



advanced
computer
controls, inc.



RC-96 Repeater Controller

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Description

The **RC-96 Repeater Controller** is the perfect state-of-the-art addition to your new or existing repeater. It has capabilities pioneered by ACC in our RC-850 and RC-85 controllers, including synthesized speech, remote programming, autopatch/autodial, remote base, and more. And it's packaged as a compact, easy to hook up and easy to operate unit, with built-in keypad, display, and speaker driver.

Synthesized speech is the way your repeater will talk to you and your users. But why would you want your repeater to talk? Because *voice* is the most natural way to communicate.

How does speech benefit your repeater's operation? ID messages in speech are easy for anyone to understand. Anyone tuning across the band will know what repeater they're listening to. But that's just the beginning - our giant, custom "ham" speech vocabulary includes scores of special words like net, meeting, hamfest, club, days of the week, months of the year, and many more so that your ID messages can be *informative!* Remind users of your club's activities. Welcome new users. Suddenly your repeater has a personality of its own ... and it's *friendly!*

The '96 can say much more than what you tell it to say because it has a mind of its own. Diagnostics for your users include its Touch-Tone pad test and talking S-meter to let your users check out their equipment with voice response from the repeater. Wonder how well you're getting in? Press a couple of buttons and hear "S9 plus twenty". Or check out your Touch-Tone pad with the RC-96 controller's Pad Test.

Your new '96 controller also confirms receipt of commands in synthesized speech. Verifying phone numbers and frequency entry for the remote base, and acknowledging Control Operator commands are just a few of the things it will recite.

Of course, the '96 is fluent in Morse code as well, at nearly any speed and pitch you'd like.

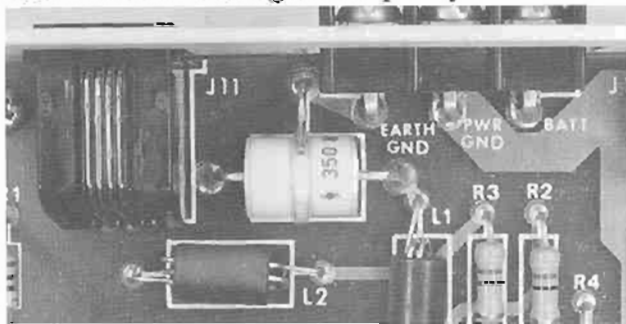
Remote programming of your repeater is a technology introduced by ACC in our RC-850 controller. Remote programming brings out the best in synthesized speech, with our easy to use, interactive Touch-Tone activated message editor. Your callsign ID messages, tail messages, and the Bulletin Boards let you post information for your users. And the nearly 500 word vocabulary makes it easier than ever to construct phrases and sentences that say what you want.

Remote programming of command codes lets you change them any time you like for the security you need - without a trip to the hill or a trip back to the factory. And remotely programmable autodial numbers make it easy to keep up with your users as they move and as new members join. Many of the controller's timers can be changed to suit your style of operation, and you can select from a "palette" of courtesy tones. All from over the air, through a control receiver, or over the phone. Convenience and custom tailoring - made possible by remote programming.

But what happens to what you've programmed if you "pull the plug"? Absolutely nothing! It's been stored in a reliable non-volatile memory - an Electrically Erasable PROM (or E²PROM), so nothing is lost. No batteries, no Personality PROMs, just the utmost in simplicity. And security offered by your own secret (but changeable) unlock code.

The **Autopatch and Autodial** capabilities of the RC-96 controller give you and your group the ultimate in convenience, ease of operation, and reliability. Imagine being able to load your home phone number into the controller's memory - it just takes a few seconds from your Touch-Tone pad. Then imagine being able to load 200 numbers, all stored reliably in E²PROM. But there's even more. Emergency service numbers may be stored in ten special Emergency Autodial slots which read back a message when activated - like "Police" or "County Fire". Ease of entry and confirmation of the right command mean quick, safe, reliable public service patches.

The RC-96 controller regenerates signalling into the phone line for reliable operation - no fluttery mobile tones to confuse the phone company. Dialing in rotary, or quick DTMF - your choice. With half or full-duplex operation. And audio agc for constant levels regardless of the phone line characteristics. Top quality components and careful design result in outstanding audio quality.



Three-terminal gas discharge tube protects against lightning hits on the phone line.

Description/Specifications

The RC-96 controller protects your phone bill with its selectable toll restrict. Extensive programmable timers to suit your style of operation. And a reverse patch is accessible from the phone.

Then there's the **remote base** capability which allows you to attach a transceiver to your repeater, controllable by users with Touch-Tone commands. The remote base allows linking your repeater to other repeaters and simplex frequencies from the repeater site. Link repeaters for nets and public service activities; carry around just one rig to work more than one band; even work 10 meter DX from your *handheld!* Control the frequency and mode with Touch-Tone commands, with synthesized speech readback.

The RC-96 controller is crammed with even more features, including **CTCSS access and control modes**, a selectable **spare audio input** for a monitor receiver, and provisions for a separate **control receiver**. A **site alarm** activates the repeater with a programmable message on alarm condition, providing security for your site. And **paging** means you don't have to be listening to be available - your friend can activate your pocket pager from his Touch-Tone pad by entering your three digit pager number.

The RC-96 controller is supplied in an attractive rack mount enclosure. The keypad and a local speaker allow you to program the '96 before it's installed in your repeater. Then it **interfaces easily** to any repeater - just connect push-to-talk, carrier-operated-switch, receive and transmit audio from the supplied shielded DIN cable. Connect to the 12 volts already available in your system (the RC-96 controller is designed for **low power drain**), plug it into the phone line and you're done in minutes! The front panel display helps verify proper hookup and operation. The RC-96 controller is easy to hook up, and **easy to learn**, with its comprehensive, easy to read manual, including index, glossary, and lots of examples.

ACC doesn't forget about you after you buy your '96 - our free technical support line is available for assistance. And our free newsletter, *ACC Notes*, helps owners share ideas about how to get the most out of their controllers.

The '96 is compatible with ACC's **family of repeater control products**, including our Digital Voice Recorder. The DVR lets you remotely record the various programmable messages in your '96. It also provides a voice mailbox for your users, from over the air and over the phone. The '96 and DVR make an unbeatable pair!

In the world of repeater control, only ACC's RC-850 controller offers higher performance. And in the RC-96 controller's price range, *nothing else comes close.*



Level adjustments and DIP switches are readily accessible at the rear panel. Shielded DIN cables make hookup easy and clean, and prevent rfi.

Specifications

Microprocessor 8085AH

Memory Total 96K byte
EPROM - 80K byte
E²PROM - 8K byte
RAM - 8K byte

Logic Inputs Low 0 to .8 volts
High 2.4 to 15 volts

COS, Link COS, Control Receiver COS,
CTCSS, Courtesy Tone select,
Site Alarm, Phone Line Busy

Logic Outputs Open collector, 60V, 500mA
PTT, Link PTT, Control Outputs
(3, expandable to 8), Serial Output

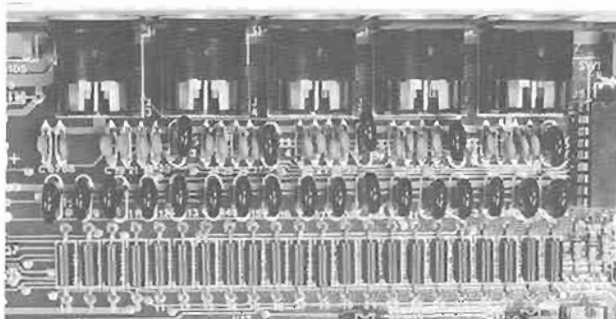
Audio Inputs Receiver, Link Receiver,
Control Receiver, Spare (adjustable
levels)

Audio Outputs Transmitter Audio
(adjustable level)

Operating Temperature -15 to +55°C

Power 11.5 to 15V, 250 mA

Cabinet Size 19" rack mount, 1.75" high,
7" deep, adjustable mounting ears



Transient protection and filtering on every input and output signal protect against lightning damage and rfi.

Features/Options

Standard Features

- Complete stand-alone repeater controller**
- Remotely programmable with Touch-Tone commands**
 - Messages – ID's, tails, Bulletin Boards, phone answer, etc.
May be CW, synthesized speech, or DVR tracks (w/Digital Voice Recorder)
 - Morse code parameters – Speed – 12-30 WPM; Pitch – dc-3000 Hz
 - Control Op and user command codes (19 prefix groups, up to 7 digits each)
 - Courtesy tone selection (from 10 predefined sets)
 - Timers – 10 sets, 0-30 minute with 1 second resolution
 - Autodialer numbers (200)
 - Pager memories (1000)
 - Non-volatile E²PROM storage (no batteries)
- Natural sounding speech synthesizer** for effective user/repeater interface
 - Custom ham/repeater/public service vocabulary of nearly 500 words
 - Letters, numbers, phonetic alphabet
 - Amateur radio terms – club, net, meeting, hamfest, amateur, etc.
 - Days of the week, months of the year
 - Weather, emergency, and public service words
 - Easy to use interactive message editor
- Autopatch / Autodial** PENDING
 - FCC registered telephone interface
 - Store/forward, DTMF or rotary
 - Full or half-duplex
 - Optional phone number readback for confirmation before dialing
 - User Loadable Autodial (190 numbers)
 - Emergency Autodial (10 numbers) with message readback
 - Toll restrict – leading 1/0 and digit count
 - Cover tone for semi-private patches
 - Programmable overall timer and activity timer with warning warble
 - Paging, ringout, control from the telephone line
 - Three-terminal gas discharge tube for effective lightning protection
- Reverse patch**
- Talking S-Meter** for user signal strength readings from the repeater
- Paging** – two-tone sequential, five-tone sequential; 1000 pager memories
- Remote base** transceiver control – commandable frequency and mode (BCD type “thumbwheel” transceivers)
- CTCSS access and control modes** (with Tone Panel option or external CTCSS decoder)
- Touch-Tone access mode** with programmable timeout
- Remote control logic outputs** – 3 expandable to 8
- Low distortion computer synthesized tone generation**
- Courtesy Tones** – 10 selectable sets
- Noise and kerchunker filtering**
- Touch-Tone muting**
- Control receiver provisions**
- Site Alarm logic input**
- Intelligent ID algorithm** – automatically selects from up to 7 programmable ID's
- Tail messages** – 3, programmable repetition rate
- Command acknowledgement** with unique messages
- Low power, single supply operation** with built-in battery backup circuitry
- Attractive 19" rack mount enclosure** with adjustable mounting ears
- Front Panel Keypad**, rear speaker jack for easy local programming
- Proven reliability** designed in, with watchdog timer, voltage monitoring circuitry, extensive lightning protection, conservative design
- Compatible with ACC's Digital Voice Recorder**
- Manual and free telephone technical support**

Options

- CTCSS Tone Panel (Encoder/Decoder)** – up to 8 remotely selectable tones from EIA standard 37 frequencies plus 97.4 Hz
- AD-1 Audio Delay "Piggyback Board Kit"** – to *fully* mute Touch-Tone and squelch tails
- FC-1 Frequency Control Board** – for frequency control of BCD remote base transceivers and remote control output expansion