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### ACC NOTES

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**NEW PRODUCT!** Advanced Computer Controls is proud to announce the RC-85 Low Cost Repeater Controller Board. The RC-85 is a scaled down, simplified version of its RC-850 "big brother". The control board offers built in speech synthesis, limited remote programming, and a full featured autopatch at a cost comparable to a collection of "dumb" control boards. It provides the complete interface between the repeater's receiver and transmitter.

The autopatch features autodial, long distance protection, optional phone number readback, DTMF or dial pulse regeneration, and reverse patch.

Some of the operating parameters of the RC-85 control board may be changed remotely with Touch-Tone commands, including ID and tail messages with its built-in message editor, command codes, and autodial numbers. Storage is in write protected RAM. An optional fully documented Personality EPROM allows the repeater owner to define a backup set of parameters independent of the firmware for use in case power is lost. Built-in diode switching allows easy battery backup.

High-quality, natural sounding speech synthesis including a portion of ACC's custom repeater vocabulary is built-in. Together with the control board's Touch-Tone activated message editor, ID and tail messages can be made informative, reminding users of nets, meetings, and special events, or informing users of repeater status.

An alarm logic input provides the repeater owner with a site alarm to enhance security of his installation.

The RC-85 repeater control board design is based on the field proven RC-850 controller, and maintains the same level of quality of engineering and construction. It uses CMOS circuitry (no TTL) for low power consumption from a single +12 volt supply. All ICs are socketed in high reliability machine contact sockets.

The control board is a compact 6"x9" for easy integration into any repeater.

Availability: July

Price: \$849

RC-850 CONTROLLER ON W1AW REPEATER - Pete O'Dell, KB1N, reports that an RC-850 Repeater Controller provided for review in QST is now operational on the League's 2 meter repeater. W1AW Repeater operates on 145.45 MHz. Look for a product review in QST late in the year. The RC-850 controller has already been reviewed by 73 Magazine, in the January, 1983 issue. Contact us for a copy of the review if you missed that issue of 73 Magazine.

## ANSWERS TO THE MOST OFTEN ASKED RC-850 QUESTIONS -

\* What is the difference between the FCC registered and non-registered telephone interfaces? The FCC registered interface uses a Novation Phone Line Interface Module which is FCC registered, which means that the controller is considered registered. The non-registered board uses a separate transformer, relay, and opto-coupler in place of the Novation module to perform the identical function at a lower cost, but it isn't FCC registered. The non-registered board uses components, however, which meet Part 68 FCC specs.

\* Can I add the voice later? The Voice Response Telemetry option, as well as any of the other options can be easily added in the field later. For example, the VRT board mounts inside the cabinet with just a single ribbon cable interconnect to the main controller board. Easy upgrade means you can start out small, and grow up to the full blown controller as you can afford it.

\* Do I need the Front Panel Display? No. But it's nice to be able to get a picture of the operation of the repeater system. About 15% of owners do not have the display. The cabinet version without the display option has a plain front panel with only power switch, power indicator, and reset switch.

\* Does it have reverse patch? Yes. When someone calls the repeater on the phone, it answers with a message, like "WA6AXX, control". The caller then has 10 seconds to enter the reverse patch command, which may specify the call of the repeater user he's looking for. The repeater then calls that user in voice and rings until it's answered.

\* I can't afford that much for a controller - can you help me? First, the RC-850 controller is available with much of its capability for only \$1195. You can save money by buying boards and using your own cabinet instead of ours. You may have an old autopatch which you can use instead of our Telephone Interface Board. You don't really need the Front Panel Display, and you can add the voice later. Finally, if you just want a simple high quality, state-of-the art controller without alot of the 850's features, the new RC-85 may be for you.

\* How long does it take to get one? We quote delivery at 4-6 weeks normally, but it will probably stretch out shortly after Dayton, so get your order in as soon as possible. It's normal to be impatient, but once you get your controller, you'll have so much fun that you'll quickly forget about the wait!

\* How long is ACC going to be around? For a long, long, time! Unfortunately, several small companies have sold repeater control equipment to hams, but they haven't stayed around long enough to support their products. These were largely part time, hobby enterprises. ACC is a REAL, growing company in the heart of Silicon Valley, California. Our engineering is done in-house - we don't have our products designed by "consultants", or college students. We're actively developing new products for the amateur market, and are applying our unique technology mix to new markets to help us grow.

**WANT A WEATHER STATION AT YOUR REPEATER? -** The RC-850 controller provides talking meter readback for lots of different parameters, including wind speed and direction, temperature, etc. The problem with weather parameters is that reading back instantaneous information isn't the most relevant, and wind and pressure sensors are tricky. If enough people are interested, we'll get a Heathkit ID-4001 Digital Weather Computer, and try to work out a standard interface to the RC-850 controller for the next major software release.

It's fun to know what the weather conditions are at the site, and the information can be valuable in analyzing system problems. Mike Penrose, WB6BBE has a unique need to know weather conditions at the site - he flies his helicopter up to his site, and it's important to know how windy it is as he's landing! Let us know if you're interested in adding a weather station to your repeater.

**SPEECH SYNTHESIS - IT BELONGS ON YOUR REPEATER!** Advanced Computer Controls is the only manufacturer of repeater equipment with electronic speech synthesis. Although it's an option on the RC-850 controller, **EVERY CONTROLLER IN THE FIELD HAS THE SPEECH OPTION.** Even customers ordering initially without speech upgraded shortly afterwards when they could afford to. What is speech synthesis, and what does it buy you on your repeater?

Speech synthesis is a computer output device, like a display or buzzer, (or even like Morse code), except that it's the most natural form of computer interface to people. A repeater is a particularly good application of speech, since you can only HEAR.

Use of speech just to ID the repeater or to make noises is a gimmick. Our use of speech is part of our plan to make repeaters "information centers". Combined with remote message programming, meter readback, and our mailbox as examples, speech greatly enhances the value of your repeater. Feedback on user's signal characteristics, conditions at the site, informative ID and tail messages, and our mailbox all take advantage of speech as a natural computer interface.

Speech synthesizers model the human voice in one of several ways, and store words or portions of words in memory. A computerized controller can join words or portions of words to form phrases and sentences, so that the controller can literally talk to its users. Two types of synthesis are popular - stored vocabulary, and phonemic synthesis. Stored vocabulary synthesizers include TI's products (used on our RC-850 and RC-85 controllers), and National's Digitalker (supported indirectly with our ITC-32 control board). These types of synthesizers use real human voices, recorded, data compressed, and reconstructed with speech chips. The TI synthesizers result in true human like speech, with male and female voices and sound effects available. In our opinion, the Digitalker doesn't sound nearly as nice as TI speech, but since it's a lot easier to interface, we support it for use with the ITC-32 control board.

The only drawback to stored vocabulary synthesis is the vocabulary limitations. We've largely solved that problem by obtaining a custom vocabulary tailored for use in repeater and remote base applications. The vocabulary is currently about 300 words, and grows with each new software release. We can also supply individual custom words.

The other type of synthesis is phonemic. Tiny portions of speech, called phonemes, are stored, and reconstructed either by the user editing phonemes together for each word to be spoken, or in text-to-speech systems where phonemes are automatically constructed into speech from ASCII text supplied to the computer. Most of these systems are based on chips from Votrax, and they all have the same characteristic - mechanical sounding, robot like, and difficult to understand unless you already know what they're going to say.

We chose TI stored vocabulary speech for our products because we think you want your repeater to sound GOOD. If any controller owners would like the flexibility of text-to-speech on your repeater (and can tolerate the quality), let us know and we'll consider an ASCII output compatible with a popular Text-To-Speech converter for the next major software release.

CALL FOR INDIVIDUAL CUSTOM SPEECH VOCABULARY - It's time again to go to TI for custom speech vocabulary. Individual custom vocabulary can be accessed from the RC-850 controller's message editor to be included in any of the programmable messages, such as ID's, tail messages, etc.

Last time we got words for customers ranging from Mount Hamilton to Coshocton, St. Petersburg to Connecticut, (even Dayton Hamvention). Get the name of your mountain, town, or group. Or even get your complete repeater call sign recorded as a phrase. We'll get order forms out to controller owners shortly, and we'll go to TI in the beginning of June. Words should be out by early August.

RC-850 CONTROLLER WARRANTY EXTENDED TO ONE YEAR - Effective immediately, the warranty period for all RC-850 controllers is extended from 90 days to one year from date of shipment. The new warranty policy reflects the level of reliability achieved in the field since the product was introduced.

SPECIAL  
DAYTON ISSUE

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