
Cimarron Technologies Corporation

MODEL C-MARK II/f

DISPLAY DECODER

FleetSync™ COMPATIBLE

Instruction Manual



*Copyright 2000 – Cimarron Technologies Corporation, Escondido, CA 92029
All rights in this material are reserved. No part of this document may be reproduced
in any way without the express written permission of Cimarron Technologies Corporation.*

FleetSync™ is a registered trademark of Kenwood Communications Corporation

**Manual Number 05 12 0002
Rev B**

934 South Andreasen Dr. Suite G
Escondido, CA 92029-1919
(760) 738-3282 California and U.S. (800-487-7184) FAX (760) 480-0233
Email: Service@cimtechcorp.com

**CIMARRON
TECHNOLOGIES**

WARRANTY

Cimarron Technologies Corporation warrants this product to be free from defects in material and workmanship for a period of three years from date of shipment. If a malfunction occurs due to defective material or workmanship, the product will be replaced without charge if returned to the factory.

This warranty does not apply to any failure or damage caused by accident, neglect, unreasonable use, improper installation, or to alterations or modifications to the unit. Nor does the warranty extend to damage incurred by force majeure (natural causes) such as lightning, fire, floods, or other such catastrophes, nor to damage caused by environmental extremes, power surges and/or transients.

Cimarron Technologies Corporation makes no other warranty, either expressed or implied, with respect to this product. Cimarron Technologies Corporation specifically disclaims the implied warranties of merchantability and fitness for a particular purpose. Some states or provinces do not allow limitations on how long an implied warranty lasts, so the above limitation or exclusion may not apply to you.

The remedies provided herein are customer's sole and exclusive remedies. In no event shall Cimarron Technologies Corporation be liable for any lost profits, direct, indirect, special, incidental, or consequential damages, whether based on contract, tort, or any other legal theory.

TABLE OF CONTENTS

General.....	Page 3
Description	Page 3
Specifications	Page 4
Power Up Self Test	Page 5
Controls and Displays.....	Page 6
Setting Printer Port.....	Page 7
Setting Time and Date	Page 8
TK-880 Connections	Page 9
CMARK Output to Printer/PC	Page 10
Jumpers Encode SAT PCB	Page 11
Rear Panel Connections.....	Page 12
Beeper	Page 12
Display Notes	Page 13
General.....	Page 13
PTT Decode	Page 13
Emergency Decode	Page 14
Review Memory.....	Page 14
TK-880 Software Programming	Page 15
Revision List.....	Page 16
Jumpers Main PCB	Page 17
Schematics	

General

The C-MARK II Dispatch Display Unit, operates in conjunction with mobile and hand-held radio transmitters equipped with Kenwood Fleetsync[®] compatible ANI encoders. The display unit is used in dispatch centers of public safety, business, industry, transportation, utilities, and other facilities to digitally identify the source of each radio transmission.

Description

The unit incorporates a large, dimmable, easy to read LED display window to show received identifications and message type.

Operating parameters, including printed radio channel, tone alternatives, printer output protocol, output Baud rate, data, stop bits and parity, and display mode are programmable from the front panel.

There are two types of ID messages possible. When an ID is received, it is either a PTT or EMERGENCY. Receipt of a PTT ID data burst causes a short tone (or no tone, programmable), and posts the ID in the four left-most characters, and an "A" in the right most character position of the display.

Receipt of an Emergency ID causes a pulsing tone (or no tone) with a 5 second, 10 second, or continuous duration, the identification number flashes in the display and is accompanied by a flashing "E".

The display window presents the latest received message, unless it has been deleted by the operator.

The Review Memory stores up to the last 12 messages for review. Front panel push buttons provide for reviewing these messages.

Front panel buttons also provide for removing all ANI message ID's from the display window and display memory, printing or not printing ANI-ID message information, and silencing alert tones. The push-buttons and displays also provide a means to set the battery protected date/time clock, and to program operating parameters.

The unit also provide an output to drive an external, serial printer. The printer output is real-time and includes the Identification, Type of Message, Date/Time of reception, and radio channel character (as programmed).

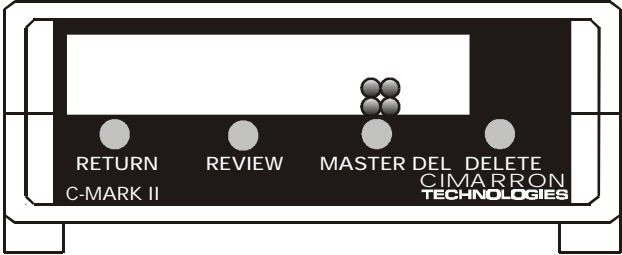
Specifications – CMARK II/f

Data Format	Kenwood Fleetsync®
Data Input	RS-232 Serial 9600, N, 8, 1
Display	Red LED, 0.7" in height, 5 x 7 matrix
Display Mode	IDs scroll from 1st to last display and exit from last display.
Decoding	PTT and Emergency.
Display Memory	12 ID Messages. Displayed via "REVIEW" pushbutton.
Programming	Decoding and display alternatives, including ANI-ID print/no print and date/time setup, via front panel pushbuttons.
Outputs	
Printer	Serial Output, RS-232C, ASCII Baud Rate – 1200, 2400, 4800, or 9600 Data Bits - 7 or 8 Parity – Odd, Even, or None Handshake – Xon/Xoff or RTS/CTS Connector - 9-Pin Male, D Subminiature
Data Mute	N/a
External Alarms	EMERGENCY – Open Collector Transistor, sink 500 mA MAN DOWN – n/a STUCK MIC – n/a REQUEST TO TALK – n/a
Sounder	Audible 2800hz, protocol programmable from front panel.
Date/Time	24 hr/365 day with leap year. Lithium battery back up.
Dimensions	7.87" x 6.25" x 2.5", RFI shielded (Length x Width x Height)
Weight	3.0 lbs w/wall plug-in power supply (included).
Power Requirements	
Voltage	12 VDC +/- 10%
Current	1A

Power Up Self Test

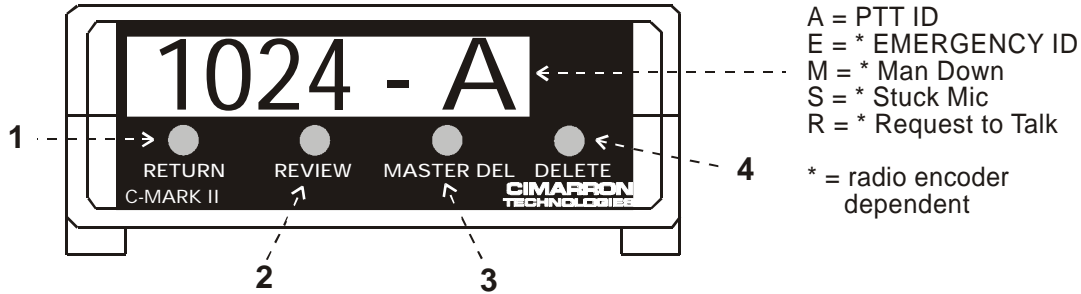
Power up self test routine

When power is initially applied to the unit, it automatically proceeds through a self-test routine. At the conclusion of this, the sounder is activated in a single tone for approximately 1 second and a single "dot" in the second from right character is illuminated in the display window to indicate that the unit is powered. If the "REVIEW" push-button is pressed at this time, a dash "-" will appear in all character positions in the window.



Normal Power-Up Display

Controls and Display



1. RETURN Push to return the display to real-time presentation. If the "REVIEW" push-button is not pressed for ten seconds, or if the "RETURN" push-button is pressed, or if any message is decoded during the "Review" mode, the unit will automatically revert to the original real-time display presentation, and the most recently decoded message ID will be presented in the display window.

2. REVIEW Push to see the messages stored in the Review Memory. The "REVIEW" push-button is used to review up to 12 previously received messages as contained in the Review Memory. When the Review Memory is full, a new received message will automatically delete the oldest message, regardless of its type. The latest received message IDs will reside in the display memory unless previously deleted from the display. Pressing the "REVIEW" push-button momentarily will cause the last received ID and message character, from the Review Memory, to appear in the display window. Instead of the "-" between the ID and message character, a lower case letter will appear, corresponding to the messages's position in the Review Memory. The last received message will post "a", the next to last received message will post "b", etc., while, if the memory is full, the oldest ID will post "l". Subsequent presses of the "REVIEW" push-button will cause the older message IDs and message characters to appear in the display. Message "a" will be displayed again after reviewing the last message in the Review Memory.

3. MASTER DEL Push to remove all non-critical IDs from the display and the display memory. The "MASTER DEL" push-button has no effect on the Review Memory. When pressed, the "MASTER DEL" push-button will remove all Non-Critical Message IDs from the display and display memory positions. Critical messages must be removed individually by pressing the "Delete" push-button twice within two seconds.

4. DELETE Push to remove all non-critical id's from the display and the display memory. The delete push-button only affects the identification and message character in the display window. It has no effect on any messages stored in the Review Memory.

If pressed once, the "DELETE" push-button will:

- A. Remove a Non-Critical ID from the display window. If other IDs reside in following display memory positions, they will be shifted forward, with the last memory position becoming blank.
- B. Silence the audible tone of a Critical Message ID (Stuck-Mic, Request-To-Talk, Emergency, or Man-Down ID) regardless of its display memory position.

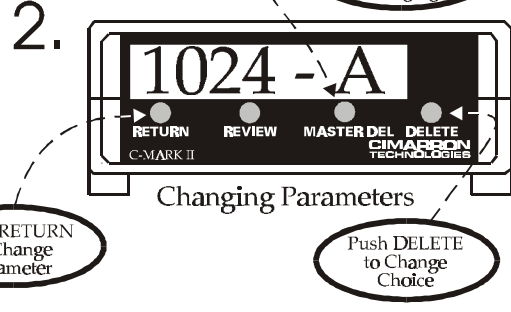
If pressed twice within 2 seconds the "DELETE" push-button will:

- A. Remove two consecutively displayed Non-Critical IDs from the display window.
- B. Silence the audible tone (if sounding) and/or remove the ID of a Critical Message in the display window.

Setting Printer Port - Fleetsync

➤ Any previously stored or displayed messages will be lost! ⚡

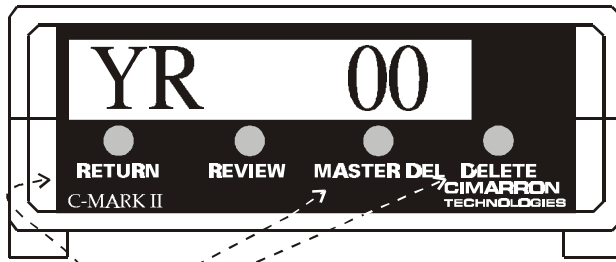
Once you enter this mode, you must follow through all Parameters, then exit.



Display	Parameter	Choices	As Shipped	
CH	01	Channel number	01, 02, 03... 09	01
TN	00	Beeper	00, 01, 02, 03	00
	Alternative	Non-Critical	Stuck-Mic/RTT	Emgy/Man Down
	00	Short, steady	2 -second, steady	5-second, pulsing
	01	Short, steady	5-second, steady	10-second, pulsing
	02	None	10-second, steady	Continuous, pulsing
	03	None	None	None
FT	B	Factory set value	B	B
Bd	A	Baud Rate	A - 1200 baud B - 2400 baud C - 4800 baud D - 9600 baud	D
Ds	A	Data bits/stop bits	A - 7 data/1 stop B - 7 data/2 stop C - 8 data/1stop D - 8 data/1 stop	D
Py	A	Parity	A - odd B - even C - none	B
Xo	A	Flow	A - Xon/Xoff B - RTS/CTS	A
Ap	A	ANI ID to printer	A - No (careful!) B - Yes (recommended)	B
Tk		Encoder Trunking Compatible	A - no B - yes	A
Ak		Encoder Message Acknowledgement	A - no B - yes	B
OK!		Parameters loaded. Now press RETURN to continue.		
Exit		Hear a short beep, then unit is ready		
%		Error in programming, start over		

Setting Time and Date

- Any previously stored or displayed messages will be lost!
- Once you enter this mode, you must follow through and enter new choices for each parameter, then exit.



Push together and release

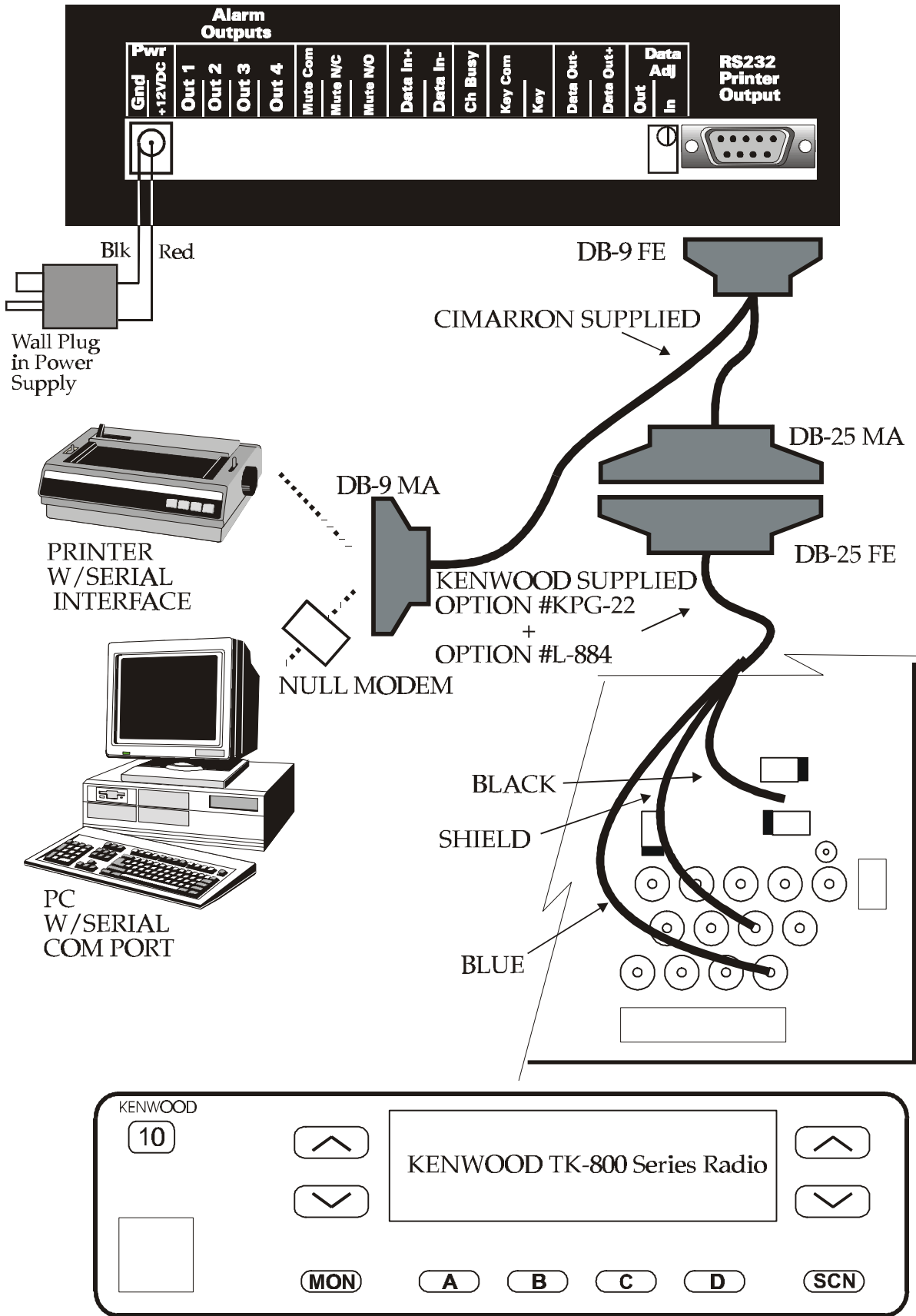


		Parameter	Choices
YR	93	Year	00 . . . 99
MO	01	Month	01 . . . 12
DY	01	Day	01 . . . 31
HR	00	Hour	00 . . . 24
MN	00	Minute	00 . . . 59
SC	00	Second	00 . . . 59

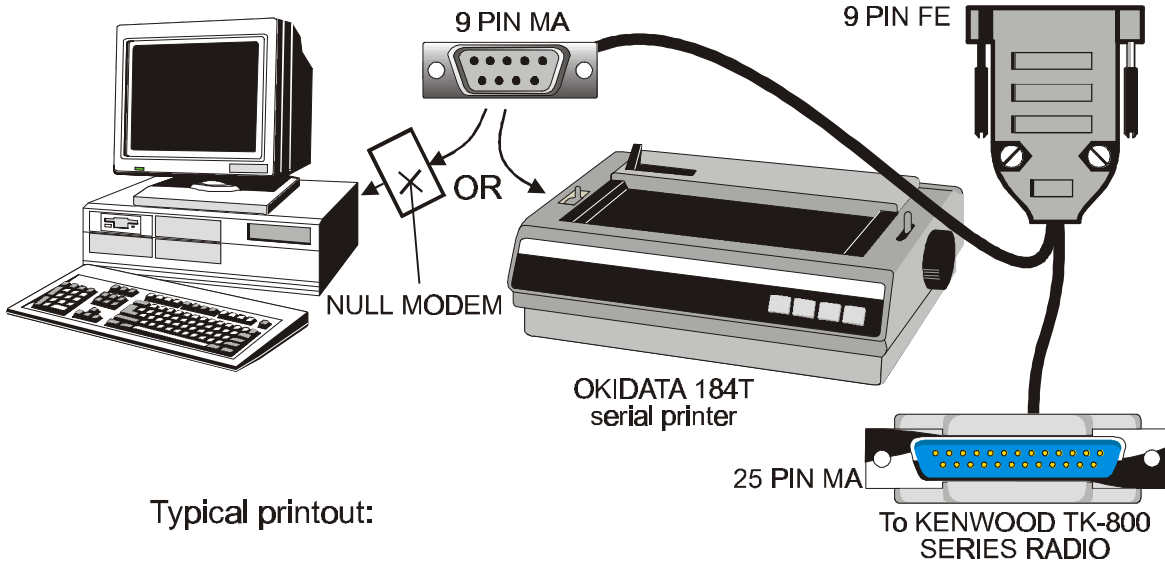
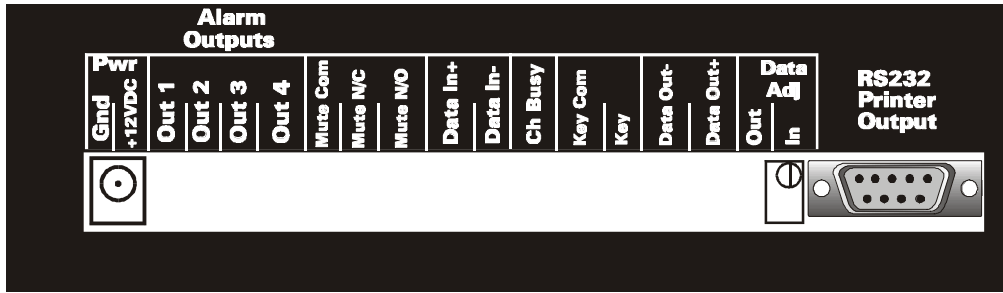
Exit Hear a short **beep**, then unit is ready

% Error in programming, start over

Kenwood TK-880 Connections



CMARK Output to Printer/PC Example



Typical printout:

```
0300 ANI ID 11:04:28 03/22/96 CH 1
1234 EMERGY 11:06:30 03/22/96 CH 1
5678 MANDWN 11:08:59 03/22/96 CH 1
```

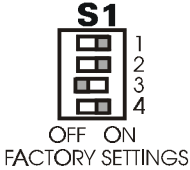
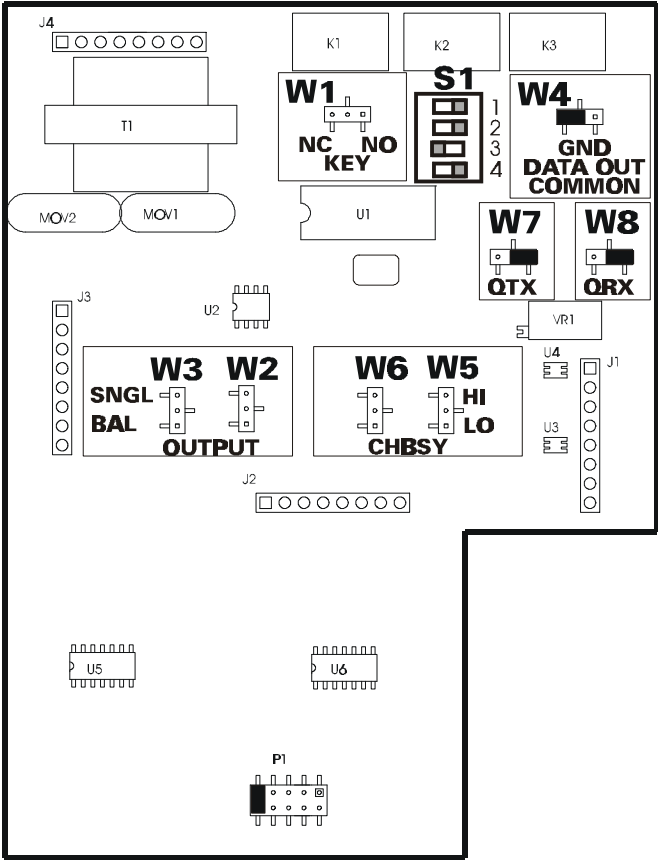


Hints:

Use any printer with a serial RS232 interface such as the OKIDATA Microline 184T.

Make sure baud rate and settings in printer and CMARK match.

Jumpers – Encoder SAT PCB rev C for Fleetsync



Rear Panel Connections

BARRIER STRIP CONNECTOR

The power connection is plainly marked on the rear panel.

Pwr
Gnd.....From Wall Plug in Power Source
+12VDC.....From Wall Plug in Power Source

Alarm Outputs
Out 1.....Request-To-Talk not used
Out 2.....Unique Stuck-Mic..... not used
Out 3.....Emergency..... Open Collector, Active - ½ Second Min Low
Out 4.....Unique Man-Down..... not used

Beeper

Jumper W10 applies power to the beeper. If removed, beeper is always inactive.

Display Notes

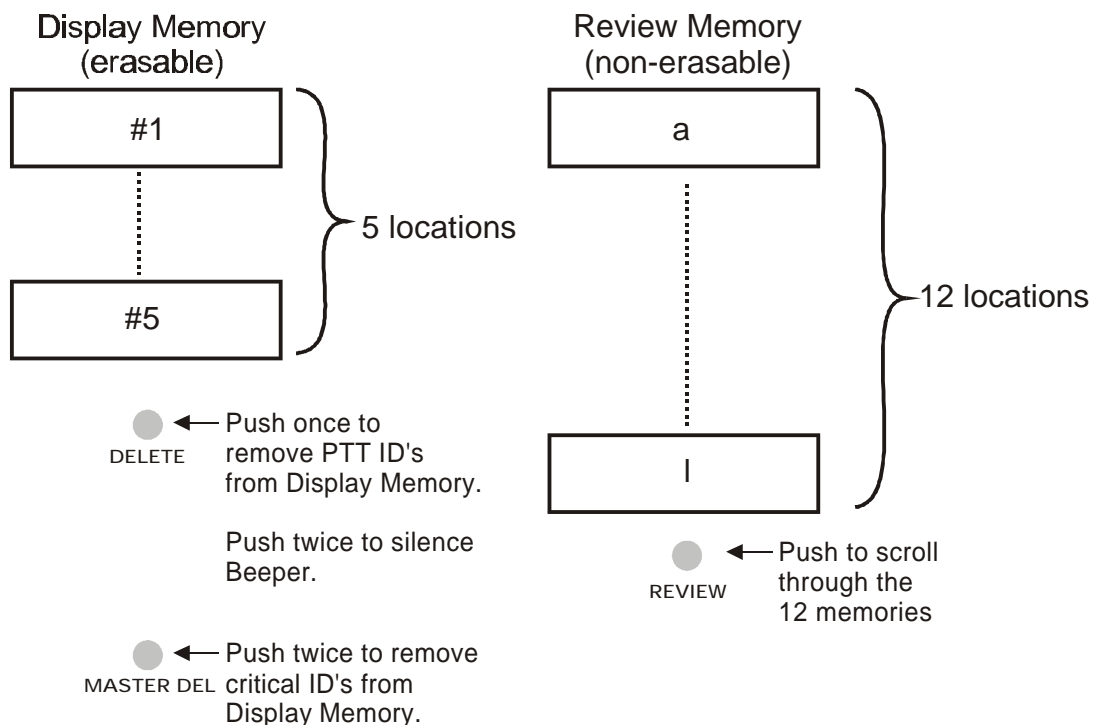
General

The unit incorporates separate memories for the display and the "review" information. The Display Memory is five messages deep (positions #1 through #5), while the Review Memory is 12 messages deep (positions "a" through "l").

Decoded messages enter both the display and review memories. The last received ID is displayed in the Display Window. IDs can be removed from the display window by the operator, and redundant message IDs may not necessarily be entered to the display memory. Leading zeros in IDs are suppressed (not displayed).

All received IDs enter, scroll through, and exit from the Review Memory. The operator cannot remove messages from this memory.

CMARK-II Memory



Non-Critical Message (PTT) Decode

Upon decode of a PTT Message, the unit sounds a single short tone (if so programmed) and the identification (ID) number and the character "A" is entered to Position #1 in the Display and Review Memories and displayed in the display window.

Depending upon the programmed print alternative, the PTT message may or may not be printed.

If a second PTT is received, the first received ID will scroll to Display Memory Position #2 and be displayed in the first Secondary window. Thereafter, received IDs will scroll in a similar manner until they reach memory Position #5 and the last Secondary window. From that position, PTT's will exit the Display Memory.

While a Non-Critical ID resides in the display window, the "DELETE" push-button may be pressed to delete the ID and message character. If other data messages have been previously received, they will "scroll back" automatically from their positions in the display memory (Position #2 to Position #1 and display, etc.).

When a Non-Critical Message ID is displayed in the Window, a second received identical (redundant) Non-Critical Message ID will not be entered to the display memory or be redundantly displayed. If a dissimilar Non-Critical Message ID is held in the display window and an identical Message ID is in the display memory, an additional received and identical Non-Critical Message ID will be entered to the display window.

All received messages, whether redundant or not, are entered to the Review Memory, which stores the last 12 messages received.

Emergency Message Decode

The Emergency Messages and their "canned" message codes are:

<u>Message</u>	<u>Code</u>	<u>Tone</u>	<u>Posted Letter</u>
Man-Down	1111	As programmed	M
Emergency	0111	" "	E

Upon decoding a Critical Message, the posted ID will flash in the Window and the appropriate letter will be posted in the "MSG" position, the unit will produce the appropriate tone. One press of the "DELETE" switch will silence the alert tone. While the ID resides in the display, pressing the "DELETE" switch a second time within two seconds will also remove the ID and character. If one or more other message(s) reside in the secondary windows, the message in window #2 will revert to the Primary Window. If not pressed a second time within two seconds, a single press thereafter will be ignored, and two presses of the "DELETE" switch thereafter, within two seconds of each other, will delete the displayed critical ID and Message Character.

While a Critical Message ID is displayed in either the Primary or Secondary display windows, a second received and identical Critical Message's ID will not be displayed, however if the tone had been silenced previously, the tone will again sound. All received Critical Message IDs will be printed in real-time, whether displayed or not.

As additional, dissimilar Critical Messages are received, the previously displayed Critical Message ID will scroll through the display memory, and with additional receipt of Critical Messages will proceed to and remain in the last secondary window. If all display memory positions do not contain Critical Messages, reception of a Non-Critical Message will cause it's ID to be entered to the first display memory position which does not contain a Critical Message. Therefore, Critical Message IDs will remain at the "top" of the display memory, and the most recently received Critical Message will always be displayed in the Primary Window.

If all display memory positions do contain Critical Messages, no other messages, regardless if Critical or Non-Critical, will be entered to the Display or display memory. They will however, continue to be entered to the Review Memory, be printed, and the sounder will be activated each time, according to the type of message received. The sounder can be silenced by one press of the "DELETE" switch.

Review Memory

The Review Memory holds the last 12 messages decoded, regardless if they are, or are not, entered to the Display Memory.

The contents of this memory will differ from the contents of the Display Memory if consecutive, redundant IDs have been decoded, or if any IDs have been deleted from the Displays.

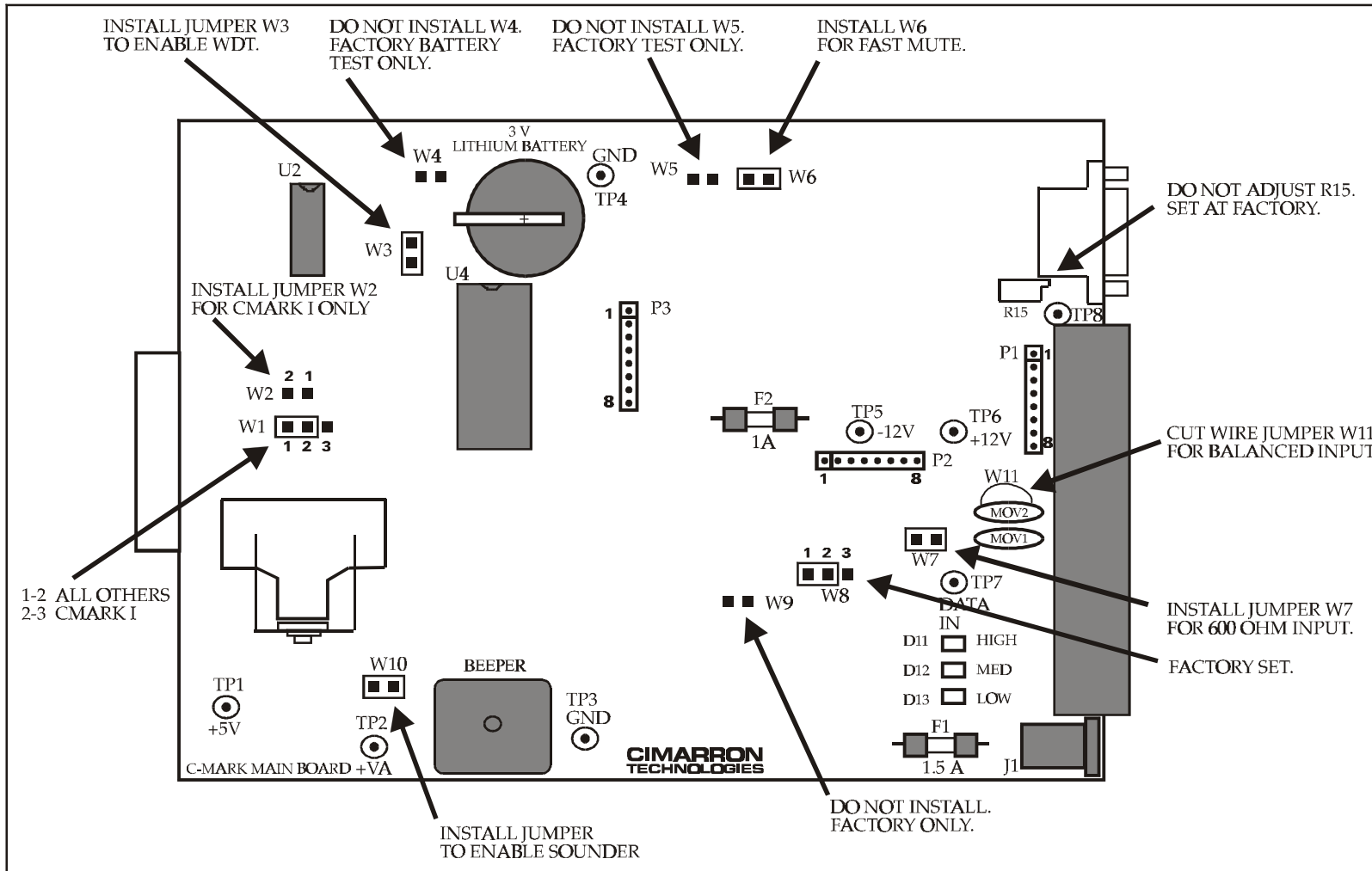
TK-880 Software Programming

Program the Kenwood TK-880 as shown below.

Record of Revisions

Revision Number	Date	Section	Page(s) #	Notes
A	3/16/00			Fleetsync version
B	7/17/00			Reformatted for Word.

Jumpers – Rev G PCB



■ ■ = JUMPERS SHOWN AS SHIPPED

CIMARRON TECHNOLOGIES	8/28/96
JUMPER LOCATIONS REV F BOARD	1 of 1

Schematic

