

C Plus II

Multi Format ANI Decoder/Encoder

Compatible With:

MDC-1200®

GE-STAR®

FleetSync™

DTMF

BENEFITS:

- Identify every transmission source
- Reduce nuisance and obscene transmissions
- DSP signal processing decodes extremely weak, distorted or noisy signals
- Instantly identify an Emergency or ManDown transmission
- AGC for hassle free installation

FEATURES:

- Large, high visibility display
- Dual or Triple ANI formats decoded in the same unit
- Automatic Emergency Acknowledgement (all formats)
- 2 Mb Flash Memory
- Field Upgradable
- "Ambush" function automatically responds when "missing" units become active
- "Authorize" function controls repeater access
- "Enunciate" function sounds unique tones for user defined ID's
- Real Time Clock for time and date stamped data
- DTMF - 8 Characters with Status at Beginning or End
- Data Mute Relay
- Full Duplex Operation
- Linkable with other units for Multi-Channel operation
- Diagnostics Built-in
- Decode and display FleetSync "Group ID's"

OPTIONS:

- Aliasing - 4000 ID's. 8 Characters display, 27 serial ports
- Dual Decode (any two formats)
- Triple Decode (any three formats)
- Encoding MDC-1200, FleetSync, or GE-STAR 2-way commands
- Tone Remote Interface (wire line)
- 19" Rack Mount Kit
- Factory setup and configuration

ID-Aliasing

The C Plus II includes 2 Mb of flash memory. The memory allows the user to program a look-up table of alpha characters. When the ANI number is received, it is converted to 8 alpha numeric characters in the display. For example: ID 1234 could display "John #99". A full character set is available with upper and lower case, symbols, and digits. Greater than 4000 ID's may be stored.



The **C Plus II** decoder decodes and identifies the type and source of each radio transmission in a compact, easy-to-read unit. Numeric or character ID's are displayed.

The unit decodes and displays the identity of PTT ANI, Emergency, ManDown and Stuck Mic messages by posting the remote radio's ID and flashing the message in the large display.

Up to 8 DTMF characters may be displayed. The user may define the 1st or last character to be a status. Status characters can be programmed to trigger an audible alarm and or Out 1 or Out 2.

An RS-232 ports outputs the ID, the message type, time, date, and channel number for a permanent record of channel activity.

Receipt of a ManDown or Emergency message causes a pulsing tone, a flashing display and triggers one of two external alarm driver circuits. Several tone alternatives are programmable, including the absence of any tone.

During the reception of ANI data, a form C relay becomes active. The relay may be wired back through the receiving radio or dispatch console in order to mute the data burst. Several modes of Mute operation are available.

With the optional encode function, and CDT hand held terminal, the **C Plus II** encodes MDC-1200, FleetSync, and GE-STAR 2-way commands. Select Call, Radio Check, and Call Alert are available for MDC-1200. Select Call, Radio Kill, and Interrogate are among the available functions for FleetSync and GE-STAR. All 2-way functions are fully compatible with factory built-in signaling features available from the major radio manufacturers.

The **C Plus II** includes several new features to give the user a brand new set of tools. "Ambush", "Authorize" and "Enunciate" are described on the following page.



934 S. Andreasen Drive Suite G • Escondido, CA 92029
800.487.7184 • ph. 760.738.3282 • fx. 760.480.0233
www.cimtechcorp.com Sales@cimtechcorp.com

C Plus II

SPECIFICATIONS

Electrical

- SIGNALING FORMATS**
 - GE-STAR® - PSK 400bps on 1600Hz +/- 1.5% carrier
 - MDC-1200® - FSK 1200bps at 1200/1800 Hz
 - FleetSync™ - MSK 1200 bps at 1200/1800 Hz
 - NYSP GE-STAR - format containing special bit values
 - DTMF - Up to 8 Characters
- POWER REQUIREMENT**

5 VDC at 1.0 A. External 120 VAC power supply included. High efficiency, Green Power approved. 90 - 264VAC input with overvoltage protection.
- RADIO SYSTEMS**

Conventional or Trunking compatible.
- DATA INPUT (for Decoding)**

Single ended: 30mV to 12Vpp, Balanced: 600ohm -30 to +10dBm. High Z: -36 to +4 dBm. No adjustment necessary due to AGC.
- DATA OUTPUT (for Encoding)**

Single ended: 600 ohm: to 14Vpp
Balanced: 600 ohm: to +10dBm; High Z: to +16 dBm. Potentiometer adjustable to allow radio transmit deviation setting.
- SOUNDER**

Audible 3400 Hz 80dB(A) @ 2', programmable tones.

DISPLAY

- FRONT PANEL DISPLAY**

8 Red 5x7 matrix high intensity LED's, 0.7" high. Upper and lower case symbols, and digits programmable with Alias option installed.
- FRONT PANEL CONTROLS**

Review, Clear.
- PRINTER OUTPUT**

A serial port outputs RS-232 ASCII, identifying each decoded message. The printer output is programmable and can include the unit ID, message type (8 characters), plus time, date, and channel number. If Alias option is installed, printer will also print the aliased ID, message, and assignment (27 total characters).
- DISPLAY RESET**

A rear panel connection is provided to allow the front panel to be cleared remotely by footswitch or other means. Logic level compatible.
- MESSAGE REVIEW**

The last 20 data messages from the review memory can be displayed, one at a time via the Review push button. The display is returned to real time by receipt of any message, or by the RETURN push button, or by no operator activity for ten seconds.
- MDC-1200**

Decodes and displays entire HEX ID set. Emergency and Mandown will be acknowledged. With Encode option installed, supports Voice Select Call, Radio Check, Call Alert (long), Call Alert (short).
- GE-STAR**

Decodes and displays all known variations. Emergency and Mandown will be acknowledged. With Encode option, supports Selective Call/Cancel, Radio Disable/Enable, Open Mic Monitor, and Interrogate.
- FleetSync**

Decodes and displays FleetSync Basic and FleetSync Ver 2.0, PTT ANI, Emergency (ST99) and ManDown (ST98). Emergency and Mandown will be acknowledged. Entire set of Fleet and Unit ID's. Fleet range 100 to 349. ID range 1000 to 4999. With Encode option, supports Selective Call/Cancel, Radio Disable/Enable, Mic Monitor, Interrogate, and Status Messages.
- DTMF**

Allowed Characters	0 through 9, A, B, C, D, * or E, # or F
Maximum Length	8 characters or 7 plus status
Twist Acceptance	-8 to +4 dB
Noise Tolerance	-12dB
Frequency Tolerance	2.5% of DTMF Frequency
Min. digit length	programmable 25mS to 5000mS
Max. inter-digit pause	programmable 50mS to 9999mS
Status Reporting	If enabled, first or last received character = status
ID Qualifying	If enabled, maximum of 5 character prefix qualifies decode

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GE-STAR is a registered trademark of GE Ericsson
FleetSync is a trademark of Kenwood Communications Corporation



PROGRAMMABLE FUNCTIONS

- AMBUSH**

Cimarron's "Ambush" feature permits the user to set the C Plus to transmit a Radio Kill or Select Call as an ambush for a turned off or out-of-range radio. When the target radio returns to range and transmits his ID, the C Plus responds by sending the command.
- AUTHORIZE**

Cimarron's "Authorize" feature permits the user to program a list of authorized ID's. The C Plus will then respond only to those ID's. The auxiliary outputs can be connected to drive SMR or repeater control circuits.
- ENUNCIATE**

Cimarron's "Enunciate" feature allows the user to program unique tones to be sounded when specific ID's are decoded.
- AUXILIARY OUTPUTS**

2 open collector outputs will each sink 500mA. Active for 2 seconds. Programmable for Emergency, Man-Down, Stuck Mic, Authorize, Ambush, or other user defined functions.
- DISPLAY MODES**

Select: ANI, Message and Assignment, Scrolling, or Taxi Bidding.
- OUTPUT FORMATS**

Select: Cimarron ANI, MCC, AVL, Modat, 1207/BED-31, CML, NYSP, GENERIC 21 BIT.
- DECODER OPERATION**

Select: Chan #, Base ID, Time, Date, Printer baud rate, Printer on/off, Beeper tones.
- ENCODER OPERATION (included)**

Select: On/Off acknowledgements to EMER messages, Attack Delay Time, Preamble Length (GE-STAR only)
- ENCODER OPERATION (optional)**

Select: MDC-1200, GE-STAR, or FleetSync 2-way functions. Connect optional CDT Hand Held Terminal or CAD system to enter the 2-way commands.
- DIAGNOSTICS**

Select: Loop Back, Data Modulation, Outputs toggle.

INTERFACES

- KEYING OUTPUT**

Open collector output capable of sinking up to 500mA.
- DATA MUTE RELAY OUTPUT**

Form C Relay, 1.0A at 24VDC (N.O. and N.C. contacts). Mode 1: Active during ANI burst. Mode 2: Unmutes only after data burst reception and active COS.
- RS-232 SERIAL**

RJ-11 (6 pin modular phone type) connector. Used to output data decodes for connection to CAD or serial printers. Also capable of accepting 2-way encode/decode commands. Optional CDT Hand Held Terminal connects here.

OPTIONS - (options are field upgradable)

- ALAISING - 4000 ID's. 8 characters on display, 27 total via serial ports.
- Encoding - compatible with MDC-1200, FleetSync, and GE-STAR.
- Dual Decode (any two formats)
- Triple Decode (any three formats)
- TONE REMOTE - 125 mS tone burst of 2175 Hz followed by function tone. Tone programmable from 950 to 2050 Hz in 100 Hz steps.
- 19" rack mounting kit

MECHANICAL

- REAR CONNECTOR**

Two screw terminal strips. Each separately un-pluggable from unit.
- SIZE**

8" x 6 1/4" x 3" (20 x 16 x 7.6 cm), less extended front legs.
- WEIGHT**

1 lbs. 14 oz. (4.13kg) including external power supply.