OPERATIONS and USER LEVEL PROGRAMMING

PROGRAMMING KEYS:
THE *, 0, AND # ARE USED FOR: PROGRAMMING FUNCTIONS
ACTIVATING PROGRAMMED FEATURES
DTMF TONES

REFERENCE: .....m=Manual Dial
tm=Temporary Memory
ulp=User Level Programming
tlp=Tech Level Programming

TO USE:.....m.....DIRECT DTMF ENCODING, Keys 1-9 and A-D (16 Key version) instantly generate DTMF tones.
(Manual Dial) *, 0, and # must be pressed for at least a 1/2 second when it is the first key pressed. (Unit auto resets 2.3 seconds after the last keystroke.)

SIDETONE:.....Beeps Confirm:
USER LEVEL OPERATION: .....DTMF, Memory, ANI, Store & Send, LNR, Errors, Keyboard-Auto-Reset after 2.3 seconds, Version Announcement.
USER LEVEL PROGRAMMING:.....Memory Open, Entry, Full, Auto Close and Errors.
TECH LEVEL PROGRAMMING:.....Open, Entry, Errors, Auto Close and Forced Close.

ANI SEND: .....* * Sends the ANI * position.
Sends the ANI # position.

MEMORY SEND:.....25 Places, 30 digits max.
EXAMPLE: To program memory 01 .....#01. To send.....001
To program memory 25 .....#25. To send.....025
Press any key to stop, AKS.

LNR: .....tm (Temporary Memory).....LAST NUMBER REDIAL.....000 will send last manually dialed number. 10 DPS (DEFAULT). Adjustable from tlp;31-33 (Tech Level Programming). Power off clears tm.

AKS:.....ANY KEY STOP. Any key pressed will stop sending.

VERSION ID:.....*1 will announce Version by number of Beeps, 1 sec & 100 ms, e.g., " ----" = ver 4. 0

CW/MORSE ID:.....

*2= DOT	(. 50ms)	770hz	ref: 10DPS=20WPM= 50/150	100ms	Pause (tlp32)
*4= PAUSE	(100ms)		5DPS=10WPM=100/300	200ms	Pause (tlp33)
*5= DASH	(- 150ms)	770hz			

PTT DISABLE: .....tm .....*0 will Disable PTT & SIDETONE. All other functions and output remain normal.
*8 will Enable PTT. Power off, then on = PTT Enable.

MANUAL STORE & SEND: .....tm .....30 digits max. Sends @ 10dps. (DTMF MEMORY STRING ADJUSTABLE)
0*.....("Beep Beep").....ENTER numbers----------, Auto Close. ("Beep Beep").
0#.....Sends numbers.....Clears with 0*.

AUTO STORE & SEND:.....tlp .....30 digits max.
Manually entered digits are stored and sent 2.3 seconds after the last digit entered. tlp;00-01.
Will send at the LNR speed, 10 DPS DEFAULT, adjustable from tlp;31-33.

PROGRAMMING EXAMPLE

EXAMPLE 1:----------1 323 466 5444 into MEMORY LOCATION 01

PRESS #01...Wait for the SIDETONE ("Beep Beep")...this confirms that the memory 01 is open and waiting for the number to be entered.

ENTER the desired numbers...e.g., 1 323 466 5444.
After 2.3 seconds from the release of last keystroke the memory auto closes...confirmed by "Beep".

TO SEND: .....Press 001.....This sends memory location 01.
025.....This sends memory location 25.
Press any key to stop, AKS.

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EXAMPLE 2:----------

#3 #4 #2 #0
(5dps) 176 (PAUSE W/PTT drop) (10dps) 1 323 466 5444, (WAIT) *80# into MEMORY LOCATION 02

For Memory Location 02 using SPEED ADJ, PAUSE ADJ and the WAIT state, the number and command sequence to be programmed is...#3 176 #4#2 1 323 466 5444 #0 **80##.
(Numbers proceeded by # indicate DIAL SPEED, PAUSE and WAIT functions).
(To enter a * or # into the string, enter * or # twice, e.g., **80##; this will reproduce as a *80#.)

PRESS #02...Wait for the SIDETONE ("Beep Beep")...this confirms that the memory 02 is open and waiting for the number to be entered.

ENTER the desired numbers...e.g., #3 176 #4#2 1 323 466 5444 #0 **80##.
After 2.3 seconds from the release of last keystroke the memory auto closes...confirmed by "Beep."

TO SEND: .....Press 002.....This sends your Memory Location 02.
Press any key to stop, AKS.

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EXAMPLE 3:----------MEMORY CONNECT .Programming memory 03, LONG PAUSE and connecting to memory 04.

#9 #804
1 323 466 5444 (LONG PAUSE) 1 323 466 5444 (MEMORY CONNECT to MEMORY LOCATION 04)

Memory Connect (#8) is ENDLESS. This STRING ADJUSTMENT is limited by the system requirements and by your imagination. This Command (#8) will connect MEMORIES to MEMORIES in conjunction with any MEMORY STRING ADJUSTMENT and WILL LOOP.

PRESS #03...Wait for the SIDETONE ("Beep Beep")...this confirms that the memory 03 is open and waiting for the number to be entered.

ENTER the desired number...e.g., 1 323 466 5444 #9 1 323 466 5444 #804
After 2.3 seconds from the release of last keystroke the memory auto closes...confirmed by the "Beep".

PRESS #04...Wait for the SIDETONE ("Beep Beep")...this confirms that the memory 04 is open and waiting for the number to be entered.

ENTER the desired number...e.g., 1 323 466 5444.
After 2.3 seconds from the release of the last keystroke the memory auto closes...confirmed by "Beep".

TO SEND: .....Press 003...This sends your Memory Location 03 and connects to memory 04.
NOTE: if a #803 were placed at the end of memory 04, a LOOP would occur.
Press any key to stop, AKS.

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EXAMPLE 4:----------CW/MORSE ID....*2 is A DOT, *5 is a DASH, *4 is a PAUSE
PROGRAMMING "CQ" into memory 1 and repeating...

"C" (pause) "Q" (1sec pause w/ptt) (memory connect to memory 01)

_ . _ . _ _ . _
*5*2*5*2 *4 *5*5*2*5 #5 #801

TO SEND: .....Press 001...This sends your Memory Location 01. #801 commands a loop; memory will continue to send.

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EXAMPLE 4A:----------CW/MORSE ID...
PROGRAMMING "WB6BJM" into memory 01,03,04 (this will also program into the AE-1)

MEMORY 1: "W" (pause) "B" (pause) (memory connect to memory 03)

. _ _		_ . . .		
*2*5*5	*4	*5*2*2*2	*4	#803

MEMORY 3: "6" (pause) "B" (pause) (memory connect to memory 04)

_		_ . . .		
*5*2*2*2*2	*4	*5*2*2*2	*4	#804

MEMORY 4: "J" (pause) "M"

. _ _ _		_ _
*2*5*5*5	*4	*5*5

TO SEND: .....Press 001...This will send MEMORY 01,03 and 04...ANY OTHER STRING MAY BE ADDED.

DTMF MEMORY STRING ADJUSTMENTS (ulp)

SPEED ADJ:.....#1 (20dps 25/25 ms)
ulp #2 (10dps 50/50 ms) .....(DEFAULT)
(User Level Programming) #3 (5dps 100/100 ms)

PAUSE ADJ:.....#4 1 sec w/ptt drop, each #4 extends 1 sec, max pause=mem space.....
ulp tlp;34-36.....1 sec (DEFAULT)
#5 1 sec w/ptt on, each #5 extends 1 sec, max pause=mem space .....
tlp;34-36.....1 sec (DEFAULT)

DIGIT EXPAND:.....#6 Adds 200 ms for each #6 entered, max=mem space=2.8 sec.
ulp #7 Adds 2 sec for each #7 entered, max=mem space=28 sec.

MEMORY CONNECT:.....#8 Connects memories. Connects to any memory number, WILL LOOP; sends continuously.
ulp To stop; AKS.
#802 Connects to memory 02
#825 Connects to memory 25
#800 Connects to STORE & SEND
#8* Connects to * ANI
#8# Connects to # ANI

LONG PAUSE: ADJ .....#9 1 minute w/ptt drop, each #9 extends 1 minute, max pause=mem space.....
ulp tlp;37-38.....1 minute (DEFAULT)

WAIT:..... #0 WAIT...Stop Send.
ulp PTT drops.
Resumes sending by any keypad depression.
Resumes sending by low voltage (GND) on GRAY wire (P2-C).

FOR MEMORY DIAL PROGRAMMING ONLY:
16 KEY OUTPUT FROM 12 KEY.....Press *3, produces "A" tone
ulp Press *6, produces "B" tone
Press *9, produces "C" tone
Press *#, produces "D" tone

TECH LEVEL PROGRAMMING (tlp)

TO ACCESS:.....tlp .....Press # and * simultaneously for 3 SECONDS. "Beep-Beep" confirms the Tech Level Program mode is OPEN. ENTER your options:

You may continue to enter as many options as you wish; "Beep-Beep" confirms each entry. Auto Close occurs 10 seconds after the last entry, or press # for instant closure.

00.....MANUAL SEND.....(DEFAULT)
01.....AUTO STORE & SEND.....Sends 2.3 sec after the last entry.
02.....HIGH TONE 0db

03.....HIGH TONE +2db.....(-low).....(DEFAULT)
06....m.....AUDIO OUTPUT DELAY.....DELAY between PTT & AUDIO OUTPUT06 sets to 0.....(DEFAULT)
Each 6=200 ms 2 sec max. For MANUAL DIAL only. When pressing keys, the AUDIO OUTPUT DELAY occurs on the 1st digit only. Each digit thereafter has no delay. Resets to DELAY function after 2.3 seconds of no key action. Does NOT delay PTT.
07.....MANUAL DTMF OUTPUT TIME...Continuous.....(DEFAULT)
08.....MANUAL DTMF OUTPUT TIME...200 ms
09.....MANUAL DTMF OUTPUT TIME...500 ms
17.....PTT; AUDIO OUTPUT
DELAY ADJ.....AUDIO OUTPUT DELAY after PTT (for all ANI's, MEMORIES, & LNR)17 clears PTT
Delay to 400 ms .....(DEFAULT)
Each 7 adds 200 ms, max 3 sec†, next 7†† past 3 sec=00 ms PTT SEND DELAY.
(†3 sec max=13 strokes, ††00 ms=14 strokes, 200 ms=15 strokes). Reset 17=400 ms
18....m.....PTT;KEY HOLD
DELAY ADJ.....MANUAL DIAL ONLY Clears PTT Delay to 100 ms .....(DEFAULT)
Each 8 adds .5 second, max 10 sec.

20.....Sounder Off
21.....Sounder Level Low
22.....Sounder Level High .....(DEFAULT)
23.....Sounder Single Tone.....(DEFAULT)
24.....Sounder DTMF

30.....ANI, MEMORIES, LNR, AUTO STORE & SENDTLP 40/41 Tone off/on time
31.....ANI, MEMORIES, LNR, AUTO STORE & SEND20 dps
32.....ANI, MEMORIES, LNR, AUTO STORE & SEND10 dps.....(DEFAULT)
33.....ANI, MEMORIES, LNR, AUTO STORE & SEND 5 dps
34.....PAUSE DELAY.....1 sec.....(DEFAULT)
35.....PAUSE DELAY.....3 sec
36.....PAUSE DELAY.....5 sec
37.....LONG PAUSE DELAY.....1 minute.....(DEFAULT)
38.....LONG PAUSE DELAY.....4 minute

MX 40.....TONE OFF.....0000=TIME OFF in ms. e.g. 400015=15ms off
MX 41.....TONE ON.....0000=TIME ON in ms. e.g. 410047=47ms on (max time 9999ms;10sec)

80.....DTMF TONE TEST .....SHORT
Each single DTMF tone lasts 2.3 sec.
Row 1,2,3,4 Column 1,2,3,4 Each digit 0-9 ABCD*# for 2.3 sec each.
Press any key to stop, AKS.

81.....DTMF TONE TEST .....LONG
Same as 80 except tones last 10 sec each.
DTMF tones last 2.3 sec.
Press any key to stop, AKS.

82.....DTMF TONE TEST .....0-9 ABCD*# @ 5dps #4 @ 10dps #4 @ 20dps

MX 86.....PROGRAM TEST A .....#1 01234567 #2 89**## *3 #3 *6 *9 #6 *#
(Loads all Memories 01-25) (99 clears).

MX 87.....PROGRAM TEST B

MX 88.....

MX 897476....PROGRAM TEST C.....Loads Number Sequence into * # ANI.
123 #4 #3 456 #5 #1 789 #60 #7 ** #0 ## *3
Program ANI to clear.

90.....Disables Keyboard
91.....Enables Keyboard .....(DEFAULT)
950000.....Keyboard Enable.....Enables keyboard operation after it has been DISABLED by the "P2-A" input on P2.

CUSTOM CODE AVAILABLE UPON REQUEST.

96.....MEMORY CLONE SEND .....Clone Send from Mic Mute on WHITE wire (P2-B). * Will send. Upon completion of Cloning TLP will not AUTO CLOSE. # or Power off will close. Will not Clone * # ANI

97.....MEMORY CLONE RECEIVE .....Clone Receive into BLUE wire (P2-E). "Beep Beep" will acknowledge completion. Will not AUTO CLOSE

98.....DEFAULT .....Defaults all functions.

99.....DEFAULT/MEMORY CLEAR .....Defaults all functions, clears all memories.

SINGLE TONE OUTPUTS

ROW/COLUMN	STANDARD DTMF TONES	PIPO	% DIFF
0+1= Row 1	697 hz	699 hz	+.30%
0+2= Row 2.	770 hz	770 hz	0%
0+3= Row 3	852 hz	850 hz	-.20%
0+4= Row 4	941 hz	943 hz	+.20%
0+5= Col 1	1209 hz	1211 hz	+.16%
0+6= Col 2	1336 hz	1340 hz	+.29%
0+7= Col 3	1477 hz	1480 hz	+.20%
0+8= Col 4	1633 hz	1631 hz	-.12%
0+9= 1khz test tone		1002 hz	+.20%

COMMAND INDEX

*1..... Version ID	#1..... 20dps
*2..... . = 50ms	#2..... 10dps
*3..... "A"	#3..... 5dps
*4..... PAUSE=100ms	#4..... PAUSE 1-3-5 SEC w/PTT Drop
*5..... - = 150ms	#5..... PAUSE 1-3-5 SEC w/PTT On
*6..... "B"	#6..... DIGIT EXPAND 200ms
*7..... tlp 40/41 off/on time	#7..... DIGIT EXPAND 2sec
*8..... PTT ENABLE	#8..... MEMORY CONNECT
*9..... "C"	#9..... LONG PAUSE ADJ 1-4 MIN w/PTT Drop
*0..... PTT DISABLE	#0..... WAIT
**..... * ANI SEND	#*..... tlp
*#..... "D"	##..... # ANI SEND

*1.....1002hz in the pgm mode

MX 01 off less	98 off less
MX 02 on more	99 on more

MX ver35 09-12-94 Margin Set To 126
MX PIP35 S.19 09-12-94
MX.....all below this line
EPROM, BPS Programmer
Special Modifications for custom 950000 -NUMBERS ONLY-
(screen)
no errors
m 300 303
FF
1,ret
FF
2,ret
FF
3,ret
FF
4,ret....New code is now 951234
FOR 95 READ OUT, low to the 4 pcs, pwr up; dtmf will read out.

MX = MANUAL EXCLUDE