action is required or furnished.*

*DC models may be factory-equipped with an option which provides for manual selection of the normal AC supply or an alternate 12 VDC source.*

*In either case the nominal 12 VDC source must be separately furnished by the user, if such backup is desired.*

## PARALLEL OPERATION

*Up to five DESKON II units may be satisfactorily used in parallel in a single channel system.*

## SELECTOR SWITCHES

*The optional channel selector and Battery Standby switches are the "push-push" type which provide visible status indication by their relative positions. All other switches, where used, are nonlatching. In some cases, blank switches may be installed to substitute for unused functions on the control panel.*

# Options

## DC or TONE MODELS

Handset  
Desk Microphone  
Tone Encoder Adapter Kits  
Tone Decoder Adapter Kits  
Surge Protection Kits  
Step-down Transformer (240/120 VAC, 50/60 Hz)

## DC MODELS ONLY

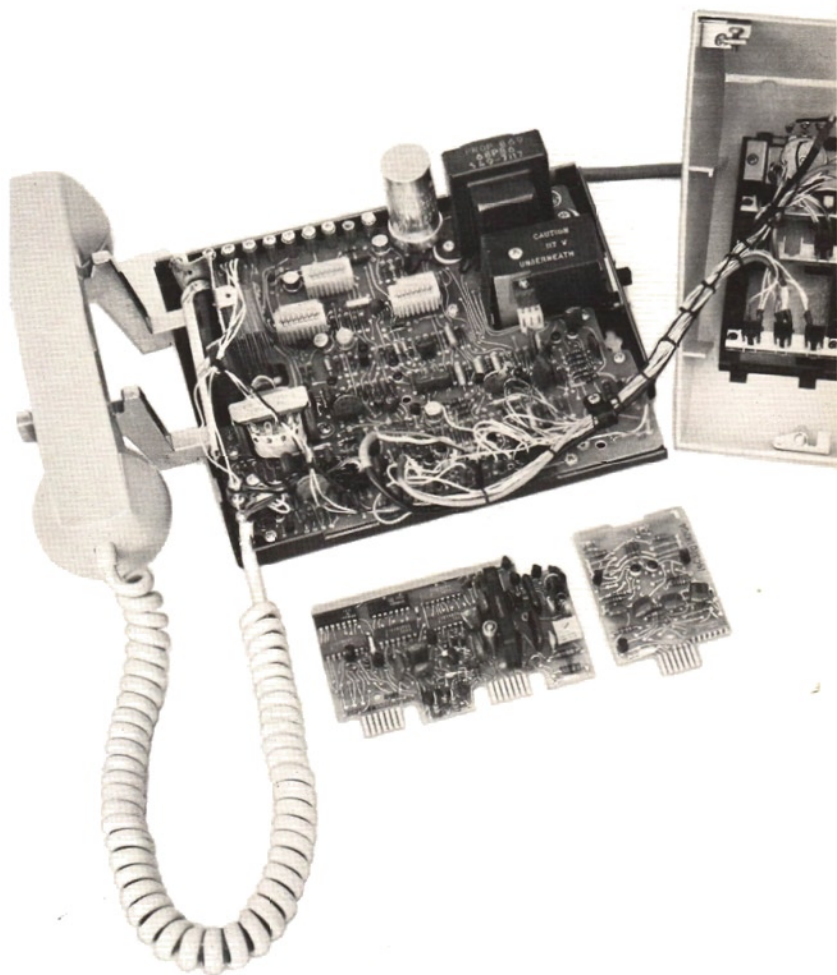
Channel Guard Monitor  
2 Tx and/or 2 Rx Control  
Repeater Disable  
Dual Frequency Monitor  
Battery Standby Transfer  
Supervisory Control (includes parallel transmit indication)

## TONE MODELS ONLY

Channel Guard Disable  
2 Tx Control  
Notch Filter (2175 Hz)

## SERVICEABILITY

All plug-in boards, the power supply and terminal strips are fully accessible by removing the top from the case. It is held in place by just two screws. The entire power supply is separately covered to prevent inadvertent contact with the 115 VAC circuits.





## DESKON II

### GENERAL

<b>Input Voltage:</b>	120 VAC $\pm$ 20%, 50/60 Hz	<b>Dimensions (ins):</b>	4-1/2 H x 9-1/4 W x 7-7/8 D
		<b>(cm):</b>	11.4 H x 23.5 W x 20.0 D
<b>AC Power Input (max. functions):</b>	3.5 W (Tx), 4 W (Rx), 3 W (Stby)	<b>Relative Humidity:</b>	90% at 50°C (122°F)
<b>Maximum Current Drain on Alternate 12 VDC Supply:</b>	300 ma (Tx), 330 ma (Rx), 250 ma (Stby)	<b>Altitude (for shipment):</b>	50,000 ft. (15,250 m.)
<b>Temperature Range:</b>	-30°C to +60°C -22°F to +140°F	<b>Weight (max. functions):</b>	5 lbs. (2.3 kg)
<b>Color:</b>	Beige	<b>Tone Frequencies used in "Tone" Models:</b>	1850, 1950, 2050 & 2175 Hz
		<b>Control currents used in "DC" Models :</b>	-11 to -15, -6, -2.5, +6 and +11 to +15 ma DC.

### PERFORMANCE

<b>Compression:</b>	With audio increase of 30 dB beyond the start of compression output level increases less than 3 dB	<b>Receive Mode</b>	
<b>Distortion:</b>	3% throughout compression at rated output	<b>Sensitivity for threshold of compression:</b>	-20 dBm
<b>Frequency Response:</b>	+1, -3 dB (300 to 3000 Hz)	<b>Audio output:</b>	500 mW @ less than 5% distortion
<b>Transmit Mode</b>		<b>Hum &amp; Noise:</b>	-50 dB (below rated output)
<b>Output:</b>	+11 dBm (600 ohm load)	<b>Longitudinal Balance:</b>	40 dB (over freq. range)
<b>Hum &amp; Noise:</b>	-50 dB (below +11 dBm)	<b>Transformer Hybrid Balance:</b>	60 dB (1000 Hz)
		<b>Terminating Impedance:</b>	600 ohms (150 & 900 ohms Optional)
		<b>Bridging Impedance:</b>	3000 ohms at 300 Hz

### OPTION COMPATABILITY

OPTION	COMPATIBLE WITH							
	"DC" MODELS					"TONE" MODELS		
	1 Tx	1 Rx	1 Tx	1 Rx	2 Tx	2 Rx	1 Tx	1 Rx
Supervisory Control	Yes	No	Yes	No	Yes	No	No	No
Channel Guard Monitor	Yes	No	No	No	No	No	Yes	Yes
Dual Channel Monitor *	No	No	No	Yes	Yes	No	No	No
Repeater Disable *	No	Yes	No	No	No	No	No	No
Battery Standby	Yes	Yes	Yes	Yes	Yes	Yes	(Standard)	

\*Not applicable to Executive II Stations

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# GENERAL ELECTRIC Command Control Centers

## SERIES 2500



The Series 2500 Control Console is a fully integrated package which may be mounted, free standing, on any 60" x 15", or larger surface. Its colors and contemporary styling blend well with standard office furniture. A full line of matching desks, tables, etc., plus full and half size blank turrets are available as options.

The Series 2500 Console has six ports and utilizes modular building block design. This enables the user to custom design his own multi-station control. Channel modules, monitoring modules, encoding modules or compatible switching and control panels may be installed in any one of five console ports to suit the operator's convenience.

The front panel surfaces on the lower three ports are slanted away from vertical to enhance legend readability and provide for comfortable control. The status of each selected function is prominently displayed by large legends in back-lighted, glare-free windows.

The Command Control Panel is usually located in the upper central port. It is equipped with a flexible goose neck microphone, VU meter, electronic clock and two separate speakers.

The principal operator controls are ideally positioned within comfortable fingertip reach with the operator's hand resting on the desk top. The upper right port normally houses the power supply. When located there, the console has a maximum capacity of 20 channel modules. To attain the full 25 channel capacity of the console, the power supply may be removed and installed outside of the console by using an optional harness/chassis kit.

In addition to Channel, Monitor, Encoder and Switch Panels, the console may also be equipped with a Voting Control, Status, Display, Alarm Indicating, Recorder/Playback, Cross Patch, Phone Patch, GE-STAR and/or a Flip-Card Panel as space permits. Other related equipment may be available under special negotiation.

### FEATURES

- Up to 25 Line Capacity
- Tone, DC or E&M Control
- 2, 4 or 6 Wire Line Control
- Back-Lighted Displays
- Changeable Legends
- Plug-In Modules
- All Solid-State
- Built-in capability for cross-muting, total mute, take over and intercom.
- Channel Busy and/or Parallel Transmit Indication
- Standard port openings convertible for EIA rack mounting.
- Sloping Panels
- Fingertip Controls
- Power Failure Indication
- Power On Reset
- Front Servicing
- Field Expandable
- Wide Choice of Options
- Mounts on any flat surface, desk or table.
- Available with a wide selection of matching office furniture.



# SERIES 2500 CONSOLE

## COMMAND CONTROL PANEL

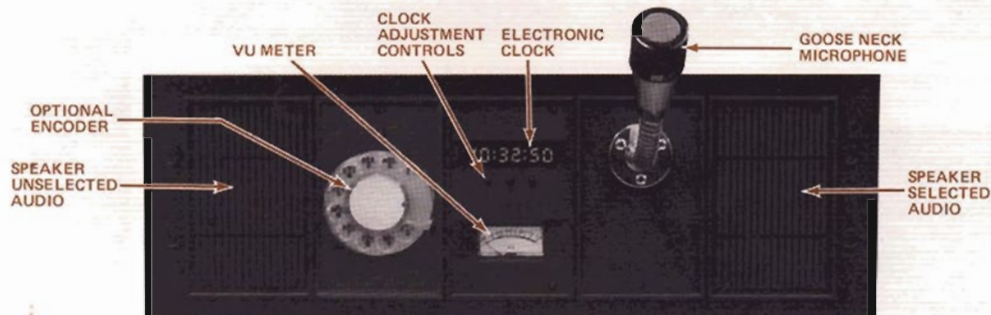


Figure 1

The Command Control Panel has all of the necessary circuitry to handle up to 25 individual transmit/receive modules.

The electronic digital clock has a highly visible

LED display which will hold its reading for 30 seconds during a power outage. It will flash if a power interruption was long enough to warrant an adjustment of time.

## COMMON CONTROL SHELF

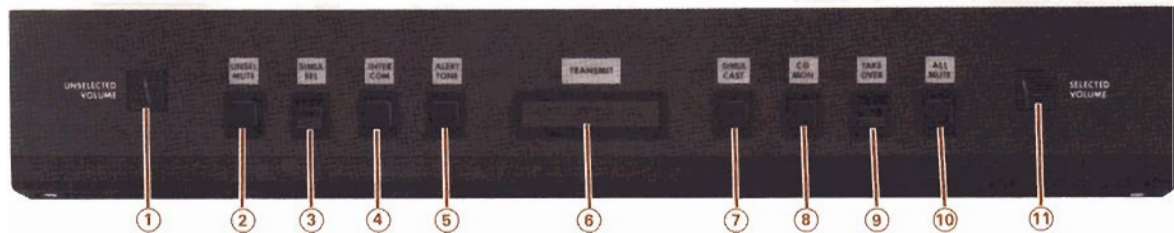


Figure 2

The Common Control Shelf provides fast and positive access to the controls most often used by the operator. All control switches have back-lighted legends above them for function and status identification. The volume controls have curved stripes embossed on their surfaces to give visual indication of volume level. The controls listed below are provided on all consoles:

- ① UNSELECTED VOLUME — Adjust audio level of the receiver of Unselected channels over the range of -30 dBm to +37 dBm.
- ② UNSEL MUTE — An alternate action switch to partially mute audio into the Unselected speaker.\*
- ③ SIMUL SELECT — A two-position switch, which, when activated, enables one or more additional channels to be operated as Selected channels.
- ④ INTERCOM — A momentary action switch used to establish communications between the console and a base station or with parallel consoles.
- ⑤ ALERT TONE — A momentary action switch used to transmit a 1 kHz tone on all Selected channels.

- ⑥ TRANSMIT — A momentary action bar switch used to key the transmitter of a Selected channel or multiple Selected channels.
- ⑦ SIMUL CAST — A momentary action switch which is used to key the transmitters of a pre-established group of channels.
- ⑧ CG MON — An electronically-held switch is used to disable the Channel Guard decoder on the receivers of all Selected channels. The decoder will revert to normal when the TRANSMIT bar is moved.
- ⑨ TAKE-OVER — A two-position switch which, when activated, prevents a parallel control point from keying a Selected transmitter.
- ⑩ ALL MUTE — An alternate action switch used to partially mute the audio of both speakers.\*
- ⑪ SELECTED VOLUME — Adjusts audio level of the receiver on the Selected channel or channels, over the range -30 dBm to +37 dBm.

\*With on/off muting one of both speakers will be muted until the switch is pressed a second time. With timed muting the incoming audio will be muted for a preset length of time after initially pressing the momentary-acting switch.

# CHANNEL MODULES

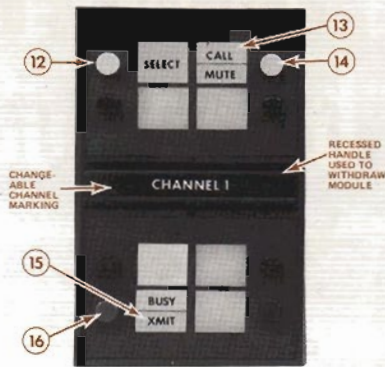


Figure 3

Each module will be equipped with the necessary switches and status displays to control the functions specified for its channel. The module in Figure 3 shows the standard controls supplied, as a minimum, on all Channel Modules. Black, non-operating buttons and unmarked displays are used for blank positions.

- ⑫ SELECT switch, when depressed, activates its Channel Module, routes received audio to the Selected Speaker, enables transmitter to be keyed by the TRANSMIT BAR (Figure 2) and deactivates a previously selected Channel Module.
- ⑬ CALL portion of the split-screen display flashes when audio is present on the incoming line.
- ⑭ MUTE switch, when depressed, partially mutes the received audio on its channel and illuminates the MUTE portion of the display. Available with either on/off or timed muting.
- ⑮ The XMIT half of this display illuminates (in red) when the adjacent red push-button ⑯ is used to key its transmitter or when the TRANSMIT BAR ⑥ (Figure 2) is pushed while the channel SELECT switch ⑫ is activated.

The BUSY, top half of the display will illuminate (in yellow) when its transmitter is keyed by a paralleled console or remote control.

Other control functions available for Channel Modules include two frequency transmit, two frequency receive, Priority Search Lock Monitor, two separate receivers, Channel Guard disable, repeater disable and/or auxiliary ON-OFF switches.

Channel Modules (also called T/R Modules) are available for tone control, DC control or E&M signalling. Up to 5 modules, in any combination, may be installed in a given Channel port. The module's front panel (illustrated above) mounts on printed wire boards which contain all of the module's circuitry. The whole assembly plugs into any one of five slots in the port. A brief version of the Channel Module, with receiver functions only, may be used for monitoring one line via the Unselected Speaker.

# MONITOR MODULES

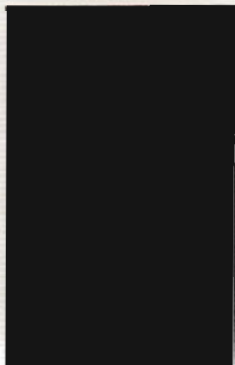


Figure 4

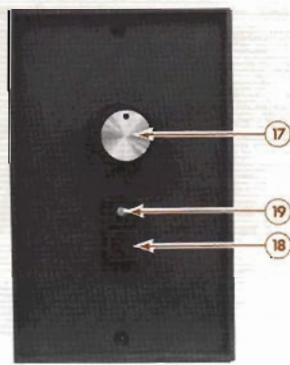


Figure 5

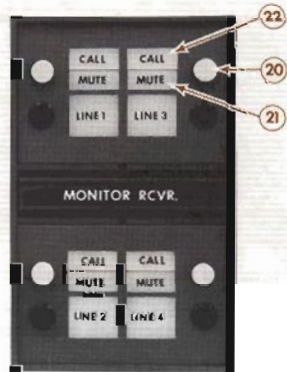


Figure 6

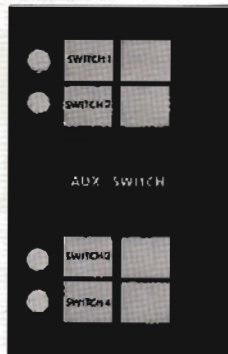
A monitor port, when specified for a console, will have a Common Speaker, Volume/Mute and up to three Receiver-Select Modules. The Volume/Mute Module (Figure 5) provides volume control ⑰ for audio on all connected receivers.

The muting switch ⑱ when depressed, partially mutes the common speaker. The pilot light ⑲ shows when the speaker (Figure 4) is muted.

Receiver-Select Modules (Figure 6) are offered for monitoring either two or four receivers. Each line has individually adjustable input levels. The push-buttons ⑳ are used to selectively mute individual receivers. The lower half ㉑ of each split screen illuminates when its associated receiver is muted. The top half ㉒ of the split screen flashes when audio is present on its incoming line.

With three Receiver-Select Modules, up to ⑫ receiver lines may be monitored.

# AUXILIARY SWITCH AND ENCODER MODULES



A digital encoder, a DTMF encoder and/or one or more Auxiliary Switch Modules may be ordered for signalling or control of external devices. Up to five such modules can be accommodated in a Switch/Encoder Port.

The Auxiliary Switch Module may be supplied with either four or eight alternate action or momentary acting pushbuttons. Each switch has four sets of Form C contacts.

For further flexibility, a digital or DTMF encoder may be installed in the Command Control Panel if a second encoder is needed or should such location be preferred. (See Figure 1).

# OTHER FEATURES

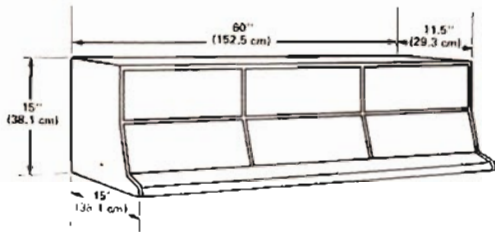
- Each channel module provides individual line conditioning and protection against transients due to lightning.
- All module servicing can be accomplished from the front. Card extenders are supplied for in-circuit testing.
- Recessed handle on front of each module aids in module extraction.
- All modules are normally identified with standard legends. Custom legends are optional.
- The console has 2 microphone inputs, 2 encoder inputs, and an output for recording. Each Channel position has an auxiliary transmit input, an output for recording, inputs for external muting and connections for auxiliary switches.
- Status and function indicators are long life incandescent lamps operating at 75% rated voltage. Lamp filaments are preheated to avoid thermal stress on turn-on.
- Partially equipped channel modules may be easily expanded to full capacity by installing add-on options.



# SPECIFICATIONS

# SERIES 2500 CONSOLE

## PHYSICAL DATA



<b>Console Weight</b>	
Average :	250 lbs. (113 kg)
Shipping :	300 lbs. (136 kg)
<b>Cabinet Material :</b>	Cold rolled steel
Outer Shell :	7 guage
Trim Plates :	14 guage
<b>Module Size :</b>	5½" x 3½" x 10½" (13.9 x 8.9 x 26.7 cm)
<b>Typical Weight :</b>	1½ lbs. (0.75 kg)
<b>Colors</b>	
Outer Shell :	Ash Beige
Trim :	Warm Charcoal Grey

- Back panel of turret removes for access to line input and output terminals.

## COMMAND CONTROL PANEL

- Microphone:** Dynamic cartridge rated 200 ohms impedance from 40 to 15,000 Hz. Mounted on 6" (15.5 cm) flexible gooseneck, chrome plated.
- Microphone Sensitivity:** 10 mv
- Digital Clock:** All solid state with LED display, shows hours, minutes and seconds, 12 or 24 hour registration. Operates on 50 or 60 Hz.
- VU Meter:** Monitors transmit output levels.
- Compression:** Output increases less than 3 dB with an audio input level of 30 dB beyond the knee of compression.
- Audio Output:** 5 watts (into 3.2 ohm speaker)
- Audio Distortion:** Less than 1%, 30 dB in compression.
- Frequency Response:** -3 dB, +1 dB from 300 Hz to 6 kHz (1 kHz reference)
- Hum and Noise:** 60 dB below rated (5W) output

### OPTIONS

- Digital Dial Encoder (1500 or 2805 Hz)
- DTMF Touch Pad Encoder
- Timed muting, adjustable 10 to 120 seconds.
- Headset or handset.
- Remote keying (footswitch, etc.)

## TRANSMIT-RECEIVE MODULES

### TRANSMIT SECTION

- Output:** +12 dBm @ 600 ohms (adjustable)
- Frequency Response:** -3 dB, +1 dB from 300 Hz to 3000 Hz (1 kHz ref.)
- Hum and Noise:** 50 dB below +12 dBm
- Distortion:** Less than 1.5% @ rated output (with 2175 Hz notch filter)
- Aux. Output:** +9 dBm, adjustable (600 ohms or high impedance)

### RECEIVE SECTION

- Longitudinal Balance:** 70 dB @ 1 kHz
- Sensitivity For Knee of Compression:** -30 dBm, max., adjustable
- Input Impedance:** 600 ohms balanced
- Auxiliary Audio Output:** 600 ohms unbalanced
- Compression:** Output increases less than 3 dB with an input level of 30 dB beyond the knee of compression.
- Frequency Response:** -3 dB, +1 dB from 300 Hz to 3000 Hz (1 kHz ref.)
- Hum and Noise:** 60 dB below rated output
- Call Light Sensitivity:** -35 dBm nominal
- Mute Switch:** 10 dB to 40 dB muting, adjustable
- Auxiliary Mute Inputs:** Total mute or 40 dB mute adjustable to 10 dB

### OPTIONS

- Tone or DC Modules**
  - Channel Guard Disable
  - Repeater Disable
  - Timed Mute (Adjustable 10 to 120 sec.)
  - Receive Line frequency compensation network. (Attenuates 400 to 600 Hz.)
  - Form "C" switch
  - 2 Frequency Transmit
  - 2 Frequency Receive
  - Priority Search Lock Monitor
  - Individual volume control
  - Patch Select
- Tone Modules (only)**
  - Auxiliary 1 (on-off)
  - Auxiliary 2 (on-off)
  - Remote parallel transmit detection

## CONTROL SYSTEM

### DC CONTROL

- Power Source:** Constant current
- Control Currents:** ±6, ±11 (or ±15) & -2.5 ma
- Compatibility:** Line-to-line, line-to-ground systems and E&M signalling

### STONE CONTROL

- Control Tones:** 3 sequential tones in the 500 to 2200 Hz frequency range available for all functions.
- Tone Duration:** Less than 245 ms for any function.

## MONITOR MODULES

Input: -30 dBm to 0 dBm @ 600 Ohms

## POWER SUPPLY

- Input Voltage:** 95/145 Vac, 50/60 Hz
- Input Power:** @ 121 Vac 250 watts, nominal
- Output Voltages:** +13.5 VDC (two)  
+24.0 VDC  
±150.0 VDC
- Output Currents:** 7.5 or 13.0 A @ 13.5 VDC  
4.0 A @ 24 VDC  
0.4 A @ 150 VDC
- Regulation (no load to full):** Less than 100 mv @ 13.5 & 24 VDC  
Less than 5.0 @ 150 VDC
- Noise:** Less than 25 mv, peak-to-peak at 13.5 & 24 VDC  
Less than 500 mv, peak-to-peak at 150 VDC
- Overload Protection:** Electronic short circuit protection
- Short Circuit Current Max.:** 3 A @ 13.5 VDC  
1 A @ 24.0 VDC  
0.1 A @ 150 VDC
- Current Limit (threshold):** 13A @ 13.5 VDC  
5 A @ 24 VDC  
0.45 A @ 150 VDC
- Over voltage Protection (Trip point):** 16.5 V ±1.5 V @ 13.5 VDC  
27.5 V ±2.0 V @ 24 VDC  
170 V ±10.0V @ 150 VDC
- Duty Cycle:** Continuous
- An on/off power switch is recessed on the back of the turret.
- An AC convenience outlet is located within the turret for internal power connections.

### OPTIONS

- External transformer for 242 Vac systems.
- Frame for mounting power supply externally.
- Wiring harness for external power supply.

MOBILE RADIO DEPARTMENT  
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GENERAL  ELECTRIC



# GENERAL ELECTRIC Command Control Centers

## SERIES 503



The Series 503 Control Console is a fully integrated package which may be mounted, free standing, on any 60" x 15", or larger surface. Its colors and contemporary styling blend well with standard office furniture.

The Console has three ports and utilizes modular building block design. The left-side port houses the plug-in Channel Modules. Five slots are provided and each can accept a tone, DC or E&M module. Moreover, any module may be installed in any one of the five slots to suit the operator's convenience.

The Command Control Panel is located in the center port. It is equipped with a flexible goose neck microphone VU meter, electronic clock and two separate speakers.

The right-side port houses the power supply.

### THE COMMON CONTROL SHELF

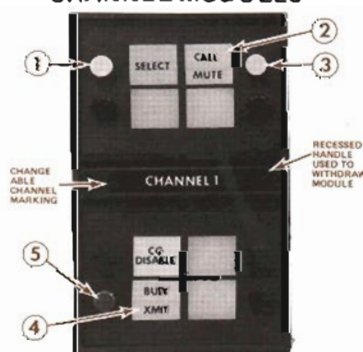
The principle operator controls are ideally positioned within comfortable fingertip reach with the operator's hand resting on the desk top. The controls provided are:

- Unselected Volume
- Unselected Mute\*
- Simulselect
- Intercom
- Alert Tone
- Transmit
- Simulcast
- CG Monitor
- Takeover
- All Mute\*
- Selected Volume

\*On-off muting

All control switches have back-lighted legends above them for function and status identification. The volume controls have curved stripes embossed on their surfaces to give visual indication of volume level.

### CHANNEL MODULES



Each module will be equipped with the necessary switches and status displays to control the functions specified for its channel. The module shows the standard controls supplied on all Channel Modules.

① SELECT switch, when depressed, activates its Channel Module, routes received audio to the Selected Speaker, enables transmitter to be keyed by the

TRANSMIT BAR and deactivates a previously selected Channel Module.

- ② CALL portion of the split-screen display flashes when audio is present on the incoming line.
- ③ MUTE switch, when depressed, partially mutes the received audio on its channel and illuminates the MUTE portion of the display. The channel will stay muted until the button is pushed a second time.
- ④ The XMIT half of this display illuminates (in red) when the adjacent red pushbutton ⑤ is used to key its transmitter or when the TRANSMIT BAR on the Common Control Shelf is pushed while the channel SELECT switch ① is activated.

Switches and legends for other optional functions might include: CG DISABLE, RCVR 1 & 2, TX (F1, F2 or F4), RX (F1, F2, F3 or F4), PATCH ON, AUX 1 ON, AUX 2 ON, REPEAT DISABLE and SWITCH ON.

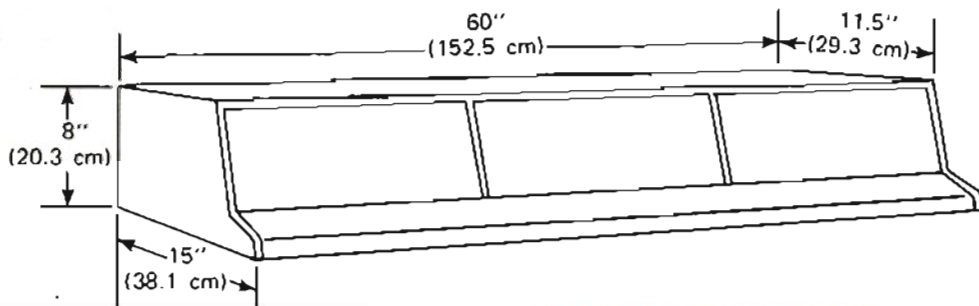
### FEATURES

- Up to 5 Line Capacity
  - Tone, DC or E&M Control
  - Back-Lighted Displays
  - Changeable Legends
  - Plug-In Modules
  - All Solid-State
  - Built-in capability for cross-muting, total mute, take over and intercom.
  - Channel Busy and/or Parallel-Transmit Indication
  - Buffers for Parallel Operation
  - Sloping Panels
  - Fingertip Controls
  - Each channel module provides individual line conditioning and protection against transients due to lightning.
  - Power Line surge protection
  - Power Failure Indication
  - Power On Reset
  - Mounts on any flat surface, desk or table.
  - The console has 2 microphone inputs, 2 encoder inputs, and an output for recording. Each Channel position has an auxiliary transmit input, an output for recording, inputs for external muting and connections for auxiliary switches.
  - Status and function indicators are long life incandescent lamps operating at 2/3rd rated voltage. Lamp filaments are preheated to avoid thermal stress on turn-on.
  - Partially equipped channel modules may be easily expanded to full capacity by installing add-on options.
  - All modules servicing can be accomplished from the front. Card extenders are supplied for in-circuit testing.
- ### OPTIONS
- By remotely locating the power supply, the right side port may be utilized for additional functions, such as, phone patch, cross patch, monitor modules, T/R modules, encoder/switch modules, letter tray, etc.
  - Also available is a full line of color-coordinated blank turrets, status displays & controls, time stamp, recorders and a wide choice of matching furniture.



# SPECIFICATIONS

# SERIES 503 CONSOLE



## PHYSICAL DATA

<b>Console Weight (Shipping):</b>	125 lbs (56.6 kg)
<b>Cabinet Material:</b>	Cold rolled steel
Outer Shelf:	7 gauge
Trim Plates:	14 gauge
<b>Module Size:</b>	5 1/2" x 3 3/4" x 10 1/2" (13.9 x 8.9 x 26.7 cm)
Typical Weight:	1 1/2 lbs. (0.75 kg)
<b>Colors</b>	
Outer Shell:	Ash Beige
Trim:	Warm Charcoal Grey

## COMMAND CONTROL PANEL

<b>Microphones:</b>	Dynamic cartridge rated 200 ohms impedance from 40 to 15,000 Hz. Mounted on 6" (15.5 cm) flexible gooseneck, chrome plated.
<b>Microphone Sensitivity:</b>	10 mv
<b>Digital Clock:</b>	All solid state with LED display, shows hours, minutes and seconds, 12 or 24 hour registration. Operates on 50 or 60 Hz.
<b>VU Meter:</b>	Monitors transmit output levels.
<b>Compression:</b>	Output increases less than 3 dB with an audio input level of 30 dB beyond the knee of compression.
<b>Audio Output:</b>	5 watts (into 3.2 ohm speaker)
<b>Audio Distortion:</b>	Less than 1%, 60 dB in compression.
<b>Frequency Response:</b>	-3 dB, +1 dB from 300 Hz to 6 kHz (1 kHz reference)
<b>Hum and Noise:</b>	60 dB below rated (5W) output

### Options

- DTMF or Dial Encoder (for Control Panel)
- Timed Muting (for Control Shelf)
- Headset Adapter
- Headset
- Foot Switch
- Boom Microphone

## TRANSMIT-RECEIVE MODULES

### TRANSMIT SECTION

<b>Output:</b>	+12 dBm @ 600 ohms adjustable
<b>Frequency Response:</b>	-3 dB, +1 dB from 300 Hz to 3000 Hz (1 kHz ref.)
<b>Hum and Noise:</b>	50 dB below +12 dBm
<b>Distortion:</b>	Less than 1.5% @ rated output (with 2175 Hz notch filter)
<b>Aux. Output:</b>	+9 dBm, adjustable (600 ohms or high impedance)

### RECEIVE SECTION

<b>Line Balance:</b>	70 dB @ 1 kHz
<b>Sensitivity For Knee of Compression:</b>	-30 dBm, max., adjustable
<b>Input Impedance:</b>	600 ohms balanced
<b>Auxiliary Audio Input:</b>	600 ohms unbalanced
<b>Compression:</b>	Output increases less than 3 dB with an input level of 30 dB beyond the knee of compression.
<b>Frequency Response:</b>	-3 dB, +1 dB from 300 Hz to 3000 Hz (1 kHz ref.)
<b>Hum and Noise:</b>	60 dB below rated output
<b>Call Light Sensitivity:</b>	-35 dBm nominal
<b>Mute Switch:</b>	10 dB to 40 dB muting, adjustable
<b>Auxiliary Mute Inputs:</b>	Total mute or 40 dB mute adjustable to 10 dB

### Module Options

- Parallel Transmit Indication
- Individual Volume Control
- Timed Muting
- Frequency Compensation

## CONTROL SYSTEM

### DC CONTROL

<b>Power Source:</b>	Constant current
<b>Control Currents:</b>	$\pm 6$ , $\pm 11$ (or $\pm 15$ ) & $-2.5$ ma
<b>Compatibility:</b>	Line-to-line, line-to-ground systems and E&M signalling

### STONE CONTROL

<b>Control Tones:</b>	3 sequential tones in the 500 to 2200 Hz frequency range available for all functions.
<b>Tone Duration:</b>	Less than 245 ms for any function.

## POWER SUPPLY

<b>Input Voltage:</b>	95/145 Vac, 50/60 Hz
<b>Input Power:</b>	@121 Vac 650 watts, nominal
<b>Output Voltages:</b>	+13.5 VDC +24.0 VDC +150.0 VDC
<b>Output Currents:</b>	7.5 @ 13.5 VDC 4.0 A @ 24 VDC 0.4 A @ 150 VDC
<b>Regulation (no load to full):</b>	Less than 100 mv @ 13.5 & 24 VDC Less than 5.0 @ 150 VDC
<b>Noise:</b>	Less than 25 mv, peak-to-peak at 13.5 & 24 VDC Less than 500 mv, peak-to-peak at 150 VDC
<b>Overload Protection:</b>	Electronic short circuit protection
<b>Short Circuit Current Max.:</b>	3 A @ 13.5 VDC 1 A @ 24.0 VDC 0.1 A @ 150 VDC
<b>Current Limit (threshold):</b>	7.5A @ 13.5 VDC 5A @ 24 VDC 0.45 A @ 150 VDC
<b>Over voltage Protection (Trip point):</b>	16.5V $\pm 1.5$ V @ 13.5 VDC 27.5V $\pm 2.0$ V @ 24 VDC 170V $\pm 10.0$ V @ 150 VDC
<b>Duty Cycle:</b>	Continuous

### Other Power Supply Features

- An on/off power switch is recessed on the back of the turret.
- An AC convenience outlet is located within the turret for internal power connections.
- Back panel of turret removes for access to line input and output terminals.

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WORLD HEADQUARTERS - LYNCHBURG, VIRGINIA 24502

GENERAL  ELECTRIC

# GENERAL ELECTRIC Command Control Centers



The 502 Series Control Console is a fully integrated package which may be mounted, free standing, on any 20" x 15", or larger surface. Its colors and contemporary styling blend well with standard office furniture. A full line of matching desks, tables, etc., are available as options.

The Console has two ports and utilizes modular building block design. The lower port houses the plug-in Channel Modules. Five slots are provided and each can accept a tone, DC or E&M T/R module. Moreover, any module may be installed in any one of the five slots to suit the operator's convenience.

The Command Control Panel is located in the upper port. It is equipped with a flexible goose neck microphone VU meter, electronic clock and two separate speakers.

## SERIES 502

The front panel surfaces are slanted away from vertical to enhance legend readability and provide for comfortable control. The status of each selected function is prominently displayed by large legends in black-lighted, glare-free windows.

### THE COMMON CONTROL SHELF

The principle operator controls are ideally positioned within comfortable fingertip reach with the operator's hand resting on the desk top. The controls provided are:

- Unselected Volume
- Unselected Mute\*
- Simulselect
- Intercom
- Alert Tone
- Transmit
- Simulcast
- CG Monitor
- Takeover
- All Mute\*
- Selected Volume

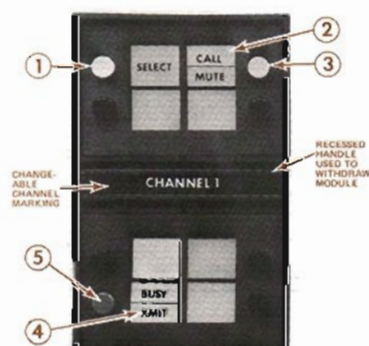
\*On-off muting

All control switches have back-lighted legends above them for function and status identification. The volume controls have curved stripes embossed on their surfaces to give visual indication of volume level.

### THE POWER SUPPLY

An enclosed power supply and a pair of six foot long interconnecting cables are furnished as separate items for remote installation.

### CHANNEL MODULES



Each module will be equipped with the necessary switches and status displays to control the functions specified for its channel. The illustration shows the standard controls supplied on all Channel Modules.

① SELECT switch, when depressed, activates its Channel Module, routes received audio to the Selected Speaker,

enables transmitter to be keyed by the TRANSMIT Bar and deactivates a previously selected Channel Module.

② CALL portion of the split-screen display flashes when audio is present on the incoming line.

③ MUTE switch, when depressed, partially mutes the received audio on its channel and illuminates the MUTE portion of the display. The channel will stay muted until the button is pushed a second time.

④ The XMIT half of this display illuminates (in red) when the adjacent red pushbutton ⑤ is used to key its transmitter or when the TRANSMIT BAR on the Common Control Shelf is pushed while the channel SELECT switch ① is activated.

Switches and legends for other functions might include: CG DISABLE, RCVRS 1 & 2, TX(F1, F2, F3 or F4), RX (F1, F2, F3 or F4), AUX 1 ON, AUX 2 ON, REPEAT DISABLE and SWITCH ON.

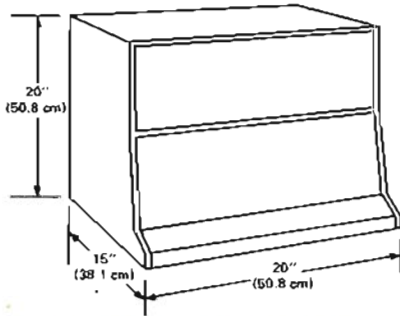
### FEATURES

- Up to 5 Line Capacity
  - Tone, DC or E&M Control
  - Back-Lighted Displays
  - Changeable Legends
  - Plug-In Modules
  - All Solid-State
  - Built-in capability for cross-muting, total mute, take over and intercom.
  - Channel Busy and/or Parallel-Transmit Indication
  - Buffers for Parallel Operation
  - Sloping Panels
  - Fingertip Controls
  - Each channel module provides individual line conditioning and protection against transients due to lightning.
  - Power Line Surge Protection
  - Power Failure Indication
  - Power On Reset
  - The console has 2 microphone inputs, 2 encoder inputs, and an output for recording. Each Channel position has an auxiliary transmit input, an output for recording, inputs for external muting and connections for auxiliary switches.
  - Status and function indicators are long life incandescent lamps operating at 2/3rd rated voltage. Lamp filaments are preheated to avoid thermal stress on turn-on.
  - Partially equipped channel modules may be easily expanded to full capacity by installing add-on options.
  - All modules servicing can be accomplished from the front. Card extenders are supplied for in-circuit testing.
- ### OPTIONS
- A full line of color-coordinated status displays & controls, blank turrets, time stamp, recorders and a wide choice of matching furniture are available as optional equipment.



# SPECIFICATIONS

# SERIES 502 CONSOLE



## CONSOLE DATA

Console Weight (Shipping):	63 lbs (28.0 kg)
Cabinet Material:	Cold rolled steel
Outer Shelf:	7 gauge
Trip Plates:	14 gauge
Module Size:	5 1/2" x 3 1/4" x 10 1/2" (13.9 x 8.9 x 26.7 cm)
Typical Weight:	1 1/2 lbs. (0.75 kg)
Colors	
Outer Shell:	Ash Beige
Trim:	Warm Charcoal Grey

## COMMAND CONTROL PANEL

Microphone:	Dynamic cartridge rated 200 ohms impedance from 40 to 15,000 Hz. Mounted on 6" (15.5 cm) flexible gooseneck, chrome plated.
Microphone Sensitivity:	10 mv
Digital Clock:	All solid state with LED display, shows hours, minutes and seconds, 12 or 24 hour registration. Operates on 50 or 60 Hz.
VU Meter:	Monitors transmit output levels.
Compression:	Output increases less than 3 dB with an audio input level of 30 dB beyond the knee of compression.
Audio Output:	5 watts (into 3.2 ohm speaker)
Audio Distortion:	Less than 1%, 60 dB in compression.
Frequency Response:	-3 dB, +1 dB from 300 Hz to 6 kHz (1 kHz reference)
Hum and Noise:	60 dB below rated (5W) output

## CONTROL SYSTEM

### DC CONTROL

Power Source:	Constant current
Control Currents:	$\pm 6, \pm 11$ (or $\pm 15$ ) & $-2.5$ ma
Compatibility:	Line-to-line, line-to-ground systems and E&M signalling

### TONE CONTROL

Control Tones:	3 sequential tones in the 500 to 2200 Hz frequency range available for all functions.
Tone Duration:	Less than 245 ms for any function.

## POWER SUPPLY (Remote)



Dimensions Enclosure:	7" x 20" x 12" (17.8 x 50.8 x 30.5 cm)
Cables:	6' (1.83 m)
Weight:	47 lbs. (21.3 kg)
Input Voltage:	95/145 Vac, 50/60 Hz
Input Power: @121 Vac	650 watts, nominal
Output Voltages:	+13.5 VDC +24.0 VDC +150.0 VDC
Output Currents:	7.5 @ 13.5 VDC 4.0 A @ 24 VDC 0.4 A @ 150 VDC
Regulation (no load to full):	Less than 100 mv @13.5 & 24 VDC Less than 5.0 @ 150 VDC
Noise:	Less than 25 mv, peak-to-peak at 13.5 & 24 VDC Less than 500 mv, peak-to-peak at 150 VDC
Overload Protection:	Electronic short circuit protection
Short Circuit Current Max.:	3 A @ 13.5 VDC 1 A @ 24.0 VDC 0.1 A @ 150 VDC
Current Limit (threshold):	7.5 A @ 13.5 VDC 5 A @ 24 VDC 0.45 A @ 150 VDC
Over voltage Protection (Trip point):	16.5V $\pm 1.5$ V @ 13.5 VDC 27.5V $\pm 2.0$ V @ 24 VDC 170V $\pm 10.0$ V @ 150 VDC
Duty Cycle:	Continuous

## TRANSMIT-RECEIVE MODULES

### TRANSMIT SECTION

Output:	+12 dBm @ 600 ohms adjustable
Frequency Response:	-3 dB, +1 dB from 300 Hz to 3000 Hz (1 kHz ref.)
Hum and Noise:	50 dB below +12 dBm
Distortion:	Less than 1.5% @ rated output (with 2175 Hz notch filter)
Aux. Output:	+9 dBm, adjustable (600 ohms or high impedance)

### RECEIVE SECTION

Line Balance:	70 dB @ 1 kHz
Sensitivity For Knee of Compression:	-30 dBm, max., adjustable
Input Impedance:	600 ohms balanced
Auxiliary Audio Input:	600 ohms unbalanced
Compression:	Output increases less than 3 dB with an input level of 30 dB beyond the knee of compression.
Frequency Response:	-3 dB, +1 dB from 300 Hz to 3000 Hz (1 kHz ref.)
Hum and Noise:	60 dB below rated output
Call Light Sensitivity:	-35 dBm nominal
Mute Switch:	10 dB to 40 dB muting, adjustable
Auxiliary Mute Inputs:	Total mute or 40 dB mute adjustable to 10 dB

### Module Options

- Individual Volume Control
- Timed Muting
- Parallel Transmit Indication
- Frequency Compensation
- 4 Wire Control

### Accessory Options

- Headset Adapter
- Headsets
- Boom Microphone
- Footswitch

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