

Model 284 Multi-Line Tone Remote

Spec Sheet



INTRODUCTION

The Zetron Model 284 Multi-line Tone Remote is a four-line, multifunction, EIA compatible, tone remote radio controller for multiple base station control. It features an available built-in paging encoder for selective calling of tone-only pagers, tone+voice pagers and mobiles. Selective calling supports 2-tone, 5-tone, DTMF, 2805/1500 pulse, stack page, and a 50 user page-by-name database. A PTT handset, built-in microphone and speaker are included. Line select keys include VOX, Transmit, and Select indicators. Audio from the unselected lines is summed at a user adjustable level. For applications with less than 4 lines, unselect audio may be routed to an external amplified speaker.

The unit is fully configurable via PC by the dealer. It includes nine programmable keys that may be assigned selected functions. The available selections include; Single frequency select (F1-F8), Double frequency select (F1/F2), Coded/Clear, Intercom, Privacy, Repeat on/off, Rx2 Mute on/off, PL1, PL2, PL3, PL4, Wild I, Wild II, Supervisor takeover, Mute, Unselect mute, 5-beep alert, High/lo alert, Siren alert, Fast siren alert, Steady alert, Off-Hook Speaker Mute, Hook Disable, Call Decoder Mute, Monitor, and Transmit.

BASE STATION CONTROL

- Tone remote control of up to four base stations
- Up to 8 frequency control (F1-F8) plus monitor and other functions
- Audio from each unselected line is summed at an adjustable level
- Separate unselect audio may be routed to an external powered speaker when using 3 or less base stations
- 2-wire line interface for up to four base stations
- 4-wire line interface
- Supervisor control output

PARALLEL OPERATION

- Sets the industry standard for parallel remote capacity
- Parallel status feature enables each remote to display the actual radio mode for all base stations
- Line operated transmit light (LOTL) shows actual transmit status of each base station
- Audio may be muted during parallel transmit for selected units to prevent acoustic feedback
- Intercom capability between remotes
- "Privacy" mode may be engaged to mute and lockout other Zetron Model 284 remotes for sensitive conversations
- Call Decoder feature allows calls to be routed to individual remotes when used in conjunction with a Zetron H.E.A.R. Decoder

Available Functions

<i>Frequency select F1-F8</i>	<i>Coded/Clear</i>	<i>Repeater on/off</i>	<i>2nd receiver mute</i>
<i>PL1</i>	<i>PL2</i>	<i>PL3</i>	<i>PL4</i>
<i>Wildcard #1</i>	<i>Wildcard #2</i>	<i>Supervisor takeover</i>	<i>Alert (beep)</i>
<i>Alert (warble)</i>	<i>Alert (slow siren)</i>	<i>Alert (fast siren)</i>	<i>Alert (steady tone)</i>
<i>Mute (or partial mute)</i>	<i>Unselect mute</i>	<i>Intercom</i>	<i>Privacy</i>
<i>Off-Hook Speaker Mute</i>	<i>Hook Disable</i>	<i>Call Decoder Mute</i>	

USER INTERFACE

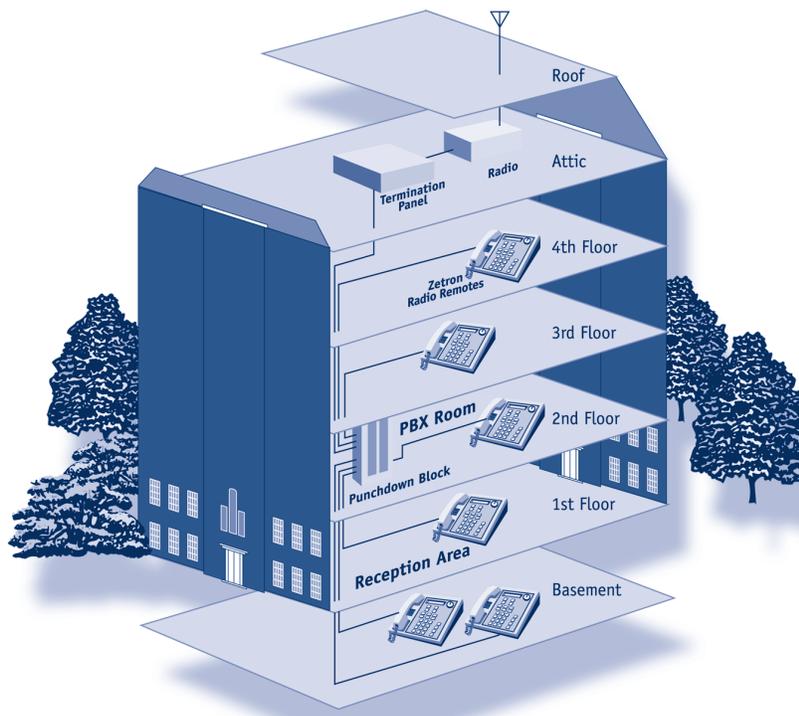
- Compact desktop or wall mount unit
- Up to 82 text aliases eliminate operator confusion and simplify training. Each frequency of every line, as well as 50 pagers, may be assigned an alphanumeric name to allow positive confirmation of selection.
- Nine PC programmable keys allow the installer to tailor the unit to the application
- 12/24 hour battery backed clock
- VU meter shows transmit and receive audio levels
- Line select/unselect keys for each base station with LED indicators
- VOX indicators show audio activity for each base station
- Unselect line volume is adjustable per base station
- Unselect mute allows operator to disable nonessential audio
- Handset hookswitch may send function tones when lifted or hung up

HIGH QUALITY AUDIO

- Digital audio processing lets the user begin speaking immediately, even while the function tones are being sent (InstanTalk™ circuit)
- Built-in front panel microphone, and speaker
- PTT handset included for semiprivate conversations
- Accessory audio interface port accommodates external desk mic, PTT footswitch, headset, auxiliary transmit audio, and external powered speakers
- Parallel function tone muting removes annoying chirps from other remotes
- Automatic audio leveling, 600/6000 ohm transformer coupled two or four wire interface

PAGING ENCODER

- Multi-format paging encoder supports Two-tone, DTMF, Five-tone, and Pulse dial selective calling
- Page-by-name database lets the operator scroll through a list of users to initiate paging
- Automatic frequency select when paging from database, uses the selected frequency or a specific frequency to prevent missed calls
- Programmable equalization curves and level per format ensure proper operation on the radio channel
- Selectable alert tones and talk time per format
- Stack page for up to 10 lists of 10 pagers expedite selective calling for critical applications



Multiple remotes can utilize a single base station.

PROGRAMMABLE ITEMS *(not all items shown)*

Guard tone frequency:	2100, 2175, 2325, 2600, 2800, or 2970 Hz. Guard tone notch will follow.
High level guard tone:	120 mSec default, selectable 0 to 900 mS. Tx audio delay will follow.
Low level guard tone:	Continuous during transmit.
Function tone duration:	40 mSec default, selectable 0 to 250 mSec. Tx audio delay will follow.
Clock display:	On / off, 12/24 hour format, time set. Displays Hours:Minutes
VU meter display:	On / off. Two selectable bar graph styles.
Function frequencies:	650, 750, 850, 950, 1050, 1150, 1250, 1350, 1450, 1550, 1650, 1750, 1850, 1950, or 2050 Hz.
Monitor frequency:	Any function frequency.
PL strip frequency:	Any function frequency.
Rx audio delay:	On/off. Mutes parallel remote function tones
Tx audio delay:	On/off. Allows user to begin speaking while function tones are sent.
Text Aliases:	16 character names for each frequency select (F1-F8) on each line and for each of up to 50 pager capcodes in database.

PAGING

Database:	50 entries maximum, 10 digit capcodes, 16 character display labels. Each entry may be any valid capcode and be preset to a specific frequency (F1-F8) or use the selected transmit frequency. Up/Down keys allow operator to scroll through entries.
Stack page:	Up to 10 stacks of up to 10 capcodes each
Formats:	2-tone 100 call, 2-tone 1000 call, 1 to 8 digit DTMF, 5/6 tone sequential, and pulse dial format
Tone+Voice talk time:	5 second default, selectable 1 to 60 seconds. May be extended by holding "transmit" during talk interval, or canceled by pressing "transmit" during talk interval
Keyup delay:	750mS default, selectable 250 to 2000 mS
Stack page gap:	500mS default, selectable 250 to 2000 mS.
Paging tones:	Selectable gain and equalization curves for each format.

FUNCTION KEYS

Nine programmable keys may be assigned a specific function. The top row of four keys include red and green LEDs to indicate selected status. They would typically be used when more than 4 frequencies (F1-F4) are required. The second row of four programmable keys include a single red led to indicate status. Different function tones may be sent for "toggle" keys such as coded/clear, the LED will show the current selected function. The additional pro-

grammable key is typically used for Monitor. The nine programmable key functions are as follows; Single frequency select (F1), double frequency select (F1/F2), Coded/Clear, Intercom, Privacy, Repeat on/off, Rx2 Mute on/off, PL1, PL2, PL3, PL4, Wild I, Wild II, Supervisor takeover, Mute, Unselect mute, 5-beep alert, High/lo alert, Siren alert, Fast siren alert, Steady alert, Off-Hook Speaker Mute, Hook Disable, Call Decoder Mute, Monitor, or Instant Call.

SPECIFICATIONS

Power:	8.5-11 VAC or 11-15 VDC, 650mA maximum, 300mA nominal. Optional wall transformer.	Parallel status:	Decodes parallel remote encoded functions and displays current station status of selected line. Unselected line status is monitored in background and updates when the line is selected.
DC Standby Power:	Connection for standby power, 11 - 15 VDC, 650mA maximum	Selective calling formats:	2-tone, DTMF, Pulse dial, and 5/6-tone. Includes leading digit multi-format selection, strapped digits, alert tones, tone-only or tone+voice per format. Selectable gain and equalization curves per format.
Connections:	Power supply, standby power, line interface (2 or 4-wire), PTT open drain output, supervisor open drain output, external PTT input, external audio input, external speaker output, ground. Screw terminal connectors.	Filters:	Tx notch filter removes guard tone components from microphone audio, Rx notch filter removes guard tone from speaker and handset audio. Filters and intelligent audio processing may be enabled so that parallel remote function tones are not heard.
Operating Temp.:	0° to +60° Celsius. 95% relative humidity @ +50°C (non-condensing)	Tx audio delay:	Selectable on/off. When enabled, delays microphone audio during guard and function tone transmission.
Size / weight:	8.3"W x 4.4"H x 9.5"D. 4 pounds	Rx audio delay:	Selectable on/off. When enabled, delays speaker and earpiece audio so that parallel remote function tones may be detected and muted.
Adjustments:	Transmit level trim for each line	Line type:	2-wire or 4-wire leased line voice grade audio circuit, or copper connection
Indicators:	2 line by 16 character LCD indicates station status, real time clock, transmit and receive VU, paging capcode entries, and operating prompts (paging, talk, etc.). Text aliases (names) up to 16 digits may be assigned to each frequency of each line (F1-F8 on up to 4 lines, 32 labels). VOX, Select, Transmit and LOTL indications for each line. Master Transmit LED, Monitor LED, program mable LEDs per switch function	Line connector:	Screw terminals
Controls:	Volume, transmit, monitor, 16 digit keypad for paging, clear, 9 assignable keys	Audio input:	600 ohm or 6000 ohm impedance, accommodates line losses up to 20 dB
Microphone/speaker:	Built-in electret mic for use with front panel transmit and intercom, front panel speaker active while handset is on-hook. Telephone style handset with PTT switch included for semi-private conversations. Handset sidetone generated during transmit. Includes automatic gain controls for improved audio levels.	Audio output:	Adjustable up to +12 dBm into 600 ohm.
Configuration	Via PC with programming adapter, cable, and software (optional)	Distortion:	< 2% at full output. Signal-to-Noise > 50 dB. Hum, Cross-Talk all -50 dB at full output
Data retention:	Nonvolatile EEPROM	Frequency response:	-3 to +1dB from 250 to 3000 Hz (except guard tone notch)
Functions:	Assignable function tone frequencies from 650 to 2050 Hz; Single frequency select (F1-F8), Double frequency select (F1/F2), Coded/Clear, Intercom, Privacy, Repeat on/off, Rx2 Mute on/off, PL1, PL2, PL3, PL4, Wild I, Wild II, Supervisor takeover, Mute, Unselect mute, 5-beep alert, High/lo alert, Siren alert, Fast siren alert, Steady alert, Off-Hook Speaker Mute, Hook Disable, Call Decoder Mute, Monitor, and Transmit	Compression:	Input level increase of 30 dB above the knee of compression causes < 3 dB output increase
		TONE LEVELS	
		High level Guard:	+3 dB relative to maximum audio level (typically 10 dBm)
		Low level Guard:	-30 dB relative to high level guard tone (typically -20 dBm)
		Guard tone Notch:	-50 dB, removes guard tone from transmit audio
		Function tones:	10 dB below high level guard tone (typically 0 dBm)
		Tone accuracy:	0.5 Hz



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