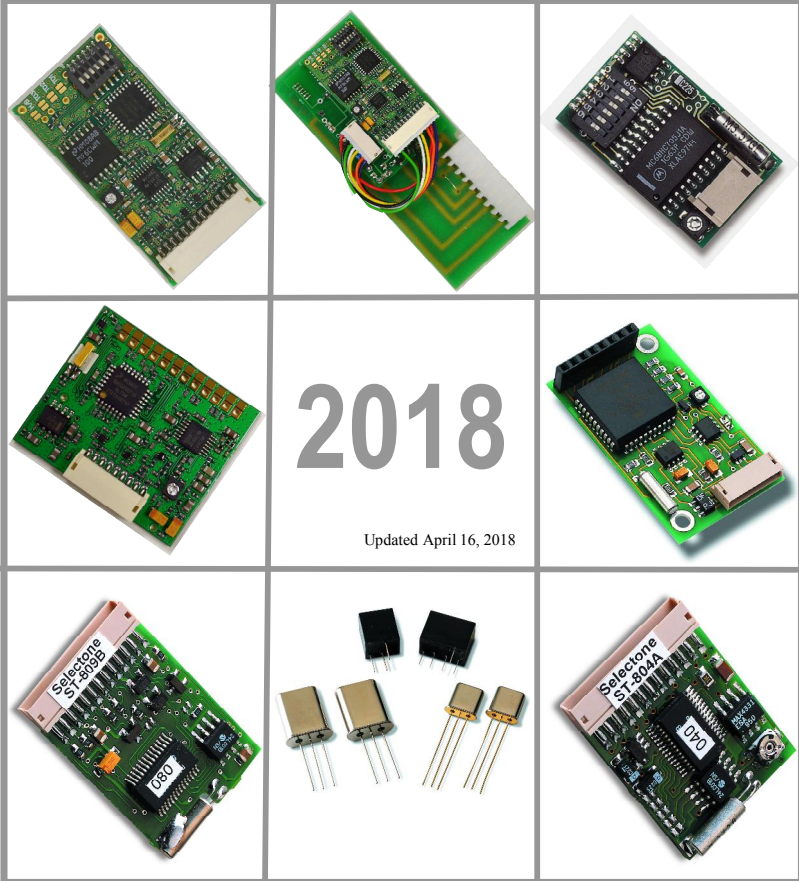


# **COMMUNICATIONS SPECIALISTS, INC.**

**Tone Signaling  
Product Catalog**



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# CTCSS ENCODER, ENCODER-DECODERS

## TS-64WDS

**\$74.95**

### Microminiature CTCSS Encoder Decoder

• Programmable CTCSS encoder-decoder for use in FM transceivers. Small size makes it ideal for handhelds and mobiles. A mini plug and socket, with color coded wires attached, allows easy hookup, double-sided tape is supplied for mounting.

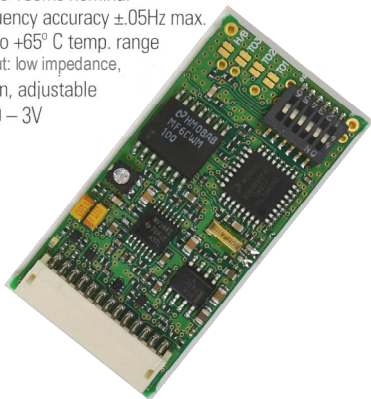


#### Features

- Field programmable to 64 tones from 33.0 Hz to 254.1 Hz
- Crystal controlled for high accuracy and stability
- Reverse burst (160ms) encode for squelch tail elimination
- Time-out timer, programmable to 8 settings
- Busy channel lockout with busy tone when time-out time is exceeded
- High-pass tone rejection filter included (3 pole, >330Hz)
- Solid state receiver muting with automatic monitoring, provides high or low outputs
- Immune to RF

#### Specifications

- Size: 0.9" x 1.8" x 0.19"
- Power: 6.0 to 20.0 VDC @11 Ma.
- Decode sensitivity: 5mv, impedance 60K ohms AC coupled
- Decodes off discriminator output, response time 150ms nominal
- Encode frequency accuracy  $\pm 0.05\text{Hz}$  max. over  $-30^{\circ}\text{C}$  to  $+65^{\circ}\text{C}$  temp. range
- Encode Output: low impedance, low distortion, adjustable sine wave, 0 - 3V



## TS-64MSTII

**\$99.95**

### Direct Plug-In for G.E. Master II

• TSU-64WDS is mounted on a mother board which mates with the existing tone socket in the radio. (Photo is shown on the front cover, top center)

## SS-64

### DIP Switch Programmable CTCSS Encoder

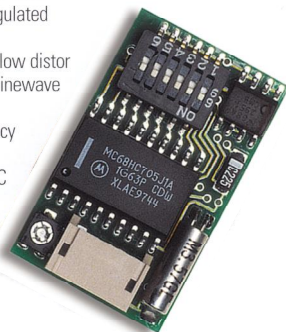
• Programmable CTCSS (sub-audible) encoder interfaces with all FM transceivers. Small size makes it perfect for handhelds and mobiles. On-board six position DIP switch for easy tone selection of 64 EIA and non-standard tone frequencies. Installs with mounting tape and on-board mini plug and wire set.

#### Features

- Compatible with all CTCSS (sub-audible) systems
- Reverse Burst capability, for squelch tail elimination
- Immune to RF
- Multi-tone switching capability (with added circuitry)

#### Specifications

- Size: .66" x 1.08" x .21"
- 6 - 28 VDC, unregulated @ 6.3 ma.
- Low impedance, low distortion, adjustable sinewave output: 0 to 2V
- Frequency accuracy  $\pm .025\text{ Hz}$
- Temp range:  $-30^{\circ}\text{C}$  to  $+65^{\circ}\text{C}$
- Start up time less than 10ms



**No Longer Available**

## CTCSS Tone Chart

CTCSS tones included in the SS-64 & TS-64

33.0*	71.9	123.0	183.5*
35.4*	74.4	127.3	186.2
36.6*	77.0	131.8	189.9*
37.9*	79.7	136.5	192.8
39.6*	82.5	141.3	196.6*
44.4*	85.4	146.2	199.5*
47.5*	88.5	151.4	203.5
49.2*	91.5	156.7	206.5*
51.2*	94.8	159.8*	210.7
53.0*	97.4*	162.2	218.1
54.9*	100.0	165.5*	225.7
56.8*	103.5	167.9	229.1*
58.8*	107.2	171.3*	233.6
63.0*	110.9	173.8	241.8
67.0	114.8	177.3*	250.3
69.4*	118.8	179.9	254.1

\*Non EIA Standard Tones

# DCS ENCODER-DECODER, MORSE STATION ID

## DCS-23

\$69.95

### Microminiature DCS Encoder-Decoder

- Compatible with all digital tone coded squelch systems used in Land Mobile radios. Field programmable by wire jumpers to all 512 octal codes, as well as transmit and receive data polarity. Installs with mounting tape and on-board mini plug and wire set.



#### Features

- Immune to RF
- Crystal controlled CMOS microprocessor for low voltage operation
- High pass filter included
- Multi-code switching capability (w/diodes)
- Solid state receiver muting with automatic monitoring, provides high or low outputs
- Auto squelch tail elimination
- Open collector transistor for PTT keying
- Test code to set transmit modulation level

#### Specifications

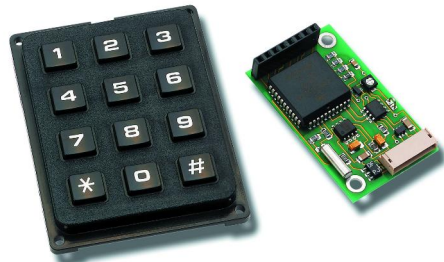
- Size: 1.36" x 1.18" x .25"
- Voltage: 5 – 28vdc, unregulated. @ 8ma.
- Temp. Range: -30° C to +65° C
- Sensitivity: Better than 15mv
- Signal to noise: better than 4db Sinad
- 171 ms decode time
- Input Z, 60k, AC coupled
- Output Z, 2.2k, AC coupled
- Golay 23 bit digital word at 134.4 Hz data rate

## ID-8

\$79.95

### Automatic Morse Station Identifier

- Provides automatic Morse Code identification for commercial, public safety and amateur radio applications, including repeaters, base stations, mobiles, beacons, CW memory keyers, etc. Meets all FCC identification requirements. Low voltage/current operation and small size make it universally applicable. All functions are programmable with a plug-on keypad included with each unit. All programming is stored in a non-volatile EEPROM, parameters can be reprogrammed at any time. Supplied with miniature plug/wire assembly for installation, programming keypad, and mounting tape.



#### User Friendly Field Programmable Features

- Eight selectable programmable messages
- CW speed from 1 to 99 WPM
- ID interval timer from 0 to 99 minutes
- ID hold off timer from 0 to 99 seconds
- CW tone frequency from 100Hz to 3000Hz.
- Front porch delay interval from 0 to 9.9 seconds
- Message length 216 characters
- CW or MCW operation
- Trigger ID and Inhibit ID, active high or low

#### Specifications

- Size: 1.85" x 1.12" x 0.35"
- 6-20 vdc, unregulated @ 6 ma.
- Low impedance, low distortion, adjustable sine wave output: 0-4 v peak to peak
- Transmitter PTT output: open collector transistor handles 80 vdc @ 300 ma.
- Temp. range: -30°C to +65°C

# DTMF DECODER

**ST-809B**

**\$69.95**

## Miniature DTMF Decoder

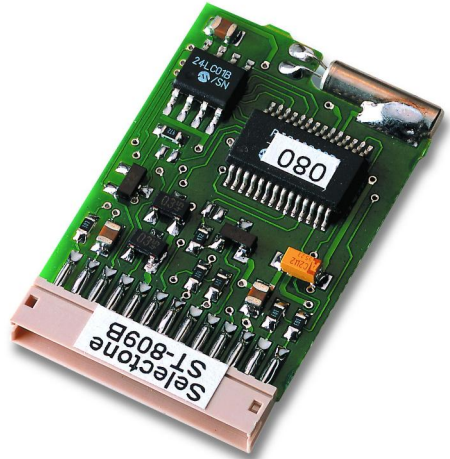
• PC Programmable DTMF (Touch-Tone®) decoder interfaces with all FM transceivers. Typical uses are mobile radio paging, selective calling, and other various remote control applications. Small size makes the ST-809B perfect for handhelds and mobiles, and a low profile connector makes programming and installation a snap. Uses ST-809PM Product Manager software, available for free from our web site, or at a nominal cost from our factory.

### Features

- 1 – 7 Digit Address Codes provide over 250 million unique addresses
- Three latched and/or interlocking outputs
- Telemetry function to confirm output status
- Confirmation tone to confirm receipt of call
- Alert tone
- Individual/Group/All Call capability
- Radio kill function

### Specifications

- Size: .85" x 1.34" x .21"
- 5.5 – 25 Vdc, @ 7ma.
- Open Collector Output, 80mAdc
- Call Lamp Output, 80mAdc
- Temperature Range, -30°C to +60°C
- DTMF input (HI range) 30-850mVRMS
- DTMF input (low range) 10-280mVRMS
- Signal to noise ratio, 12 dB SINAD
- DTMF twist, ±10 dB



- Digit recognition time, 20ms min., 300ms max. programmable
- Interdigit time, 50-5000ms programmable
- Decode time, 0-1 sec.+ interdigit time programmable (from the end of the last DTMF character)
- Decode momentary time, 0.050-9999 sec. programmable
- Transpond/Alert tone level, 5V p-p, no load
- Transpond duration, 2.34 sec.
- Transpond Tone Frequency, 874Hz
- Alert Tone Frequency, 528Hz
- Call Lamp Flash, 100-999ms programmable

### Accessories

- ST-809PM Programming Software, **\$4.95**
- ST-954B Programming Adapter, **\$15.95**



## ST-804A

**\$69.95**

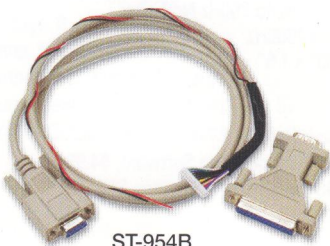
**Encoder** (DTMF ANI, Burst, Continuous, Two-Tone Sequential)



• All three popular signaling formats are available in one unit. PC Programmable encoder interfaces with all FM transceivers. Small size makes it perfect for hand-helds and mobiles, and low profile connector makes programming and installation a snap. Uses ST-804PM Product Manager software, available for free from our web site, or at a nominal cost from our factory.

### Features

- Time-out Timer
- Stuck Microphone Alarm
- Prefix or Suffix ANI Code
- Variable Transmit Delay
- Microphone Muting
- Programmable Tone On/Off Time
- ANI Hold-off Period
- ENI Talk Window
- ENI Re-transmit Time

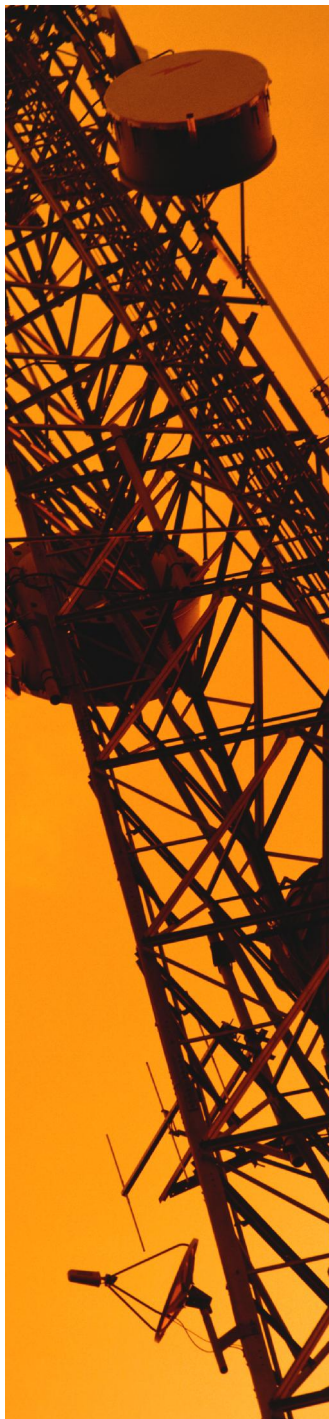


### Specifications

- Size: .84" x 1.15" x .15"
- 5.2 – 16.3 VDC, @ 6ma.
- Active Open Collector output, 40mAdc
- Tone output level, 0 to >3 V p-p composite DTMF signal w/<1 dB twist
- Frequency Range, 300 – 3000Hz (burst tone, continuous and two tone sequential)
- Temperature Range, -30°C to +60°C
- Tone Output Impedance  
Non-Signaling: >500k  
Signaling: <30 Ohms

### Accessories:

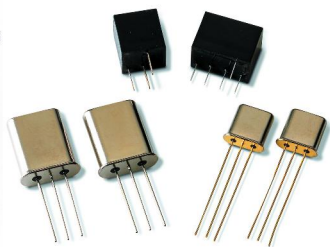
- ST-804PM Programming Software, **\$4.95**
- ST-954B Programming Adapter Cable, **\$15.95**



# NARROW-BAND FILTERS

For NEW  $\pm 2.5\text{kHz}$  deviation, 15kHz (150MHz) or 12.5kHz (450MHz) channel spacing

• Here's how to squeeze twice as many customers into your existing spectrum by reducing channel spacing to 12.5 kHz on 450 MHz or 15kHz on 150MHz. With our IF crystal filter kits and tone signaling protection, you can open up a lot of new channels without fear of adjacent channel interference. Don't discard those old radios like Master IIs, Micors and countless others. Convert them to 12.5 kHz/15kHz narrow band and save thousands of dollars in new radio replacements. Our high quality, low cost crystal and ceramic filters provide relief from interference under Part 90 rules. Available as individual filters or as complete conversion kits for specific radios. Installation instructions are available for many popular radios. Call our sales or technical staff if you have any questions.



## CRYSTAL FILTERS • High IF • 4 pole (matched pair)

For NEW  $\pm 2.5\text{kHz}$  deviation, 15kHz (150MHz) or 12.5kHz (450MHz) channel spacing

3db BW =  $\pm 3.75\text{kHz}$  • 40db BW =  $\pm 14\text{kHz}$  • 65db BW =  $\pm 300\text{kHz}$

Ripple = 1db • Loss = 2.5db • Operating Temp. =  $-20^\circ\text{C}$  to  $+70^\circ\text{C}$

Price per Pair			1-9	10-24	25-49	50-99	100+
CF-1	10.7MHz	HC-49/U x 2 Terminating Impedance 1.8K/4pf	10.00	9.00	8.00	7.00	6.00
CF-2	21.4MHz	UM-1 x 2 (miniature case) Terminating Impedance 850ohm/5pf	16.00	15.00	14.00	13.00	12.00
CF-3	21.8MHz	UM-1 x 2 (miniature case) Terminating Impedance 850ohm/5pf	16.00	15.00	14.00	13.00	12.00
CF-51	11.2MHz	HC-49/U x 2 Terminating Impedance 1.8K/4pf	10.00	9.00	8.00	7.00	6.00
CF-52	11.7MHz	HC-49/U x 2 Terminating Impedance 1.8K/4pf	10.00	9.00	8.00	7.00	6.00
CF-65	45.050MHz	UM-1 x 2 (miniature case) Terminating Impedance 380ohm/9pf	16.00	15.00	14.00	13.00	12.00

(Model CF-3 for Icom H-16/U-16/U-200/U-400 etc.)

## CERAMIC FILTERS • Low IF • 455kHz • (Murata Exact Replacements)

For NEW  $\pm 2.5\text{kHz}$  deviation, 15kHz (150MHz) or 12.5kHz (450MHz) channel spacing

CF-5	Ceramic Filter CFU455HT	4 pole (3 leads)	6db BW= $\pm 3\text{kHz}$ 40db BW= $\pm 9\text{kHz}$			
CF-6	Ceramic Filter CFW455H	6 pole (5 leads)	6db BW= $\pm 3\text{kHz}$ 50db BW= $\pm 9\text{kHz}$			
CF-7	Ceramic Filter CFU455G2	4 pole (3 leads)	6db BW= $\pm 4.5\text{kHz}$ 40db BW= $\pm 10\text{kHz}$			
CF-10	Ceramic Filter CFW455G	6 pole (5 leads)	6db BW= $\pm 4.5\text{kHz}$ 50db BW= $\pm 10\text{kHz}$			
CF-15	Ceramic Filter CFUM455G	4 pole (4 leads)	6db BW= $\pm 4.5\text{kHz}$ 40db BW= $\pm 10\text{kHz}$			
CF-20	Ceramic Filter CFWM455G	6 pole (5 leads)	6db BW= $\pm 4.5\text{kHz}$ 40db BW= $\pm 10\text{kHz}$			

For OLD  $\pm 5.0\text{kHz}$  deviation, 30kHz (150MHz) or 25kHz (450MHz) channel spacing

CF-8	Ceramic Filter CFU455E2	4 pole (3 leads)	6db BW= $\pm 7.5\text{kHz}$ 40db BW= $\pm 15\text{kHz}$				
CF-9	Ceramic Filter CFW455E	6 pole (5 leads)	6db BW= $\pm 7.5\text{kHz}$ 50db BW= $\pm 15\text{kHz}$				
<b>Price per Ceramic Filter</b>			1-9	10-24	25-49	50-99	100+
			3.00	2.75	2.50	2.25	2.00

Most other bandwidth CFU455, CFUM455, CFW455, CFWM455 filters are available at the price shown above. Call for availability.

## NARROW-BAND KITS For NEW $\pm 2.5\text{kHz}$ deviation, 15kHz (150MHz) or 12.5kHz (450MHz) channel spacing

Price per Narrow-Band Kit		1-9	10-24	25-49	50-99	100+
CF-Challenger	Narrow-Band Kit for Johnson Challenger	20.00	19.00	18.00	17.00	16.00
CF-EXECII	Narrow-Band Kit for G.E. Master Exec. II	25.00	22.50	20.00	17.50	15.00
CF-MICOR	Narrow-Band Kit for Motorola MICOR	25.00	22.50	20.00	17.50	15.00
CF-MITREK	Narrow-Band Kit for Motorola MITREK	25.00	22.50	20.00	17.50	15.00
CF-MSF-5000	Narrow-Band Kit for Motorola MSF-5000	30.00	27.50	25.00	22.50	20.00
CF-MSTII	Narrow-Band Kit for G.E. Master II	25.00	22.50	20.00	17.50	15.00
CF-MVP	Narrow-Band Kit for G.E. MVP	25.00	22.50	20.00	17.50	15.00
CF-TK840	Narrow-Band Kit for Kenwood TK-840	34.95	34.95	34.95	34.95	34.95

## Ordering Information

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**Net 30:** Open accounts are available to businesses with approved credit. Call for credit application.

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## Warranty Information

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Full **one-year warranty** against factory defects on all products when returned to factory for replacement. Please call for instructions prior to returning any item for replacement. Customer pays shipping fee to return merchandise to our location.

## Return Information

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Credit/refund within 30 days of purchase. Please call for instructions prior to returning any item. Customer pays shipping fee to return merchandise to our location.

## Technical Information

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Technical support is not available. We can not service obsolete/discontinued products. Instruction manuals are available on our website for our current product line as well as many of our older products.

## About Us

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Communications Specialists, Inc. has been building quality electronic products that the land mobile, wildlife telemetry, and pet industries have come to rely on for over 45 years. At our Orange California factory, we utilize the latest in surface mount assembly technology to assure consistent quality through out our entire product line. All of our products are made in the USA.





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Rev. April 16 2018 PL