The ITC-32 Intelligent Touch-Tone Control Board is the SMART answer to your Touch-Tone remote control needs. More than just a tone decoder or receiver, the ITC-32 control board interprets valid commands (sequences of digits) and responds by changing logic outputs as commanded. Morse code or tone encoded response messages verify command entry and allow interrogation of output and input logic states. The ITC-32 control board is even designed to directly drive National Digital speech synthesizer chips for low-cost voice response.

APPLICATIONS
- Repeaters
- Remote Receiver Sites
- Remote Bases
- Industrial Control and Monitoring
- Home Control
- Security

TOUCH-TONE CONTROL—THE SMART WAY
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STATE OF THE ART TONE DECODING
The ITC-32 control board uses the Mitel CMOS Touch-Tone receiver chip set. Crystal controlled operation and digital detection means fast and reliable decoding and no false reading. The tone receiver is field proven as a top performer in hundreds of repeater and remote control installations.

EASY TO INTERFACE
The ITC-32 control board can be connected directly to any audio source such as a radio receiver or to the telephone line through the optional Telephone Interface Board. The control board’s logic outputs and inputs are designed for simplicity and a variety of equipment and sensors.

FLEXIBLE COMMANDS
The ITC-32 control board outputs may be commanded individually allowing such functions as on/off control, antenna selection, high/low power selection, squelch loose/tight and valve open/close. The outputs may also be commanded in GRP/PS, opening unique control possibilities such as subaudible tone (PL) frequency select, antenna direction, and level controls. An additional control command allows BCD programming of a transceiver’s frequency synthesizer for remote base applications. Additional commands control internal functions as well.

ALARM INPUTS
Alarm inputs can cause the ITC-32 control board to key the transmitter or auto-dial out over the telephone with alarm message generation. The alarm capability is valuable for site security from intrusion... to flood... to fire.

REPEATER FUNCTIONS
The ITC-32 control board has even more capability including a basic repeater COR/ID/Timer function so that it can serve as a controller for simple repeaters and remote receiver links. It can take the place of a collection of “ancient technology” repeater control boards which together can cost more than the ITC-32 with only a fraction of the capability!

FIELD REPROGRAMMABLE
The ITC-32 controller board is shipped with your custom command codes and CW ID call sign as part of the firmware. An optional Personality PROM (separate from the firmware PROM) lets you fully customize all command codes, response messages, auto-dial telephone numbers and timers. The format for the Personality PROM is fully documented, so that you can change it at any time in the field allowing quick and easy modification to your system.

UNIVERSAL APPLICATIONS
The ITC-32 Intelligent Touch-Tone Control Board is perfect for applications ranging from repeaters and remote bases, to industrial control, home security, and more. Add it to your existing repeater or simplex autopatch for the additional control capability you need. Or build a new repeater or remote base around it. Even control and monitor your home from your radio or over the phone.

The ITC-32—the COMPLETELY SMART answer to your Touch-Tone control needs.

*Touch-Tone is a registered trademark of AT&T
Features & Specifications

ITC-32 INTELLIGENT TOUCH-TONE CONTROL BOARD

- Touch-Tone Receiver
- Command Decoder
- Morse/Tone Response Generator
- Alarm Generator
- Repeater Control Functions
- I/O Buffers
- Voltage Regulator
- Personality PROM

8 → Open Collector Outputs*
20 → TTL Level Outputs
4 → Universal logic level alarm/status monitor inputs
PTT*
COS
PL
Morse/Tone
Morse keying
Mute*

*High voltage, high current buffered

Touch-Tone Receiver:
- Mitel MT8850/65
- Dynamic Range: 30 dB
- Twist: ±10 dB
- Acceptable Signal to Noise: 12 dB
- Decode time: 40 ms
- Excellent voice talk-off

Audio Input:
- Impedance: 100K
- Level: up to 2.5V p-p

Telephone Interface (optional):
- Via ACC's FCC registered or non-registered Telephone Interface Board

Logic Outputs:
- 8 commandable, buffered
- 20 commandable, TTL levels
- PUSH-TO-TALK (for response messages and repeater functions, buffered)
- MUTE (during Touch-Tone transmission, buffered)
- Morse Code Keying

Logic Output Characteristics:
- Buffered: 100 mA, 60V, open collector VMOS
- TTL Level: low = 0.8 volt max, high = 2.4 volt min

Logic Inputs:
- 4 remote status monitor/alarm
- CARRIER-OPERATED-SWITCH (repeater function)
- PL (repeater function)

Logic Input Characteristics:
- 10K input impedance
- Low = .8 volts max
- High = 2.4 volts min
- Compatible with TTL, 5/12 volt CMOS, etc.

Morse Code/Tone Output:
- 1 volt p-p, 20K output impedance

Command Codes:
- Configurable up to 15 digit

Personality EPROM (optional):
- Available from factory
- Fully documented for user reprogramming (requires EPROM programmer)
- Compatible with 2716, 2732, and 2764 EPROM devices
- Individual custom command codes for each function
- Customized response and alarm messages
- Alarm auto-dial phone numbers
- Repeater CW ID message
- Repeater timer values

Repeater Control Functions:
- COR, CW ID, courtesy tone, hang timer, time-out timer, carrier/PL operation, repeater on/off

Remote Base Functions:
- 3 digit BCD logic outputs plus offset bits for frequency synthesizer

Alarm Generation:
- Autodial phone numbers (up to 20 digit including pauses) and alarm messages

Power:
- +8 to +14 volts DC, 300 mA

Size:
- 4.5" x 6.5"

Connector:
- 44 pin dual row
  - (Vector R644 or equiv.)

Specifications subject to change without notice.