



followed by the name or number of the most recently placed call. Use [#] or [\*] to scroll and [Snd] to call displayed number.

Super Speed Dialing: Directory location number, [Snd]

Changing Entries: Press [Rcl] and the 2-digit location number so that the number to be changed is displayed. Press and release [Clr] to back out each of the digits. Enter a new number and press [Sto].

Call Number Displayed: [Snd]

Microphone Muting: Press [Fcn], [6].  
To unmute, press [Fcn], [6]

Lock Unit: [Fcn], [5] or [LOCK]  
Unlock: Three digit unlock code. If you make an error, [Clr] and enter again.

Automatic Lock: [FCN], [6] (not all phones)  
"EnAbLE" will appear if compatible.

Display Unlock Code: Press [Fcn], [0], your six-digit security code, [Rcl].

Changing Your Unlock Code: Press [Fcn], [0], your six-digit security code, your NEW 3-digit unlock code, [Sto].

Review Battery Meter: Press [Fcn], [4] and release.

Adjust Volume: Earpiece - Press and hold [Vol] to increase.  
Release, press again to decrease.  
Ringer - [Fcn], then Vol as above.

Recall Own Phone Number: [Rcl], [#]

Individual Call Timer: [Rcl], [#], [#]

Resettable Call Timer: [Rcl], [#], [#], [#]

Reset Resettable Call Timer: [Fcn], [0], [7], [Clr]

Cumulative Call Timer: [Rcl], [#], [#], [#], [#]

Access Features: Press [Fcn], [1]. To change features, press [\*] and [#] to scroll and [Clr] to change.  
To exit feature menu, press [END].

Review/Scroll Menu Features: Press [\*] or [#]  
Status Review: [Fcn], [0], [9], [Rcl], [#] or [\*] scrolls messages. To end press [END].

Changing System Type: Press [Rcl], [\*]. Repeatedly press [\*] until the desired system type appears. To select press [Sto].

Outgoing Call Restrictions: Press [Fcn], [0], 6-digit security code, [1], [Sto]. Phone will place calls only from memory locations 1-10.  
To change back to unrestricted dialing press [Fcn], [0], 6-digit security code, [4], [Sto].

Switch to Second Phone Number: [Rcl], [#], [Sto] (Press [Clr] to finish viewing newly activated number).

	Key	1st Press	2nd Press	3rd Press	4th Press
	2	A	B	C	
	3	D	E	F	
Alpha	4	G	H	I	
Entry	5	J	K	L	
Mode	6	M	N	O	

7	P	Q	R	S
8	T	U	V	
9	W	X	Y	Z

Menu Features: For a more detailed description or instructions on use, consult the user manual. Not all features listed are available on all models.

Message	Description
1 Min Beep	One Minute Beep
Answer M Key	Multiple Key Answer
Auto Answer	Automatic Answer
C Scan	System Type Selection
Call Screen	Incoming Call Screening
Emrcy Off	Emergency Dialing
Home	System Type Selection
Level 1-6	Call Restrictions (Service Levels)
Lock Auto	Automatic Lock
Name Pref'd	Memory Recall Preference
Pin Active	PIN Code Activation
Pref'd SIDs	System Type Selection
Remind Beeps	Reminder Beep Off
Ringer Silent	Alert Off (Silent Ringer)
Scan A	System Type Selection
Scan AB	System Type Selection
Scan B	System Type Selection
Scan BA	System Type Selection
Scrpd Silent	Silent Scratch Pad
Signal Off	Signal Strength Meter
Silent Keypad	Feedback Tones Off
Std	Features Set as Standard
Theft Alarm	Theft Alarm
Timer Auto	Automatic Display Timer
Vox Mode	Voice Operated Transmission
Vibrat Mode	VibraCall

I would like to add that while I have extensively worked on finding additional test mode commands, I (nor anyone else) have ever worked with the normal operation commands as listed above. For example, above you will notice sequences with [Fcn], [1] or [Fcn], [0], [7]. This is totally unexplored territory. Happy hacking :) See entering test mode on the new 95xx phones.

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 Activating the PIN in PIN READY cellfones                      Thanks to fringe@rndhse.chi.il.us

(You cannot use their fone without the PIN activated)

Activating the PIN Ready feature in Motorola fones:

1. Enter user menu - press FNC,1 or FNC,Menu
2. Select Pin Active in menu and press \* once or until "Pin Active"

- appears in the fone display.
3. Enable 'Pin Active' feature - press CLR.  
A small square will appear before 'Pin Active' sayings its enabled.
  4. Exit user menu - press END

To store the PIN into memory:

1. Enter the specific PIN code - press XXXX
2. Store four digit PIN into memory location 07 - press STO,0,7
3. Return to normal operation - press CLR

To initiate a call using the PIN Ready feature:

1. Enter the phone number you wish to call:  
press (XXX)XXX-XXXX, SND
2. You will hear two short rings, then press SND again. The PIN Ready feature will automatically send the PIN code you previously stored into memory location 07 and initiate your call.

-----  
What is EE3??

EE3 is the software that Motorola has added to the cellular product line which provides feature enhancements and increased security by restricting ESN transfer...

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Why did the changes take place...

Due to the FCC Rule change, all new cellular telephones that were introduced after Jan. 1, 1995 with new FCC IDs must restrict ESN transfer. Phones introduced prior to this date are "grandfathered" or not required to be compliant with this rule.

-----  
How ya can tell the difference between an EE3 and a non-EE3 fone.

These fones will be identified with the marking of EE3 on the FCC label (look on da back of da fone)

-----  
How does the fone change?!

Some of the changes EE3 phones have are feature differences, accessory compatibility, and service differences.

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Which fones have the PIN CODE feature?!

If the phones has EE3 on the back label, then the fone has the PIN CODE feature; with the exception of the EE3 TeleTacs and the pre-AC-P300 boxed contours.

-----  
Can a 3-watt VA be used with EE3 fones?!

No, the existing 3-watt VA is not compatible with EE3 fones. The following part numbers are for the new 3-watt booster for EE3 fones

and for conversion kits for existing 3-watt kits. The 3-watt booster has its own handset that comes with it.

Deluxe Booster w/Micro Car Handsfree Kit (EE3 pocket and flip)  
# S-5415  
Deluxe Booster w/Micro Car Handsfree Kit (EE3 Elite) <no, eleet!>  
# S-5093  
Deluxe Booster Conversion Kit (EE3 pocket and flip)  
# S-5094  
Deluxe Booster Conversion Kit (EE3 Elite)  
# TBA

-----

Which Motorola fones have the new Lock feature?!

All EE3 fones have the NEW lock feature - FCN,5 and STO to lock it

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Well, it seems a lot of people have been trying to figure out the date of manufacture of Motorola cellular phones. This is easily accomplished by locating the MSN (Mechanical Serial Number) somewhere on the telephone. It can be 10 or 11 digits. If there is no 11th digit, warranty period is one year. If there is an 11th digit, the warranty period can be determined from the following charts. Without a proof of purchase, warranty date is determined by adding 3 months to the date of manufacture.

MSN Example: 194GSTxxxxW

194 is the Accounting Product Code (APC) and has little use.  
G is the location of manufacture  
S is the Year Code of manufacture  
T is the Month Code of manufacture  
xxxx is the actual serial number (hex) of that telephone  
W is the Warranty Period

Year Code	Year	Month Code	Month	Warranty Period	Definition
H	1983	A or B	January	A	1 yr w/ possible MCSI coverage
J	1984	C or D	February	B	3 yrs w/ possible MCSI coverage
K	1985	E or F	March	C	5 yrs w/ possible MCSI coverage
L	1986	G or H	April	D	2 yrs w/ possible MCSI coverage
M	1987	J or K	May	E	No Warranty
N	1988	L or M	June	F	90 Days OEM only
P	1989	N or P	July	H	3 Years, Canada Only
Q	1990	Q or R	August	L	3 Years, OEM Only
R	1991	S or T	September	M	1 Year, OEM Only
S	1992	U or V	October	N, P, X	5 Yrs
T	1993	W or X	November	Q, R, S, Y, Z	3 Yrs
U	1994	Y or Z	December	T	OEM Telephone
V	1995			U	90 Days (Reconditioned Units)
W	1996			W	4 Yrs.
X	1997				
Y	1998	Location of Manufacture Code			Location
Z	1999		G		Libertyville, IL.

NOTES: Some units have dual NAM's.  
The ESN prefix is 130 decimal, 82 hex.  
Motorola: 1-800-331-6456

There are MANY different models of Motorola phones sold under various brand names, if you think it's a Motorola, it probably is.

Determine which access sequence to use:

HAND HELD PORTABLE MODELS

If the phone has a FCN button and no MENU button use sequence 1.  
If the phone has no FCN button use sequence 2.  
If the phone has a MENU button and a FCN button use sequence 4.

INSTALLED MOBILE PHONES AND TRANSPORTABLE MODELS

If the phone has no FCN button and no RCL button use sequence 3.  
If the phone has a FCN button use sequence 4.  
If the phone has a MEM button use sequence 5.  
If the phone has a RCL button and no FCN button use sequence 6.

SEQUENCE#	ACCESS CODE
1	FCN (SECURITY CODE TWICE) RCL
2	STO # (SECURITY CODE TWICE) RCL
3	CTL 0 (SECURITY CODE TWICE) *
4	FCN 0 (SECURITY CODE TWICE) RCL
5	FCN 0 (SECURITY CODE TWICE) MEM
6	CTL 0 (SECURITY CODE TWICE) RCL

The default security code is 000000. The CTL (control) button is the single black button on the side of the handset.

NAM programming:

1. Turn the power on.
2. Within ten seconds enter the access sequence as determined above.
3. The phone should now show "01" in the left of the display, this is the first programming entry step number. If it does not the security code is incorrect, or the programming lock-out counter has been exceeded. In either case you can still program the unit by following the steps under TEST MODE PROGRAMING below.
4. The \* key is used to increment each step:

Each time you press \* the display will increment from the step number, displayed on the left, to the data stored in that step, displayed on

the right. When the data is displayed make any necessary changes and press \* to increment to the next step number.

5. The SND key is used to complete and exit programming when any STEP NUMBER is displayed.

If you have enabled the second phone number bit in step 10 below then pressing SND will switch to NAM 2. Steps 01 thru 06, 09 and 10 will repeat for NAM 2, the step number will be followed by a "2" to indicate NAM two.

5. The CLR key will revert the display to the previously stored data.
6. The # key will abort programming at any time.

#### PROGRAMING DATA:

STEP#	#OF DIGITS/RANGE	DESCRIPTION
01	00000 - 32767	SYSTEM ID
02	3 DIGITS	AREA CODE
03	7 DIGITS	TEL NUMBER
04	2 DIGITS	STATION CLASS MARK
05	2 DIGITS	ACCESS OVERLOAD CLASS
06	2 DIGITS	GROUP ID (10 IN USA)
07	6 DIGITS	SECURITY CODE
08	3 DIGITS	LOCK CODE
09	0333 OR 0334	INITIAL PAGING CHANNEL
10	6 DIGIT BINARY	OPTION PROGRAMING (SEE NOTE 1)
11	3 DIGIT BINARY	OPTION PROGRAMING (SEE NOTE 2)

#### NOTES:

Take care with Motorola's use of "0" and "1". Some options use "0" to enable, some use "1".

1. This is a 6 digit binary field used to select the following options:

Digit 1: Internal handset speaker, 0 to enable.  
Digit 2: Local Use Mark, 0 or 1.  
Digit 3: MIN Mark, 0 or 1.  
Digit 4: Auto Recall, always set to 1 (enabled).  
Digit 5: Second phone number (not all phones), 1 to enable.  
Digit 6: Diversity (Two antennas, not all phones), 1 to enable.

2. This is a 3 digit binary field used to select the following options:

Digit 1: Continuous DTMF, 1 to enable.  
Digit 2: Transportable Ringer/Speaker, 0=Transducer, 1=Handset.  
Digit 3: 8 hour time out in transportable mode, 0 to enable.

On newer models, they have added and changed some numbers. The numbers as of the 3/27/92 manual are as follows:

1. The 6 digit binary field is still the same.
2. The 3 digit binary field has become a 5 digit binary field.

Digit 1:	Failed Page Indicator	1=Disabled;0=Enabled
Digit 2:	Motorola Enhanced Scan	1=Enabled; 0=Disabled
Digit 3:	Long Tone DTMF	1=Enabled; 0=Disabled
Digit 4:	Transportable Internal Ringer Speaker	1=Handset; 0=Transdcr
Digit 5:	Eight Hour Timeout	1=Disabled;0=Enabled

T\*E\*S\*T\*\*M\*O\*D\*E\*\*\*\*\*S\*E\*C\*T\*I\*O\*N\*\*4

#### TEST MODE ACCESS:

NEWER 95xx PHONES (Thank you Motorola!!!)

Many newer phones don't require grounding. If your software version number is 9526 (I think) or newer, enter this:

[FCN] [0] [0] [\*] [\*] [8] [3] [7] [8] [6] [6] [3] [3] [STO]

In case you have trouble remembering the number sequence, it spells out "TESTMODE." Leave it to Motorola to make this easier and easier all the time. I have used this and it does work. This command just backs up my claim even further that esn changing via handset is a reality. It's a matter of finding the correct combination of keys.

Normal test mode commands work like usual from then on.

For some odd reason, this hasn't been included in all the 95xx phones. I believe they started it in Software 9526. This is only an estimate, so if you have a 95xx flip, let me know what software version you have and whether it works or not so this date can be isolated. Mine is a 9562 that worked.

#### INSTALLED MOBILE PHONES AND TRANSPORTABLE MODELS

To enter test mode on units with software version 85 and higher you must short pins 20 and 21 of the transceiver data connector. An RS232 break out box is useful for this, or construct a test mode adapter from standard Radio Shack parts.

For MINI TR or Silver Mini Tac transceivers (smaller data connector) you can either short pins 9 and 14 or simply use a paper clip to short the hands free microphone connector.

#### HAND HELD PORTABLE MODELS:

There are two basic types of Motorola portable phones, the Micro-Tac series "Flip" phones, and the larger 8000 and Ultra Classic phones. Certain newer Motorola and Pioneer badged Micro-Tac phones do not have a "flip", but follow the same procedure as the Micro-Tac.



## 8000 & ULTRA CLASSIC SERIES:

If you have an 8000 series phone determine the "type" before trying to enter test mode. On the back of the phone, or on the bottom in certain older models, locate the F09... number this is the series number. If the FOURTH digit of this number is a "D" you CAN NOT program the unit through test mode, a Motorola RTL4154/RTL4153 programmer is required to make any changes to this unit.

Having determined that you do not have a "D" series phone the following procedure is used to access test mode:

Remove the battery from the phone and locate the 12 contacts at the top near the antenna connector. These contacts are numbered 1 through 12 from top left through bottom right. Pin 6, top right, is the Manual Test Mode Pin. You must ground this pin while powering up the phone. Pin 7 (lower left) or the antenna connector should be used for ground. Follow one of these procedures to gain access to pin 6:

1. The top section of the battery that covers the contacts contains nothing but air. By careful measuring you can drill a small hole in the battery to gain access to pin 6, alternately simply cut the top off the battery with a hack saw. Having gained access use a paper clip to short pin six to the antenna connector ground while powering up the phone.
2. If you do not want to "destroy" a battery you can apply an external 7.5 volts to the + and - connectors at the bottom of the phone, ground pin 6 while powering up the phone as above.
3. You can also try soldering or jamming a small jumper between pins 6 and 7 (top right to lower left), or between pin 6 and the antenna connector housing ground. Carefully replace the battery and power up the phone. Use caution with this method not to short out any other pin.
4. A cigarette lighter adapter, if you have one, also makes a great test mode adapter as it can be disassembled to give you easier access to pin 6. Many are pre marked, or even have holes in the right location. This is because they are often stamped from the same mold that the manufacturer uses for making hands free adapter kits and these kits require access to the phone's connectors.

## ULTRA CLASSIC II SERIES:

Ground Pin 2 to pin 4.

## MICRO-TAC "FLIP" SERIES:

This phone follows similar methods as outlined for the 8000 series above.

Remove the battery and locate the three contacts at the bottom of the phone, the two outer contacts are raised and connect with the battery. The center contact is recessed, this is the Manual Test Mode connector.

Now look at the battery contacts, the two outer ones supply power to the phone, the center contact is an "extra" ground. This ground needs to be shorted to the test mode connector on the phone. The easiest way to do this is to put a small piece of solder wick, wire, aluminum foil or any other conductive material into the recess on the phone. Having done this carefully replace the battery and turn on the power, if you have been successful the phone will wake up in test mode.

#### GENERAL NOTES:

HANDSETS: Most Motorola handsets are interchangeable, when a handset is used with a transceiver other than the one it was designed for the display will show "LOANER". Some features and buttons may not work, for instance if the original handset did not have a RCL or STO button, and the replacement does, you will have to use the control \* or control # sequence to access memory and A/B system select procedures.

#### LOCK/UNLOCK PROCEDURES:

Phones with "LOCK" buttons: Press lock for at least 1/2 a second.

Phones with a "FCN" button: Press FCN 5, note that 5 has the letter's "J,K, and L" for lock.

Phones with no FCN or LOCK button: Press Control 5, control is the black volume button on the side of the handset.

#### SYSTEM SELECT PROCEDURES:

Phones with a RCL button: Press RCL \*, then \* to select, STO to store.

Phones with no RCL button: Press Control \* then \* to select, # to store.

Options are:    CSCAN:       Preferred/Non preferred with system lockout.  
                  Std A/b, or Std b/A: Preferred/Non preferred.  
                  SCAN Ab, or SCAN bA: Non preferred/Preferred  
                  SCAN A:    "A" ONLY  
                  SCAN b:    "B" ONLY  
                  HOME:       Home only  
                  Pref'd SIDS: Service within the entered SIDS (up to 15)

(these are typical options, some phone's vary. C-Scan is only available on newer models and does not appear unless programmed, see below.)

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#### TEST MODE

NOTE: Not all commands work on all telephones. If a command is not valid the display will show "ErrOr." Not all numbers have been assigned. Not all numbers have been listed here. Some commands were intended only for Motorola factory applications. (This is the disclaimer in the technical training manual. I have included all of the other commands I

have discovered one way or another. Some that say no function do have a function but it is unknown until it is figured out.)

Three test commands are significant for programming and registering the telephone for service: see full descriptions under TEST MODE COMMANDS.

32# Clears the telephone. (Older Motorola allowed either three or fifteen changes in the MIN. After that, the phone had to be sent to Motorola to reset the counter. This is the command they use.)

38# Displays the ESN

55# This is the TEST MODE PROGRAMMING (as described below).

#### TEST MODE DISPLAY:

Test mode consists of two separate levels. When the telephone is first placed in Test Mode, it is in the STATUS DISPLAY LEVEL. The display will be scrolling (or flashing), or it will be locked. If locked, enter the unlock code and the display will begin scrolling. If the unlock code is not known, press #. By pushing the # key, the technician causes the cellular telephone to change to its SERVICING LEVEL. The display will be US'. There are five types of display, depending on the model of the telephone: a 16 character display, a 14 character display, a 10 digit display (with two versions), an 8 character display, and a 7 character display. The status display is different in analog operation than in a TDMA call.

NOTE: Use of a loaner handset is allowed in servicing level, but may not be allowed in the status display level. A locked telephone will not show the status display, but will enter the servicing level.

#### 14 Character Analog Call Display

```
+-----+
| A B C D E F G |
| H I J K L M N |
+-----+
```

ABC = Channel  
D = \*Call Processing Mode  
EFG = RSSI  
H = \*(D) SAT  
I = 1=TX on  
J = 1=Signalling Tone On  
K = Power Level (0-7)  
L = 1=Control Channel  
M = 1=RX Audio off  
N = 1=TX Audio off

#### 14 Character TDMA Call Display

```
+-----+
| A B C D E F G |
| H I J K L M N |
+-----+
```

ABC = Channel ("A" in the position indicates a channel above 1000)  
D = \*Call Processing Mode  
EFG = RSSI  
HIJ = Digital Verification Color Code (1-255)  
K = Power Level (0-7)  
L = 1=TX on  
M = 1=Bit Error Rate (0-7)  
N = 1=Audio Muted

\*Call Processing Mode:  
BLANK = AMPS  
A = NAMPS High Sub-Channel  
B = NAMPS Center Sub-Channel  
C = NAMPS Low Sub-Channel

\*Call Processing Mode  
BLANK = AMPS  
1 = Slot 1, half rate  
2 = Slot 2, half rate  
3 = Slot 3, half rate

\*\* (D) SAT:  
0 = 5970 Hz  
1 = 6000 Hz  
2 = 6030 Hz  
3 = No SAT

4 = Slot 4, half rate  
5 = Slot 5, half rate  
6 = Slot 6, half rate  
7 = Slot 1, full rate  
8 = Slot 2, full rate  
9 = Slot 3, full rate

-----  
0-6 = DSAT Vector  
7 = No DSAT

NOTE: The Analog Call  
Display will always  
show when on a control  
channel.

-----  
# Enter SERVICING LEVEL from Test Command Mode.

00# no function

01# Restart (Re-enter DC power start-up routine.) On TDMA telephones, this command has the same effect as 13#.

02# Display Current Telephone Status (This is a non-altering version of the STATUS DISPLAY. On a 14 character display, all the information is shown. On a 7 character display only the information on the second line of a 14 character display is shown. On a 10 character display, all the information on the second line of a 14 character display plus the last three characters of the first line are shown.)

STATUS DISPLAY, ALTERNATES BETWEEN:

AAA BBB AAA = Channel Number (decimal) BBB = RSSI reading for channel  
CDEFGHI are as follows:

C = SAT frequency (0=5970, 1=6000, 2=6030, 3=no channel lock)

D = Carrier (0=off, 1=on)

E = Signalling tone (0=off, 1=on)

F = Power attenuation level (0 through 7)

G = Channel mode (0=voice channel, 1=control channel)

H = Receive audio mute (0=unmuted, 1=muted)

I = Transmit audio mute (0=unmuted, 1=muted)

Press \* to hold display and # to end.

03# Reset Autonomous Timer. This command results in the reset of the autonomous timer but does not provide any test function on these models.

04# Initializes Telephone to Standard Default Conditions:  
Carrier Off, Power Level 0, Receiver Audio Muted, Transmit Audio Muted,  
Signalling Tone Off, SAT Off, Resetting of Watch-Dog Timer Enabled,

DTMF and Audio Tones Off, Audio Path Set to Speaker

- 05# TX Carrier On (Key Transmitter)
- 06# TX Carrier Off
- 07# RX Audio Off (Mute Receiver Audio)
- 08# RX Audio On (Unmute Receiver Audio)

NOTE: It seems Motorola finally discovered that people were using this command to eaves-drop on cellular conversations. On MOST of the newer phones (95xx and up), this command when used with 11xxxx# will only work with the following channels:

11xxxx#		Tower Freq.	Mobile Freq.	Channel
#300	Tx	879.00	Rx 834.00	0300
#333	Tx	879.99	Rx 834.99	0333
#385	Tx	881.55	Rx 836.55	0385
#799	Tx	893.97	Rx 848.97	0799
#991	Tx	869.04	Rx 824.04	0800

- 09# TX Audio Off
- 10# TX Audio On
- 11(Ch.No.)# Set Transceiver to Channel xxxx (Receive and Transmit in Decimal; accepts 1, 2, 3, or 4 digits)  
  
see Section 9 for detailed information on this command
- 12x# Set Power Step to x; (0,1-7) 0=Maximum Power (3 Watts) 7=Minimum Power Out
- 13# Power Off (Shuts off the radio)
- 14# 10 kHz Signalling Tone On
- 15# 10 kHz Signalling Tone Off
- 16# Setup (Transmits a five word RECC message; each of the five words will be "FF00AA55CC33." Transmitter de-keys at the end of the message.)
- 17# Voice (Transmits a two word REVC message; each of the two words will be "FF00AA55CC33." Transmitter de-keys at the end of the message.)
- 18# C-Scan (Allows for entry of as many as 5 negative SID's for each NAM.)

Newer Motorola phones are equipped with a feature called C-Scan, this is an option along with the standard A/B system selections. C-Scan allows the phone to be programmed with up to five inhibited system ID's per NAM. This is designed to prevent the phone from roaming onto specified non-home systems and therefore reduce "accidental" roaming fees.

1. C-Scan can only be programmed from test mode, power phone up with the relevant test mode contact grounded (see above).
2. Press # to access test mode.
3. Press 18#, the phone will display "0 40000".
4. Enter the first inhibited system ID and press \*.

Continue to enter additional system ID's if required. After the 5th entry the phone will display "N2". Press \* to continue and add system ID's for NAM 2 as required.

5. If an incorrect entry is made (outside the range of 00000-32767) the display will not advance, press CLR and re-enter. Use a setting of 40000 for any un-needed locations.
6. When the last entry has been made press \* to store and press # to exit, turn off power.

or

[\*\*Phones without the C-Scan option used this command to SEND NAM.\*\*]

18# SEND NAM. Display shows AA BB. Where AA=Address and BB=Data. Displays the contents of the NAM, one address at a time, advanced by pressing the \* key. The following data is contained in NAM. The test is exited by depressing the # key.

SIDH	Sec. Code	
OPT. (1,2,&3)	MIN	
MIN1, MIN2	FCHNA	
SCM	FCHNB	
IPCH	NDED	
ACCOLC	CHKSUM	GIM

19# Display Software Version Number (4 digits displayed as year and week)

NOTE: Entering commands 20# through 23# or 27# causes the transceiver to begin a counting sequence or continuous transmission as described below. In order to exit from the commands to enter another test command, the # key must be depressed; all other key depressions are ignored.

20# Receive control channel messages counting correctable and uncorrectable errors. When the command starts, the number of the command will be displayed in the upper-right corner of the display. Entering a # key will terminate the command and display two three-digit numbers in the display. The first number is the number of correctable errors and the second is the uncorrectable errors.

21# Received voice channel messages counting correctable and uncorrectable errors. When the command starts, the number of the command will be displayed in the upper right-hand corner of the display. Entering a # key terminates the command and will display two three-digit numbers in display. The first is the number of correctable errors and the second



#	941 Hz + 1477 Hz	25	3636 Hz (not used in cellular)
10	697 Hz	26	4000 Hz (not used in cellular)
11	770 Hz	27	3555 Hz (not used in cellular)
12	852 Hz	28	4571 Hz (not used in cellular)
13	941 Hz	29	Turn DTMF off

Someone Please Check Out 24 thru 28 for accuracy. I had weak equipment.

34# Turn DTMF Off

35# Display RSSI ("D" Series Portable Only)

or

35x# Set Audio Path to x     x=0, V.S.P Microphone (Applies to mobiles only.)  
                           x=1, Speaker  
                           x=2, Alert  
                           x=3, Handset  
                           x=4, Mute  
                           x=5, External Telephone (Applies to Portables Only)  
                           x=6, External Handset (Applies to NEWER Portables)

36nnn# Scan (TDMA Telephones only. Scans the primary control channels and attempts to decipher the forward data stream. The display will show PASS1 if the strongest control channel was accessed, PASS2 if the second strongest was accessed, and FAIL if no control channel could be accessed.)

(nnn=Scan speed in milliseconds). Tunes from channel 1 to 666 in order. Entering a \* pauses the scan and displays current Channel Number and RSSI reading (AAA=Channel Number and BBB=RSSI Reading). When scan speed is 300 milliseconds or greater, the current status is displayed during the scan; when less than 300 milliseconds the status is displayed only during pause. Entering \* during a pause causes the scan to resume. Entering # aborts the scan and leaves the mobile tuned to the current channel. During this command only the \* and # keys are recognized.

NOTE: While I haven't heard from ONE single person that this has worked, Motorola has continued to print this command in all the Technical Training Books (including the January 96 edition).

37# Sets Low Battery Threshold. Usage: #37#x# where x is any number from 1 to 255. If set to 1, the Low Battery indicator will come up when the phone is powered on. If set to 255, it may never come up.

38# Display ESN (Displays ESN in four steps, two hexadecimal digits at a time in a four digit display. The decimal shows the address, 00 through 03 as the first two digits, and two digits of the ESN as the last two digits. Use the '\*' to step through the entire hexadecimal ESN.)

Compander OFF ("D" Series Portables)

or

38# SND-SNM. Display shows AA BB. Where AA=Address;BB=Data. Send the SNM



to the display. All 32 bytes of the SNM will be displayed, one byte at a time. The byte address will be displayed in the upper right-hand corner and the contents of that address will be displayed in the hex. The \* key is used to step through the address similar to the SEND-NAM (18#) command.

39# Comander ON ("D" Series Portables)

or

39# RCVSU. Receive one control channel word. When the word is received it is displayed in hex. This command will be complete when a control channel word is received or when the # key is entered to abort the command.

40# RCVVC. Receive one voice channel word. When the word is received it is displayed in hex. This command will be complete when a voice channel word is received or when the # key is entered to abort the command.

41# Enables Diversity (On F19CTA... Series only.)

42# Disables Diversity (On F19CTA... Series only.)

43# Disable Diversity  
USE T/R ANTENNA (On F19CTA... Series only.)  
USE R ANTENNA (On D.M.T./ Mini TAC)

44# Disable Diversity  
USE R ANTENNA (On F19CTA... Series only.)  
USE T/R ANTENNA (On D.M.T./ Mini TAC)

45# Display Current Receive Signal Strength Indicator (Displayed as a 3 digit decimal number) The strongest signal I have ever received was 179 and I was sitting directly below the tower WITHOUT an external antenna.

46# Display Cumulative Call Timer

47x# Set RX Audio level to X  
(For F19CTA ...Series Transceivers)  
X=0, Lowest Volume  
X=6, Highest Volume  
X=7, mute  
Normal setting is 4.  
(For D.M.T./ Mini TAC Transceivers)  
X=0, Lowest Volume  
X=7, Highest Volume  
Normal setting is 4.  
(For TDMA Transceivers and F09F... Series and Higher Portables)  
X=0, Lowest Volume  
X=15, Highest Volume  
Normal setting is 2 to 4. (On TDMA  
Transceivers and Micro TAC portables,  
settings 8 through 15 are for DTMF  
applications only.)

48# Side Tone On. Use this command in conjunction with 350# to test the entire audio path in hands-free applications.

49# Side Tone Off

50# Maintenance data is transmitted and test results displayed:  
PASS=received data is correct  
FAIL 1=2second timeout, no data rec.  
FAIL 2=received data is incorrect

51# Test of mobile where maintenance data is transmitted and looped back.  
Display is as follows:  
PASS=looped-back data is correct  
FAIL 1=2 second timeout, no looped-back data  
FAIL 2=looped-back data is incorrect

52x# SAT Phase Adjustment. A decimal value that corresponds to phase shift compensation in 4.5 degree increments. Compensation added to inherent phase shift in transceiver to achieve a total of 0 degrees phase shift.

Do NOT enter any values except those shown below.

0 degrees = 0	121.5 degrees = 59	243.0 degrees = 86
4.5 = 1	126.0 = 60	247.5 = 87
9.0 = 2	130.5 = 61	252.0 = 112
13.5 = 3	135.0 = 62	256.5 = 113
18.0 = 4	139.5 = 63	261.0 = 114
22.5 = 5	144.0 = 40	265.5 = 115
27.0 = 6	148.5 = 41	270.0 = 116
31.5 = 7	153.0 = 42	274.5 = 117
36.0 = 16	157.5 = 43	279.0 = 118
40.5 = 17	162.0 = 44	283.5 = 119
45.0 = 18	166.5 = 45	288.0 = 120
49.5 = 19	171.0 = 46	292.5 = 121
54.0 = 20	175.5 = 47	297.0 = 122
58.5 = 21	180.0 = 64	301.5 = 123
63.0 = 22	184.5 = 65	306.0 = 124
67.5 = 23	189.0 = 66	310.5 = 125
72.0 = 48	193.5 = 67	315.0 = 126
76.5 = 49	198.0 = 68	319.5 = 127
81.0 = 50	202.5 = 69	324.0 = 104
85.5 = 51	207.0 = 70	328.5 = 105
90.0 = 52	211.5 = 71	333.0 = 106
94.5 = 53	216.0 = 80	337.5 = 107
99.0 = 54	220.5 = 81	342.0 = 108
103.5 = 55	225.0 = 82	346.5 = 109
108.0 = 56	229.5 = 83	351.0 = 110
112.5 = 57	234.0 = 84	355.5 = 111
117.0 = 58	238.5 = 85	360.0 = 70

53# Enable scrambler option, when equipped.

54# Disable scrambler option, when equipped.

55# Display/Program N.A.M. (Test Mode Programming)

TEST MODE PROGRAMING:

Assuming you have completed one of the above steps correctly the phone will wake up in test mode when you turn the power on. When you first access test mode the phone's display will alternate between various status information that includes the received signal strength and channel number. The phone will operate normally in this mode. You can now access Service Mode by pressing the # key, the display will clear and a ' will appear. Use the following procedure to program the phone:

1. Enter 55# to access programming mode.
2. The \* key advances to the next step. (NOTE that test mode programming does NOT have step numbers, each time you press the \* key the phone will display the next data entry).
3. The CLR key will revert the display to the previously stored data.
4. The # key aborts programming at any time.
5. To complete programming you must scroll through ALL entries until a ' appears in the display.
6. Note that some entries contain more digits than can be displayed by the phone, in this case only the last part of the data can be seen.

TEST MODE PROGRAMING DATA: For AMPS and NAMPS Cellular Telephones

STEP#	#OF DIGITS/RANGE	DESCRIPTION
01	00000 - 32767	SYSTEM ID
02	8 DIGIT BINARY	OPTION PROGRAMING, SEE NOTE 1 BELOW
03	10 DIGITS	MIN (AREA CODE & TEL#)
04	2 DIGITS	STATION CLASS MARK, SEE NOTE 2 BELOW
05	2 DIGITS	ACCESS OVERLOAD CLASS
06	2 DIGITS	GROUP ID (10 IN USA)
07	6 DIGITS	SECURITY CODE
08	3 DIGITS	UNLOCK CODE
09	3 DIGITS	SERVICE LEVEL, SEE NOTE 3 BELOW
10	8 DIGIT BINARY	OPTION PROGRAMING, SEE NOTE 4 BELOW
11	8 DIGIT BINARY	OPTION PROGRAMING, SEE NOTE 5 BELOW
12	0333 OR 0334	INITIAL PAGING CHANNEL
13	0333	"A" SYSTEM IPCH
14	0334	"B" SYSTEM IPCH
15	3 DIGIT	NUMBER PAGING CHANNEL (021 IN USA)
16	8 DIGIT BINARY	OPTION PROGRAMING, SEE NOTE 6 BELOW

Steps 01 through 06 and 12 will repeat for NAM 2 if the second phone number bit has been enabled in step 11.

TEST MODE PROGRAMING DATA: For TDMA Cellular Telephones

STEP#	#OF DIGITS/RANGE	DESCRIPTION
01	00000 - 32767	SYSTEM ID
02	8 DIGIT BINARY	OPTION PROGRAMING, SEE NOTE 1 BELOW
03	10 DIGITS	MIN (AREA CODE & TEL#)
04	2 DIGITS	STATION CLASS MARK, SEE NOTE 2 BELOW
05	2 DIGITS	ACCESS OVERLOAD CLASS
06	2 DIGITS	GROUP ID (10 IN USA)
07	6 DIGITS	SECURITY CODE
08	3 DIGITS	LOCK CODE
09	3 DIGITS	SERVICE LEVEL, SEE NOTE 3 BELOW
10	8 DIGIT BINARY	OPTION PROGRAMING, SEE NOTE 4 BELOW
11	8 DIGIT BINARY	OPTION PROGRAMING, SEE NOTE 5 BELOW
12	0333 OR 0334	INITIAL PAGING CHANNEL
13	0333	"A" SYSTEM IPCH
14	0334	"B" SYSTEM IPCH
15	3 DIGITS	DEDICATED PAGING CHANNELS (021 IN USA)
16	3 DIGITS	SECONDARY INITIAL PAGING CHANNEL. 708 for system A, 737 for system B. Allows the TDMA telephone to be assigned to a TDMA channel in a call
17	708	SECONDARY INITIAL PAGING CHANNEL FOR SYSTEM A
18	737	SECONDARY INITIAL PAGING CHANNEL FOR SYSTEM B
19	8 DIGITS	OPTION PROGRAMMING, SEE NOTE 6 BELOW

NOTES:

Take care with Motorola's use of "0" and "1". Some options use "0" to enable, some use "1".

These are eight digit binary fields used to select the following options:

- (step 02 above, suggested entry is: 11101001 for "A" system, 10101001 for "B" sys)

Digit 1: Local use mark, 0 or 1.

Digit 2: Preferred system, 1=system A, 0=system B.

Digit 3: End to end (DTMF) dialing, 1 to enable.

Digit 4: Not used, enter 0. Formerly used for test mobile.

Digit 5: Repertory (speed) dialing, 1 to enable. (Not used in TDMA)

Digit 6: Auxiliary (horn) alert, 1 to enable.

Digit 7: Hands free (VSP) auto mute, 1 to enable (mutes outgoing hands free audio until the MUTE key is pressed). (Not used in TDMA)

Digit 8: Min mark, 1 = Enabled. NOT CHANGEABLE on series II or III.

- Station Class Mark

SCM	666 or 832 Ch.	VOX	Max Power
00	666	N	3.0 W
01	666	N	1.2 W
02	666	N	0.6 W
03			
04	666	Y	3.0 W

05		666		Y		1.2	W
06		666		Y		0.6	W
07							
08		832		N		3.0	W
09		832		N		1.2	W
10		832		N		0.6	W
11							
12		832		Y		3.0	W
13		832		Y		1.2	W
14		832		Y		0.6	W
15							

### 3. Service Level Codes:

- 001 The telephone will only dial numbers in memory locations 01, 02 and 03. No keypad entries or memory storage is possible. Restrict ALL outgoing calls by clearing locations 01, 02, and 03 and place the phone in servicing level 001. In some phones this applies to memory locations 01 - 10.
- 002 The telephone will dial only numbers from memory locations. The keypad is disabled and super speed dialing is not enabled.
- 003 Keypad dial only; no memory recall allowed.
- 004 Unlimited keypad and memory dialing. (DEFAULT)
- 005 Seven-digit dialing only
- 006 Full keypad and memory dialing, but memory locations 1 through 10 cannot be changed.
- 007 The phone will dial only from as many as 50 programmable memory locations

### 4. (step 10 above, suggested entry is: 00000100)

- Digits 1 - 3: Not used in USA, enter 0.
- Digit 4: Extended Field. When enabled, the telephone will scan more than 32 paging channels. Not used in USA, 0 to disable
- Digit 5: Single system scan, 1 to enable (scan A or B system only, determined by bit 2 of step 02. Set to "0" to allow user the option).
- Digit 6: Super speed dial, 1 to enable (pressing N, or NN SND will dial the number stored in memory location NN).
- Digit 7: User selectable service level, 0 to enable (allows user to set long distance/memory access dialing restrictions).
- Digit 8: Lock function, 0 to enable (allows user to lock/un-lock the phone, if this is set to 1 the phone can not be locked).

### 5. (step 11 above, suggested entry is: 00000000)

- Digit 1: Handset programming, 0 to enable (allows access to programming mode without having to enter test mode).
- Digit 2: Second phone number (not all phones), 1 to enable.
- Digit 3: Call timer access, 0 to enable. (Not used in TDMA)
- Digit 4: Auto system busy redial, 0 to enable.
- Digit 5: Internal Speaker disable, 1 to enable (use with select VSP units only, do not use with 2000 series mobiles).
- Digit 6: IMTS/Cellular, 1 to enable (rarely used).

Digit 7: User selectable system registration, 0 to enable.  
Digit 8: Dual antenna (diversity), 1 to enable.

6. (step 16 and 19 above, suggested entry is: 0011010 for portable and 0011011 for mobile units)

Digit 1: Enhanced Scan, when enabled, four strongest signalling channels are scanned instead of two. 1=enabled, 0-disabled.

Digit 2: Cellular Connection, used only in series II phones if a series I cellular connection is used with a series II.  
0=series II, 1=series I, 0 for ALL TDMA PHONES

Digit 3: Continuous DTMF, 1 to enable (software version 8735 and later)

Digit 4: Transportable Internal Ringer/Speaker. When set to 0, audio is routed to the external speaker of the transportable; 1 routes it to the handset.

Digit 5: 8 hour time-out, 0 to enable (software version 8735 and later)

Digit 6: Not used, 0 only.

Digit 7: Failed page indicator, 0 to enable (phone beeps when an incoming call is detected but signal conditions prevent completion of the call).

Digit 8: Portable scan, 0 for portable, 1 for mobile units.

56# Illumination Diagnostic. Lights up all lights (except the green in use light) and displays all "8"'s. The phone is also muted until repowered.

57x# Call Processing Mode

x=0, AMPS

x=1, NAMPS

x=2-4, RESERVED

x=5, TDMA signalling

x=6, TDMA signalling with loopback before decoding

x=7, TDMA signalling with loopback voice after decoding

x=8, TDMA signalling with loopback FACCH after decoding

x=9, TDMA forced synchronization

58# Compander On (Audio compressor and expander) (See 39#)

59# Compander Off (Audio compressor and expander) (See 38#)

60# no function

61# ESN Transfer (For Series I D.M.T./Mini TAC only)

62# Turn On Ringer Audio Path

63# Turn Off Ringer Audio Path

64# ? Does something, doesn't display anything

65# ? Does something, doesn't display anything

66# Identity Transfer (Series II Trancvrs and later mobiles, F09HG..., F09HL..., F09HY..., F09HR..., F09LF..., F09NF..., F09PY..., F09QY...,

F09RY..., and most retail portables shipping prior to April 1, 1995.)  
Does the actual transfer of the ESN and NAM info. See the 80x# command.

- 67# Displays two 3 digit numbers. If you keep entering this command repeatedly, the first number will constantly change, the second won't (as far as I have seen).
- 68# Display FLEX and Model Information
- 69# Used with 66# for Identity Transfer. In models shipped without the 66# command, this is used with 80x# instead. Reads NAM information, repertory memory, and C-Scan ID SID's from old phone.
- 70# Abbreviated field transmitter audio deviation command, for transceivers with FCC ID ABZ89FT5668.
- 71# Abbreviated field power adjustment command, for transceivers with FCC ID ABZ89FT5668.
- 72# Field audio phasing commands. The left side of the display should read "00" followed by a two digit number. The "00" indicates the first programming step. If you press the \*, the 00 changes to 01 and so on until 08. The "06" and "0A" are used to change the audio level (to change: press the volume up or down keys). Other registers...don't know.
- 73# Field power adjustment command.
- 75# Display ESN (Displays ESN in four steps, two decimal digits at a time in a three digit display. The decimal shows the address, 0 through 3 as the first digit, and two digits of the ESN as the last two digits. Use the '\*' to step through the entire hexadecimal ESN.)

38#		75#
00-D4	0	30
01-25	1	16
02-D4	2	13
03-1E	3	54309

80x# Current Identity Transfer Procedure. (Available in telephones shipping after April 1, 1995.) This does NOT transfer the ESN.

- x=0, Transfers NAM information (On TDMA telephones, this command also transfers C-Scan SID's.)
- x=1, Transfers repertory memory (names & telephone numbers in memory.)
- x=2, Transfers C-Scan SID's on analog telephones (Not available on TDMA telephones.)

NOTES: As new fones come out, more commands are added/deleted as needed. The majority of these commands were figured using VERY old software versions. Some commands won't work on some phones. If you find a command that does something, please inform me as well as the software

version number of the phone it was discovered on.

-----  
\* NEW SECTION \*

COMMANDS THAT DO SOMETHING BUT I DON'T KNOW WHAT!!!

74#

76#

77#

78#

99#

If you have any insight to these commands or if you have any more to add to the list, please email me promptly. Thank you.

G\*S\*M\*\*I\*N\*F\*O\*\*A\*N\*D\*\*T\*E\*S\*T\*\*M\*O\*D\*E\*\*\*\*\*S\*E\*C\*T\*I\*O\*N\*\*5

Thanks to Janus Krarup (jckrarup@post1.com <http://www.ibt.dk/morten/friends/>) for all the information in this section. His web page has all of this information (and more) and is continually updated. It's also offered in Italian and will be available soon in Czech.

TESTMODE for GSM PHONES:

Start with the sequence:

Testmode

Command#

|

|

[pause] [pause] [pause] [1] [1] [3] [pause] [1] [pause] [ok] [MENU] (pause is accomplished by holding down the [\*] key until box appears).

This accomplishes the editing/viewing of the Engineer Field Options. By substituting different numbers for the [1] [1] [3], many more test mode commands and functions are available. (see below for an almost complete list)

After pressing [MENU], scroll until the new option appears. Pressing [OK] will then reveal 3 new options:

ACTIVE CELL: Displays Active Channel and lets you scroll through: RxLev, RxLevAM, NCC, BCC, MSTxPwr, and C1.

During a call you can see: RxLev, RxLevFull, RxLevSub, RxQualFul, RxQualSub, Timeslot, TimeAdv, and PwrLev.

The active channel may read "Hopping" during a call.



When establishing a network connection you can see what SDCCH (Standalone Dedicated Control CHannel) the negotiation takes place on.

ADJACENT CELLS: Lets you scroll through the adjacent cells (1-6) and view their channel allocations.

SYSTEM PARAMETERS: Displays the following: Combined, AcsClas, MCC, MNC, LAC, CellID, T3212, BS-PA-MFRM, and XZQTY.

During a call you can see: Combined, DTX, MCC, MNC, LAC, and CellID.

-----  
Key To The Readouts:

Combined: Haven't got a clue. The two Danish operators has OFF and Swedish Comviq has ON.

RxLev: The strength of the received signal (in dBm), normally between -55 and -90 - the signal drops at RxLevAm

When comparing RxLev's, remember the logarithmic nature of the dB scale and that the signal intensity decays by a factor of 4 when the distance from the BST is doubled (assuming line of sight to the BST, the signal will drop 6 db when the distance is doubled.)

RxLevAm: Receive signal strength cut off point (around -100 dBm and -110 dBm).

BCC: Broadcast Color Code (0 through 7)

NCC: Network Color Code (0 through 7)

MSTxPwr: BTS transmit power in dBm (see notes on power control)

C1: Measurement of the signal quality (bit failure). A forced handoff will be made if C1<0. ( I have seen C1 as high as 039). This value is reported from MS back to the BSC which decides when to make a handoff.

RxLevFull: C1 value with continuous transmission from tower.

RxLevSub: C1 value with discontinuous transmission from tower.

RxQualFull: Bit error rate with continuous transmission from tower.

RxQualSub: Bit error rate with discontinuous transmission from tower.

Timeslot: The current timeslot (0 through 7). TDMA allows eight channels to be accommodated on a single RF carrier.

TimeAdv: Timing advance (0 through 63). TA can be multiplied with 547 meters (35 km/64 TA steps) to get the distance to the BTS.

PwrLev: Shows which power step/level the phone is transmitting at (see section below on power control)

DTX: Discontinuous transmission, a feature used to save battery and reduce network traffic.

MCC: Mobile Country Code. 238=Denmark

MNC: Mobile Network Code. 1=Tele Denmark, 2=Sonofon (these are the ones for the MCC 238).

LAC: Local Area Code. (not sure, but I could imagine it being the BSC identity).

CellID: A unique number that identifies the cell. (BTS identity)

T3212: Time between periodic network updates. Appears to be fixed (010 for Tele Denmark and 050 for Sonofon).

---

POWER CONTROL:

To minimize co-channel interference and to conserve power, both the mobiles and the Base Transceiver Stations operate at the lowest power level that will maintain an acceptable signal quality. Power levels can be stepped up or down in steps of 2 db from the peak power for the class down to a minimum of 13 dBm (20 milliwatts).

Use this table to translate between dBm, PwrLev, and Power:

Power Level	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
dBm	43	41	39	37	35	33	31	29	27	25	23	21	19	17	15	13
Watts	16	12.8	8	5.2	3.2	2	1.3	0.8	0.5	0.32	0.2	0.13	0.08	0.05	0.03	0.02

If you can help out with deciphering the readouts, additional sequences or corrections please feel free to contact Janus Krarup at [jckrarup@post1.com](mailto:jckrarup@post1.com).

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Security Codes on the GSM phones:

The phones are protected by two codes:

The UNLOCK code which consists of 4 digits (default 1234)

This is changed by typing MENU 51 and providing the security code. You can type in wrong codes until you hit the right one.

The SECURITY code which consists of 6 digits (default 000000)

This is changed by typing MENU 54 and providing the old code. Again, you can keep hitting bogus codes all day until you get the right one (hope you got some time to kill).

The SIM card is protected by 2 codes:

The PIN code (Personal Identification Number) which consists of 4 to 8 digits.

The PIN code can only be typed in wrong 3 times (you heard right...3). After this the SIM card will be blocked until the PUK code is used. The PIN code is user definable. It can be changed by providing the old PIN code or the PUK code. There is a menu for changing the PIN code by providing the old one, but you can also type \*\*04\* in order to do so. To enter a whole new PIN on a blocked card or without knowing the old PIN, you need to use \*\*05\* PUK (OK) NEWPIN (OK) NEWPIN (OK)

The PUK code (Personal Unblocking Key) consists of 8 digits.

This is set by the network provider and can not be changed. If entered wrongly 10 times, the card will become permanently blocked and will need to be replaced.

-----  
Undocumented Menu shortcuts (7500, 8200, and maybe the 5200 and 7200)

Menu + XX

- 11 Status Review
- 13 Available networks
- 14 Preferred networks
  
- 21 Incoming call alert
- 22 Select keypad tones
- 25 Require SIM card PIN
- 26 Language selection
  
- 32 Repetitive timer
- 33 Single alert timer
- 34 Show meter during calls
- 35 Resettable call meters
- 36 Resettable call meters
- 37 Set call cost rates
- 38 Reset all meters
  
- 41 Keypad dialing (call restrictions)
- 43 Restrict incoming calls
- 44 Phone number length
  
- 51 Change unlock code
- 52 Master reset
- 53 Master clear
- 54 New security code
- 55 Automatic lock

Test Mode Functions:

- 3 MENU-phone book
- 4 MENU-messages
- 5 mute on/off (menu during call)
- 6 MENU-Call related features
- 7 MENU-"arrows"
- 8 select phone line
- 9 last ten calls
- 10 restrict my phone number
- 11 call diverting
- 12 divert when available
- 13 Detailed diverting
- 14 Divert voice calls
- 15 Divert ALL voice calls
- 16 If Busy
- 17 If no answer
- 18 If not reachable
- 19 Divert fax calls
- 20 Divert Data calls
- 21 Cancel all diverting
- 22 Call waiting
- 23 Call barring
- 24 Bar outgoing calls
- 25 Bar incoming calls
- 26 Change Barr password
- 27 Call restrictions
- 28 Restrict incoming calls
- 29 Phone number length
- 30 Keypad dialing
- 31 Call voicemail
- 32 Received messages
- 33 Cell broadcast
- 34 Message settings
- 35 Message alert tone
- 36 Voicemail number
- 37 Incoming call alert
- 38 No alert
- 39 Vibrate only
- 40 Adjust ring volume
- 41 Lock now
- 42 Automatic lock
- 43 Change unlock code
- 44 Require SIM card PIN
- 45 Change SIM PIN code
- 46 New security code
- 47 Extended menus
- 48 Language selection
- 49 Automatic (Language Selection)\_
- 50 Change greeting

51 Battery saving mode  
52 Select keypad tones  
53 Phone status  
54 Status review  
55 Master reset  
56 Master clear  
57 Available networks  
58 Network search  
59 Registration preferences  
60 Frequency of search  
61 Preferred networks  
62 Add network to list  
63 Show list of networks  
64 Find new network  
65 Show last call  
66 Resettable call timers  
67 Set audible call timers  
68 Single alert timers  
69 Repetitive timer  
70 \*\*1 = register write lock!!!  
71 Show meter during calls  
72 Set meter format  
73 Set call cost rates  
74 Lifetime meter

81 Find entry by name  
82 Find entry by location  
83 Show services  
84 Enter my phone number  
85 Show my phone number  
86 Add entry  
87 Check phone capacity  
88 Check SIM capacity  
89 Prevent access  
90 Edit name (my phone number)  
91 Edit number (my phone number)  
92 MENU - Call related features  
93 MENU - Phone setup  
94 MENU - Network selection  
95 MENU - Call meters

99 Periodic search  
100 Continuous search  
101 Slow search  
102 Medium search  
103 Fast search  
104 MENU - Phonebook  
105 MENU - Phonebook  
106 MENU - Messages  
107 MENU - Messages  
108 Copy SIM memory

110 Edit number (direct dial key)  
111 Edit name (direct dial key)

112 Direct dial key  
113 MENU - Eng Field Options

126 erase all numbers (last 10)

ATTENTION: These are but a few of the possible commands. There are 1000 possibilities! Please attempt to find more. And if you do, Email me to keep this list as accurate as possible.

I know that an add-on setup menu exists. This is used when the phone is connected to a hands-free car kit.

The HF-setup menu should contain 5 choices: turn off radio/aut. HF answer/aut. HF/security timer/external alert.

If you have an HF kit, please help me to complete the list (I suspect the menus to have the numbers from 75 to 80).

Again all correspondence about this entire GSM section should be addressed to jckrarup@post1.com. He's the GSM guy. I've never used a GSM phone. -MikeY

H\*A\*C\*K\*I\*N\*G\*\*\*T\*H\*E\*\*\*F\*O\*V\*C\*\*\*\*\*S\*E\*C\*T\*I\*O\*N\*\*\*6

Note: This is NOT my hack. Thanks to Patrk@delphi.com for this addition.

#### HACKING THE FOVC

Problem: When listening to something interesting (a conversation), just when that sexy sounding horny broad begins to give her phone number to some lucky guy, HANDOFF!!! then static... DAMN!

Trick: Hack the FOVC.

a quick definition: FOVC = FOward Voice Channel  
FOCC = FOward Control Channel  
REVC = REverse Voice Channel  
RECC = REverse Control Channel

As the phone travels through cells, the FOVC is where the tower tells the phone to adjust power levels for the current cell or to change to a new channel for use in the new cell. This info can be hacked apart. So. When you've found a good conversation, don't be lazy! Enter 40#! This makes the phone listen for commands on the voice channel (embedded in the audio portion- you can hear it as a "bump" sound). It will just sit there and the display will read '40' , but the conversation will still be audible. Now when the phone receives a FOVC command (a 40 bit sequence) data will flow across the display, in hex format, and stop. Listen to the phone, if the conversation is still there, then the command was only to adjust power levels. If the conversation is gone, then its a handoff. If you only got a power adjustment command just press # or clr, which ever gets you back to the ' prompt. Enter 40# and keep listening. You can also use the # key

to cancel the 40# command, if you want to change channels or something.

If it was a handoff, its time for some quick math. You have to convert some of the numbers to binary, and then to decimal. I don't know how many characters your phone's display will show. Mine only shows the last seven of the ten hex digits. Count left from the end 6 digits. Write down that digit and the next two on a piece of paper, i.e.:

```
???j16djkk    j=junk numbers (hex numbers range from 0-9,a-f)
/ \
these are lost due to scrolling
```

write down 16d then convert it to a binary string:

```
1 = 0001
6 = 0110
d = 1101    (d=13)
```

```
now you have a binary string like this: 000101101101
throw away the first 2 bits and get:      0101101101
convert this to decimal and get:          365
```

365 is the new channel the conversation has moved to! Enter 110365# and voila! You too, can hear the horny babe's phone number!

Don't forget to enter 40# again, as the call may be moving quickly through cells ( small cells or freeway driving ) or the call can get bounced around by the tower for cell traffic purposes.

Here's one more example of the hex>binary>decimal conversion.

```
???j5aejjj
5 = 0101
a = 1010
e = 1110
```

```
full string      = 010110101110
truncate 2 msb   = 0110101110
convert to decimal = 430
```

R\*E\*A\*D\*I\*N\*G\*\*T\*H\*E\*\*S\*I\*D\*\*\*\*\*S\*E\*C\*T\*I\*O\*N\*\*\*7

READING THE SID by Doctor Who (drwho@l0pht.com)

The SID (System IDentification) of a control channel can be determined using the test mode of the Motorola cellular phone. This document assumes the reader understands cellular technology in general, and how to access Motorola's test mode in specific.

Tune the phone to the desired control channel with 11xxxx# where xxxx is the channel number. Hit 39# to receive one control channel word. One should

appear in less than two seconds, filling up all ten digits on the display with hexadecimal digits. Do this repeatedly until one is found with the correct pattern. Digit places start at the left hand side and go to the right.

The first digit should be C,D,E, or F. This letter can be used to determine the DCC/SAT of the cell. A "C" is SAT 0, D is 1, E is 2, and F is 3. Ignore digits 8,9, and 10. They are parity bytes. Digit 7 should be "6" or "E", though I have never found it to be other than "E". The hexadecimal value of represented by digits 2 through 5 is then divided by two, and then 1 added if the carrier as an "A" side, "non-wireline" carrier. The result is the system ID.

for example:

E00388EA08

E means this cell has an SAT/DCC of 3. The A08 is ignored. The E to the left of it is proper and normal, so this is the right kind of message. Ignore the 8 in position 6, that is just to the left E. 0038 in hexadecimal translates  $((3*16=48)+8)$  to 56.  $56/2=28$ . Looking up System ID 28 on my chart indicates Nynex in Boston. This is correct.

Please be aware that the two SID charts I have seen around the net are very outdated. I have a more recent version on paper which I may eventually type in, when I have the time and energy.

The methods used above are only a very crude way to do what could be done much more efficiently by computer. I am sure that programs will be written to do exactly this, but I am holding off until I have thoroughly hacked the meaning of all these types of message before writing such a program. I am also contemplating the design of a cable to replace the handset, running from the 25 pin connector on the side of my bag phone to a computer.

-----=> Doctor Who <?-----

P\*H\*O\*N\*E\*\*P\*I\*N\*-\*O\*U\*T\*S\*\*\*\*\*S\*E\*C\*T\*I\*O\*N\*\*8

Before going into the cable specs, here are the pin-outs to all phones as of now (in the US). A very special thanks go to Motorola for faxing me the new Ultra Classic II pin-outs!

-----  
15 pin cable pinouts

PIN	DESIGNATION/FUNCTION
1	Battery A+, red wire
2	Transmit Audio / ON-OFF Function, a shared line between Audio (AC) and ground. This line will toggle the ON/OFF status of the telephone.
3	Ground (A+ return), black wire
4	Ignition Sense Lead, green with a black tracer
5	Receiver Audio (RX High), to handset connector pin 8
6	Regulated +9.5 volts, to handset connector pin 2
7	T-Data, one of the 3-wire bus lines, to handset connector pin 3







[ 7] [ 8] [ 9] [10] [11] [12]

1	VSP Enable	7	GROUND
2	SPKR Enable	8	S TRU
3	TX HI on/off	9	AUX Alert
4	RX HI	10	S CMP
5	RX HI OPT	11	S RTN
6	MAN TEST	12	IGN

Flip Fones and all fones using the dpc/pt flip cable

									J3 Pin	Function	
1	2	3	4	5	6	7	8		+ G -	1	Logic Ground
										2	Ext. 7.5V
									3	TRU	
									4	CMP	
										5	RTN
									6	Audio Ground	
									7	RX Audio OUT (spkr)	
									8	TX Audio IN (mic)	

(looking at back of phone with battery removed)

New External Connector for the Ultra Classic II CVC Pinblocks

									Pin	Designation/Function
									1	Regulated 8 volts
									3	ext. switched A+ enable
									5	ext. spkr/mic enable
									7	TX hi - on/off
									9	T Data
									11	R Data
									2	Audio Ground
									4	manual test
									6	ignition / charger B+
									8	RX hi
									10	C Data
									12	logic ground

C\*A\*B\*L\*E\*\*\*S\*P\*E\*C\*S\*\*\*\*\*S\*E\*C\*T\*I\*O\*N\*\*\*9

OK OK OK. Here are the cable specs. They are 100% correct. Of course I wouldn't know because these are for information purposes only. I have been told however by VERY reliable sources that they are guaranteed, 100%, GRADE-A, correct. If they don't work for you, you did something wrong.

-----

Cable Instructions for the bag phones (thanks Jakey)

phone (female 25 pin) computer (male 25 pin) (parallel port)

18 ----- 1  
 21 ----- 2  
 1 ----- 4 Below are 10K ohm resistors  
 12 ----- 12 ----/\//----.  
 11 ----- 13 ----/\//----+  
 4,5,8 ----- '  
 2,3,17,20----- 18 --- Ground/black wire (-12 Volts)  
 16 ----- Positive/yellow wire (+12 volts)

By the way, Jakey told me to remind you that the handset can NOT be plugged in while this cable is hooked up.

-----

Motorola Cellphone cable construction for flips

-----

DB25	FLIP		Battery Eliminator cable attachment pins up:
----	----		
1(-----)4			
		-----=	
2(-- <----)1	Jump this line to the Center Pin on the back of phone.		1 =
			-----=
4(-- <----)1	" <" is the IN4001 diode.	=	
		=	
12(-----)5			-----=
		4 =	-->To phone
13(-----)6			-----=
		5 =	
18-25(++-----)8			-----=
			6 =
+-)7			-----=
			7* =
			-----=
			8* =
NeG PoS ---Cig adapter			-----=

DB25 Male	Phone	Power Connector
	(see Note 1)	
1-To phone pin 4	1-DB25 pin 4(see note 2)	Gnd-To Db25 Pins 18-25 and Phone pin 8
2-To Phone test lead (see note 2)	2-NC	
3-NC	3-NC	Tip-To phone pin 7
4-To phone pin 1	4-To DB25 pin 1	

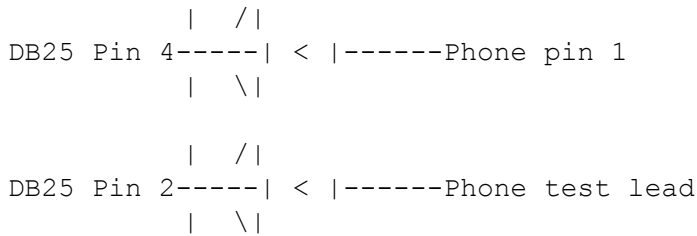
(see note 2)

- 5-NC 5-To DB25 pin 12
- 6-NC 6-To DB25 pin 13
- 7-NC 7-To tip on power connector
- 8-NC 8-GND
- 9-NC Test Lead-To DB25 pin 2 (See note 2)
- 10-NC
- 11-NC
- 12-To Phone pin 5
- 13-To Phone pin 6
- 14-NC
- 15-NC
- 16-NC
- 17-NC
- 18-GND \
- 19-GND |
- 20-GND |
- 21-GND |--Conn together to GND on 12v conn
- 22-GND | And pin 8 on phone plug
- 23-GND |
- 24-GND |
- 25-GND /

NOTE 1:

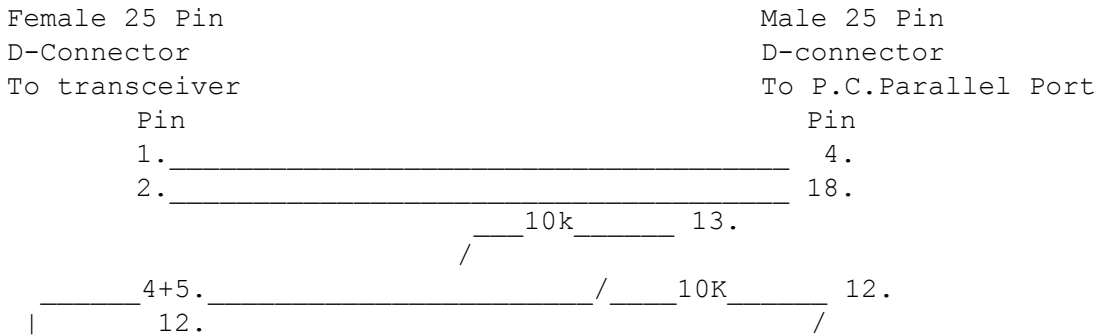
The power adapter on the cable is 12 volt input but is a regulated 7.95 volts out. DO NOT connect 12 volts between pins 7 and 8 on the phone connector.

NOTE 2:



-----  
Motorola Transceivers

4500x, 4800x, 6800x, Etc.





high sub-channel.

-----  
The following text I took from the Poisoned Pen BBS (Hi guys). Thanks Jakey for taking the time to decipher all of this shit. As far as I know, with the exception of a post on #cellular and the upload to Poisoned Pen, there is nothing in print with this compilation. Again, special thanks go to Jakey (jbs@mcs.net) for the long, seemingly endless work.

CELLULAR PHONE FREQUENCIES AND MOTOROLA  
TEST MODE NUMERIC CODES.

( Motorola test mode channel numbers )  
( are for use in Motorola test mode )  
( with function 11xxxx# )  
( All frequencies in Megahertz FM )  
Lower Set (1-666)

Tower Freq. Mobile Freq. 11xxxx# Channel

Tx	870.03	Rx	825.03	Chan	0001	#1
Tx	870.06	Rx	825.06	Chan	0002	#2
Tx	870.09	Rx	825.09	Chan	0003	#3
Tx	870.12	Rx	825.12	Chan	0004	#4
Tx	870.15	Rx	825.15	Chan	0005	#5
Tx	870.18	Rx	825.18	Chan	0006	#6
Tx	870.21	Rx	825.21	Chan	0007	#7
Tx	870.24	Rx	825.24	Chan	0008	#8
Tx	870.27	Rx	825.27	Chan	0009	#9
Tx	870.30	Rx	825.30	Chan	0010	#10
Tx	870.33	Rx	825.33	Chan	0011	#11
Tx	870.36	Rx	825.36	Chan	0012	#12
Tx	870.39	Rx	825.39	Chan	0013	#13
Tx	870.42	Rx	825.42	Chan	0014	#14
Tx	870.45	Rx	825.45	Chan	0015	#15
Tx	870.48	Rx	825.48	Chan	0016	#16
Tx	870.51	Rx	825.51	Chan	0017	#17
Tx	870.54	Rx	825.54	Chan	0018	#18
Tx	870.57	Rx	825.57	Chan	0019	#19
Tx	870.60	Rx	825.60	Chan	0020	#20
Tx	870.63	Rx	825.63	Chan	0021	#21
Tx	870.66	Rx	825.66	Chan	0022	#22
Tx	870.69	Rx	825.69	Chan	0023	#23
Tx	870.72	Rx	825.72	Chan	0024	#24
Tx	870.75	Rx	825.75	Chan	0025	#25
Tx	870.78	Rx	825.78	Chan	0026	#26
Tx	870.81	Rx	825.81	Chan	0027	#27
Tx	870.84	Rx	825.84	Chan	0028	#28
Tx	870.87	Rx	825.87	Chan	0029	#29
Tx	870.90	Rx	825.90	Chan	0030	#30
Tx	870.93	Rx	825.93	Chan	0031	#31
Tx	870.96	Rx	825.96	Chan	0032	#32
Tx	870.99	Rx	825.99	Chan	0033	#33

Tx	871.02	Rx	826.02	Chan	0034	#34
Tx	871.05	Rx	826.05	Chan	0035	#35
Tx	871.08	Rx	826.08	Chan	0036	#36
Tx	871.11	Rx	826.11	Chan	0037	#37
Tx	871.14	Rx	826.14	Chan	0038	#38
Tx	871.17	Rx	826.17	Chan	0039	#39
Tx	871.20	Rx	826.20	Chan	0040	#40
Tx	871.23	Rx	826.23	Chan	0041	#41
Tx	871.26	Rx	826.26	Chan	0042	#42
Tx	871.29	Rx	826.29	Chan	0043	#43
Tx	871.32	Rx	826.32	Chan	0044	#44
Tx	871.35	Rx	826.35	Chan	0045	#45
Tx	871.38	Rx	826.38	Chan	0046	#46
Tx	871.41	Rx	826.41	Chan	0047	#47
Tx	871.44	Rx	826.44	Chan	0048	#48
Tx	871.47	Rx	826.47	Chan	0049	#49
Tx	871.50	Rx	826.50	Chan	0050	#50
Tx	871.53	Rx	826.53	Chan	0051	#51
Tx	871.56	Rx	826.56	Chan	0052	#52
Tx	871.59	Rx	826.59	Chan	0053	#53
Tx	871.62	Rx	826.62	Chan	0054	#54
Tx	871.65	Rx	826.65	Chan	0055	#55
Tx	871.68	Rx	826.68	Chan	0056	#56
Tx	871.71	Rx	826.71	Chan	0057	#57
Tx	871.74	Rx	826.74	Chan	0058	#58
Tx	871.77	Rx	826.77	Chan	0059	#59
Tx	871.80	Rx	826.80	Chan	0060	#60
Tx	871.83	Rx	826.83	Chan	0061	#61
Tx	871.86	Rx	826.86	Chan	0062	#62
Tx	871.89	Rx	826.89	Chan	0063	#63
Tx	871.92	Rx	826.92	Chan	0064	#64
Tx	871.95	Rx	826.95	Chan	0065	#65
Tx	871.98	Rx	826.98	Chan	0066	#66
Tx	872.01	Rx	827.01	Chan	0067	#67
Tx	872.04	Rx	827.04	Chan	0068	#68
Tx	872.07	Rx	827.07	Chan	0069	#69
Tx	872.10	Rx	827.10	Chan	0070	#70
Tx	872.13	Rx	827.13	Chan	0071	#71
Tx	872.16	Rx	827.16	Chan	0072	#72
Tx	872.19	Rx	827.19	Chan	0073	#73
Tx	872.22	Rx	827.22	Chan	0074	#74
Tx	872.25	Rx	827.25	Chan	0075	#75
Tx	872.28	Rx	827.28	Chan	0076	#76
Tx	872.31	Rx	827.31	Chan	0077	#77
Tx	872.34	Rx	827.34	Chan	0078	#78
Tx	872.37	Rx	827.37	Chan	0079	#79
Tx	872.40	Rx	827.40	Chan	0080	#80
Tx	872.43	Rx	827.43	Chan	0081	#81
Tx	872.46	Rx	827.46	Chan	0082	#82
Tx	872.49	Rx	827.49	Chan	0083	#83
Tx	872.52	Rx	827.52	Chan	0084	#84
Tx	872.55	Rx	827.55	Chan	0085	#85
Tx	872.58	Rx	827.58	Chan	0086	#86
Tx	872.61	Rx	827.61	Chan	0087	#87



Tx	872.64	Rx	827.64	Chan	0088	#88
Tx	872.67	Rx	827.67	Chan	0089	#89
Tx	872.70	Rx	827.70	Chan	0090	#90
Tx	872.73	Rx	827.73	Chan	0091	#91
Tx	872.76	Rx	827.76	Chan	0092	#92
Tx	872.79	Rx	827.79	Chan	0093	#93
Tx	872.82	Rx	827.82	Chan	0094	#94
Tx	872.85	Rx	827.85	Chan	0095	#95
Tx	872.88	Rx	827.88	Chan	0096	#96
Tx	872.91	Rx	827.91	Chan	0097	#97
Tx	872.94	Rx	827.94	Chan	0098	#98
Tx	872.97	Rx	827.97	Chan	0099	#99
Tx	873.00	Rx	828.00	Chan	0100	#100
Tx	873.03	Rx	828.03	Chan	0101	#101
Tx	873.06	Rx	828.06	Chan	0102	#102
Tx	873.09	Rx	828.09	Chan	0103	#103
Tx	873.12	Rx	828.12	Chan	0104	#104
Tx	873.15	Rx	828.15	Chan	0105	#105
Tx	873.18	Rx	828.18	Chan	0106	#106
Tx	873.21	Rx	828.21	Chan	0107	#107
Tx	873.24	Rx	828.24	Chan	0108	#108
Tx	873.27	Rx	828.27	Chan	0109	#109
Tx	873.30	Rx	828.30	Chan	0110	#110
Tx	873.33	Rx	828.33	Chan	0111	#111
Tx	873.36	Rx	828.36	Chan	0112	#112
Tx	873.39	Rx	828.39	Chan	0113	#113
Tx	873.42	Rx	828.42	Chan	0114	#114
Tx	873.45	Rx	828.45	Chan	0115	#115
Tx	873.48	Rx	828.48	Chan	0116	#116
Tx	873.51	Rx	828.51	Chan	0117	#117
Tx	873.54	Rx	828.54	Chan	0118	#118
Tx	873.57	Rx	828.57	Chan	0119	#119
Tx	873.60	Rx	828.60	Chan	0120	#120
Tx	873.63	Rx	828.63	Chan	0121	#121
Tx	873.66	Rx	828.66	Chan	0122	#122
Tx	873.69	Rx	828.69	Chan	0123	#123
Tx	873.72	Rx	828.72	Chan	0124	#124
Tx	873.75	Rx	828.75	Chan	0125	#125
Tx	873.78	Rx	828.78	Chan	0126	#126
Tx	873.81	Rx	828.81	Chan	0127	#127
Tx	873.84	Rx	828.84	Chan	0128	#128
Tx	873.87	Rx	828.87	Chan	0129	#129
Tx	873.90	Rx	828.90	Chan	0130	#130
Tx	873.93	Rx	828.93	Chan	0131	#131
Tx	873.96	Rx	828.96	Chan	0132	#132
Tx	873.99	Rx	828.99	Chan	0133	#133
Tx	874.02	Rx	829.02	Chan	0134	#134
Tx	874.05	Rx	829.05	Chan	0135	#135
Tx	874.08	Rx	829.08	Chan	0136	#136
Tx	874.11	Rx	829.11	Chan	0137	#137
Tx	874.14	Rx	829.14	Chan	0138	#138
Tx	874.17	Rx	829.17	Chan	0139	#139
Tx	874.20	Rx	829.20	Chan	0140	#140
Tx	874.23	Rx	829.23	Chan	0141	#141

Tx	874.26	Rx	829.26	Chan	0142	#142
Tx	874.29	Rx	829.29	Chan	0143	#143
Tx	874.32	Rx	829.32	Chan	0144	#144
Tx	874.35	Rx	829.35	Chan	0145	#145
Tx	874.38	Rx	829.38	Chan	0146	#146
Tx	874.41	Rx	829.41	Chan	0147	#147
Tx	874.44	Rx	829.44	Chan	0148	#148
Tx	874.47	Rx	829.47	Chan	0149	#149
Tx	874.50	Rx	829.50	Chan	0150	#150
Tx	874.53	Rx	829.53	Chan	0151	#151
Tx	874.56	Rx	829.56	Chan	0152	#152
Tx	874.59	Rx	829.59	Chan	0153	#153
Tx	874.62	Rx	829.62	Chan	0154	#154
Tx	874.65	Rx	829.65	Chan	0155	#155
Tx	874.68	Rx	829.68	Chan	0156	#156
Tx	874.71	Rx	829.71	Chan	0157	#157
Tx	874.74	Rx	829.74	Chan	0158	#158
Tx	874.77	Rx	829.77	Chan	0159	#159
Tx	874.80	Rx	829.80	Chan	0160	#160
Tx	874.83	Rx	829.83	Chan	0161	#161
Tx	874.86	Rx	829.86	Chan	0162	#162
Tx	874.89	Rx	829.89	Chan	0163	#163
Tx	874.92	Rx	829.92	Chan	0164	#164
Tx	874.95	Rx	829.95	Chan	0165	#165
Tx	874.98	Rx	829.98	Chan	0166	#166
Tx	875.01	Rx	830.01	Chan	0167	#167
Tx	875.04	Rx	830.04	Chan	0168	#168
Tx	875.07	Rx	830.07	Chan	0169	#169
Tx	875.10	Rx	830.10	Chan	0170	#170
Tx	875.13	Rx	830.13	Chan	0171	#171
Tx	875.16	Rx	830.16	Chan	0172	#172
Tx	875.19	Rx	830.19	Chan	0173	#173
Tx	875.22	Rx	830.22	Chan	0174	#174
Tx	875.25	Rx	830.25	Chan	0175	#175
Tx	875.28	Rx	830.28	Chan	0176	#176
Tx	875.31	Rx	830.31	Chan	0177	#177
Tx	875.34	Rx	830.34	Chan	0178	#178
Tx	875.37	Rx	830.37	Chan	0179	#179
Tx	875.40	Rx	830.40	Chan	0180	#180
Tx	875.43	Rx	830.43	Chan	0181	#181
Tx	875.46	Rx	830.46	Chan	0182	#182
Tx	875.49	Rx	830.49	Chan	0183	#183
Tx	875.52	Rx	830.52	Chan	0184	#184
Tx	875.55	Rx	830.55	Chan	0185	#185
Tx	875.58	Rx	830.58	Chan	0186	#186
Tx	875.61	Rx	830.61	Chan	0187	#187
Tx	875.64	Rx	830.64	Chan	0188	#188
Tx	875.67	Rx	830.67	Chan	0189	#189
Tx	875.70	Rx	830.70	Chan	0190	#190
Tx	875.73	Rx	830.73	Chan	0191	#191
Tx	875.76	Rx	830.76	Chan	0192	#192
Tx	875.79	Rx	830.79	Chan	0193	#193
Tx	875.82	Rx	830.82	Chan	0194	#194
Tx	875.85	Rx	830.85	Chan	0195	#195

Tx	875.88	Rx	830.88	Chan	0196	#196
Tx	875.91	Rx	830.91	Chan	0197	#197
Tx	875.94	Rx	830.94	Chan	0198	#198
Tx	875.97	Rx	830.97	Chan	0199	#199
Tx	876.00	Rx	831.00	Chan	0200	#200
Tx	876.03	Rx	831.03	Chan	0201	#201
Tx	876.06	Rx	831.06	Chan	0202	#202
Tx	876.09	Rx	831.09	Chan	0203	#203
Tx	876.12	Rx	831.12	Chan	0204	#204
Tx	876.15	Rx	831.15	Chan	0205	#205
Tx	876.18	Rx	831.18	Chan	0206	#206
Tx	876.21	Rx	831.21	Chan	0207	#207
Tx	876.24	Rx	831.24	Chan	0208	#208
Tx	876.27	Rx	831.27	Chan	0209	#209
Tx	876.30	Rx	831.30	Chan	0210	#210
Tx	876.33	Rx	831.33	Chan	0211	#211
Tx	876.36	Rx	831.36	Chan	0212	#212
Tx	876.39	Rx	831.39	Chan	0213	#213
Tx	876.42	Rx	831.42	Chan	0214	#214
Tx	876.45	Rx	831.45	Chan	0215	#215
Tx	876.48	Rx	831.48	Chan	0216	#216
Tx	876.51	Rx	831.51	Chan	0217	#217
Tx	876.54	Rx	831.54	Chan	0218	#218
Tx	876.57	Rx	831.57	Chan	0219	#219
Tx	876.60	Rx	831.60	Chan	0220	#220
Tx	876.63	Rx	831.63	Chan	0221	#221
Tx	876.66	Rx	831.66	Chan	0222	#222
Tx	876.69	Rx	831.69	Chan	0223	#223
Tx	876.72	Rx	831.72	Chan	0224	#224
Tx	876.75	Rx	831.75	Chan	0225	#225
Tx	876.78	Rx	831.78	Chan	0226	#226
Tx	876.81	Rx	831.81	Chan	0227	#227
Tx	876.84	Rx	831.84	Chan	0228	#228
Tx	876.87	Rx	831.87	Chan	0229	#229
Tx	876.90	Rx	831.90	Chan	0230	#230
Tx	876.93	Rx	831.93	Chan	0231	#231
Tx	876.96	Rx	831.96	Chan	0232	#232
Tx	876.99	Rx	831.99	Chan	0233	#233
Tx	877.02	Rx	832.02	Chan	0234	#234
Tx	877.05	Rx	832.05	Chan	0235	#235
Tx	877.08	Rx	832.08	Chan	0236	#236
Tx	877.11	Rx	832.11	Chan	0237	#237
Tx	877.14	Rx	832.14	Chan	0238	#238
Tx	877.17	Rx	832.17	Chan	0239	#239
Tx	877.20	Rx	832.20	Chan	0240	#240
Tx	877.23	Rx	832.23	Chan	0241	#241
Tx	877.26	Rx	832.26	Chan	0242	#242
Tx	877.29	Rx	832.29	Chan	0243	#243
Tx	877.32	Rx	832.32	Chan	0244	#244
Tx	877.35	Rx	832.35	Chan	0245	#245
Tx	877.38	Rx	832.38	Chan	0246	#246
Tx	877.41	Rx	832.41	Chan	0247	#247
Tx	877.44	Rx	832.44	Chan	0248	#248
Tx	877.47	Rx	832.47	Chan	0249	#249

Tx	877.50	Rx	832.50	Chan	0250	#250
Tx	877.53	Rx	832.53	Chan	0251	#251
Tx	877.56	Rx	832.56	Chan	0252	#252
Tx	877.59	Rx	832.59	Chan	0253	#253
Tx	877.62	Rx	832.62	Chan	0254	#254
Tx	877.65	Rx	832.65	Chan	0255	#255
Tx	877.68	Rx	832.68	Chan	0256	#256
Tx	877.71	Rx	832.71	Chan	0257	#257
Tx	877.74	Rx	832.74	Chan	0258	#258
Tx	877.77	Rx	832.77	Chan	0259	#259
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Tx	877.83	Rx	832.83	Chan	0261	#261
Tx	877.86	Rx	832.86	Chan	0262	#262
Tx	877.89	Rx	832.89	Chan	0263	#263
Tx	877.92	Rx	832.92	Chan	0264	#264
Tx	877.95	Rx	832.95	Chan	0265	#265
Tx	877.98	Rx	832.98	Chan	0266	#266
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Tx	878.04	Rx	833.04	Chan	0268	#268
Tx	878.07	Rx	833.07	Chan	0269	#269
Tx	878.10	Rx	833.10	Chan	0270	#270
Tx	878.13	Rx	833.13	Chan	0271	#271
Tx	878.16	Rx	833.16	Chan	0272	#272
Tx	878.19	Rx	833.19	Chan	0273	#273
Tx	878.22	Rx	833.22	Chan	0274	#274
Tx	878.25	Rx	833.25	Chan	0275	#275
Tx	878.28	Rx	833.28	Chan	0276	#276
Tx	878.31	Rx	833.31	Chan	0277	#277
Tx	878.34	Rx	833.34	Chan	0278	#278
Tx	878.37	Rx	833.37	Chan	0279	#279
Tx	878.40	Rx	833.40	Chan	0280	#280
Tx	878.43	Rx	833.43	Chan	0281	#281
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Tx	878.49	Rx	833.49	Chan	0283	#283
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Tx	878.55	Rx	833.55	Chan	0285	#285
Tx	878.58	Rx	833.58	Chan	0286	#286
Tx	878.61	Rx	833.61	Chan	0287	#287
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Tx	878.67	Rx	833.67	Chan	0289	#289
Tx	878.70	Rx	833.70	Chan	0290	#290
Tx	878.73	Rx	833.73	Chan	0291	#291
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Tx	878.79	Rx	833.79	Chan	0293	#293
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Tx	878.85	Rx	833.85	Chan	0295	#295
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Tx	879.12	Rx	834.12	Chan	0304	#304
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Tx	879.39	Rx	834.39	Chan	0313	#313
Tx	879.42	Rx	834.42	Chan	0314	#314
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Tx	879.51	Rx	834.51	Chan	0317	#317
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Tx	879.63	Rx	834.63	Chan	0321	#321
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Tx	879.69	Rx	834.69	Chan	0323	#323
Tx	879.72	Rx	834.72	Chan	0324	#324
Tx	879.75	Rx	834.75	Chan	0325	#325
Tx	879.78	Rx	834.78	Chan	0326	#326
Tx	879.81	Rx	834.81	Chan	0327	#327
Tx	879.84	Rx	834.84	Chan	0328	#328
Tx	879.87	Rx	834.87	Chan	0329	#329
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Tx	879.96	Rx	834.96	Chan	0332	#332
Tx	879.99	Rx	834.99	Chan	0333	#333
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Tx	880.05	Rx	835.05	Chan	0335	#335
Tx	880.08	Rx	835.08	Chan	0336	#336
Tx	880.11	Rx	835.11	Chan	0337	#337
Tx	880.14	Rx	835.14	Chan	0338	#338
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Tx	880.92	Rx	835.92	Chan	0364	#364
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Tx	883.89	Rx	838.89	Chan	0463	#463
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Tx	883.95	Rx	838.95	Chan	0465	#465

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Tx	884.19	Rx	839.19	Chan	0473	#473
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Tx	885.24	Rx	840.24	Chan	0508	#508
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Tx	885.33	Rx	840.33	Chan	0511	#511
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Tx	885.39	Rx	840.39	Chan	0513	#513
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Tx	885.45	Rx	840.45	Chan	0515	#515
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Tx	887.04	Rx	842.04	Chan	0568	#568
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Tx	887.28	Rx	842.28	Chan	0576	#576
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Tx	887.34	Rx	842.34	Chan	0578	#578
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Tx	887.85	Rx	842.85	Chan	0595	#595
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Tx	888.33	Rx	843.33	Chan	0611	#611
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Tx	888.39	Rx	843.39	Chan	0613	#613
Tx	888.42	Rx	843.42	Chan	0614	#614
Tx	888.45	Rx	843.45	Chan	0615	#615
Tx	888.48	Rx	843.48	Chan	0616	#616
Tx	888.51	Rx	843.51	Chan	0617	#617
Tx	888.54	Rx	843.54	Chan	0618	#618
Tx	888.57	Rx	843.57	Chan	0619	#619
Tx	888.60	Rx	843.60	Chan	0620	#620
Tx	888.63	Rx	843.63	Chan	0621	#621
Tx	888.66	Rx	843.66	Chan	0622	#622
Tx	888.69	Rx	843.69	Chan	0623	#623
Tx	888.72	Rx	843.72	Chan	0624	#624
Tx	888.75	Rx	843.75	Chan	0625	#625
Tx	888.78	Rx	843.78	Chan	0626	#626
Tx	888.81	Rx	843.81	Chan	0627	#627

Tx	888.84	Rx	843.84	Chan	0628	#628
Tx	888.87	Rx	843.87	Chan	0629	#629
Tx	888.90	Rx	843.90	Chan	0630	#630
Tx	888.93	Rx	843.93	Chan	0631	#631
Tx	888.96	Rx	843.96	Chan	0632	#632
Tx	888.99	Rx	843.99	Chan	0633	#633
Tx	889.02	Rx	844.02	Chan	0634	#634
Tx	889.05	Rx	844.05	Chan	0635	#635
Tx	889.08	Rx	844.08	Chan	0636	#636
Tx	889.11	Rx	844.11	Chan	0637	#637
Tx	889.14	Rx	844.14	Chan	0638	#638
Tx	889.17	Rx	844.17	Chan	0639	#639
Tx	889.20	Rx	844.20	Chan	0640	#640
Tx	889.23	Rx	844.23	Chan	0641	#641
Tx	889.26	Rx	844.26	Chan	0642	#642
Tx	889.29	Rx	844.29	Chan	0643	#643
Tx	889.32	Rx	844.32	Chan	0644	#644
Tx	889.35	Rx	844.35	Chan	0645	#645
Tx	889.38	Rx	844.38	Chan	0646	#646
Tx	889.41	Rx	844.41	Chan	0647	#647
Tx	889.44	Rx	844.44	Chan	0648	#648
Tx	889.47	Rx	844.47	Chan	0649	#649
Tx	889.50	Rx	844.50	Chan	0650	#650
Tx	889.53	Rx	844.53	Chan	0651	#651
Tx	889.56	Rx	844.56	Chan	0652	#652
Tx	889.59	Rx	844.59	Chan	0653	#653
Tx	889.62	Rx	844.62	Chan	0654	#654
Tx	889.65	Rx	844.65	Chan	0655	#655
Tx	889.68	Rx	844.68	Chan	0656	#656
Tx	889.71	Rx	844.71	Chan	0657	#657
Tx	889.74	Rx	844.74	Chan	0658	#658
Tx	889.77	Rx	844.77	Chan	0659	#659
Tx	889.80	Rx	844.80	Chan	0660	#660
Tx	889.83	Rx	844.83	Chan	0661	#661
Tx	889.86	Rx	844.86	Chan	0662	#662
Tx	889.89	Rx	844.89	Chan	0663	#663
Tx	889.92	Rx	844.92	Chan	0664	#664
Tx	889.95	Rx	844.95	Chan	0665	#665
Tx	889.98	Rx	844.98	Chan	0666	#666

Upper Set Part 1 (667-799)

Tower Freq.	Mobile Freq.	11xxxx#	Channel
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Tx	890.01	Rx	845.01	Chan	0667	#667
Tx	890.04	Rx	845.04	Chan	0668	#668
Tx	890.07	Rx	845.07	Chan	0669	#669
Tx	890.10	Rx	845.10	Chan	0670	#670
Tx	890.13	Rx	845.13	Chan	0671	#671
Tx	890.16	Rx	845.16	Chan	0672	#672
Tx	890.19	Rx	845.19	Chan	0673	#673
Tx	890.22	Rx	845.22	Chan	0674	#674
Tx	890.25	Rx	845.25	Chan	0675	#675
Tx	890.28	Rx	845.28	Chan	0676	#676

Tx	890.31	Rx	845.31	Chan	0677	#677
Tx	890.34	Rx	845.34	Chan	0678	#678
Tx	890.37	Rx	845.37	Chan	0679	#679
Tx	890.40	Rx	845.40	Chan	0680	#680
Tx	890.43	Rx	845.43	Chan	0681	#681
Tx	890.46	Rx	845.46	Chan	0682	#682
Tx	890.49	Rx	845.49	Chan	0683	#683
Tx	890.52	Rx	845.52	Chan	0684	#684
Tx	890.55	Rx	845.55	Chan	0685	#685
Tx	890.58	Rx	845.58	Chan	0686	#686
Tx	890.61	Rx	845.61	Chan	0687	#687
Tx	890.64	Rx	845.64	Chan	0688	#688
Tx	890.67	Rx	845.67	Chan	0689	#689
Tx	890.70	Rx	845.70	Chan	0690	#690
Tx	890.73	Rx	845.73	Chan	0691	#691
Tx	890.76	Rx	845.76	Chan	0692	#692
Tx	890.79	Rx	845.79	Chan	0693	#693
Tx	890.82	Rx	845.82	Chan	0694	#694
Tx	890.85	Rx	845.85	Chan	0695	#695
Tx	890.88	Rx	845.88	Chan	0696	#696
Tx	890.91	Rx	845.91	Chan	0697	#697
Tx	890.94	Rx	845.94	Chan	0698	#698
Tx	890.97	Rx	845.97	Chan	0699	#699
Tx	891.00	Rx	846.00	Chan	0700	#700
Tx	891.03	Rx	846.03	Chan	0701	#701
Tx	891.06	Rx	846.06	Chan	0702	#702
Tx	891.09	Rx	846.09	Chan	0703	#703
Tx	891.12	Rx	846.12	Chan	0704	#704
Tx	891.15	Rx	846.15	Chan	0705	#705
Tx	891.18	Rx	846.18	Chan	0706	#706
Tx	891.21	Rx	846.21	Chan	0707	#707
Tx	891.24	Rx	846.24	Chan	0708	#708
Tx	891.27	Rx	846.27	Chan	0709	#709
Tx	891.30	Rx	846.30	Chan	0710	#710
Tx	891.33	Rx	846.33	Chan	0711	#711
Tx	891.36	Rx	846.36	Chan	0712	#712
Tx	891.39	Rx	846.39	Chan	0713	#713
Tx	891.42	Rx	846.42	Chan	0714	#714
Tx	891.45	Rx	846.45	Chan	0715	#715
Tx	891.48	Rx	846.48	Chan	0716	#716
Tx	891.51	Rx	846.51	Chan	0717	#717
Tx	891.54	Rx	846.54	Chan	0718	#718
Tx	891.57	Rx	846.57	Chan	0719	#719
Tx	891.60	Rx	846.60	Chan	0720	#720
Tx	891.63	Rx	846.63	Chan	0721	#721
Tx	891.66	Rx	846.66	Chan	0722	#722
Tx	891.69	Rx	846.69	Chan	0723	#723
Tx	891.72	Rx	846.72	Chan	0724	#724
Tx	891.75	Rx	846.75	Chan	0725	#725
Tx	891.78	Rx	846.78	Chan	0726	#726
Tx	891.81	Rx	846.81	Chan	0727	#727
Tx	891.84	Rx	846.84	Chan	0728	#728
Tx	891.87	Rx	846.87	Chan	0729	#729
Tx	891.90	Rx	846.90	Chan	0730	#730

Tx	891.93	Rx	846.93	Chan	0731	#731
Tx	891.96	Rx	846.96	Chan	0732	#732
Tx	891.99	Rx	846.99	Chan	0733	#733
Tx	892.02	Rx	847.02	Chan	0734	#734
Tx	892.05	Rx	847.05	Chan	0735	#735
Tx	892.08	Rx	847.08	Chan	0736	#736
Tx	892.11	Rx	847.11	Chan	0737	#737
Tx	892.14	Rx	847.14	Chan	0738	#738
Tx	892.17	Rx	847.17	Chan	0739	#739
Tx	892.20	Rx	847.20	Chan	0740	#740
Tx	892.23	Rx	847.23	Chan	0741	#741
Tx	892.26	Rx	847.26	Chan	0742	#742
Tx	892.29	Rx	847.29	Chan	0743	#743
Tx	892.32	Rx	847.32	Chan	0744	#744
Tx	892.35	Rx	847.35	Chan	0745	#745
Tx	892.38	Rx	847.38	Chan	0746	#746
Tx	892.41	Rx	847.41	Chan	0747	#747
Tx	892.44	Rx	847.44	Chan	0748	#748
Tx	892.47	Rx	847.47	Chan	0749	#749
Tx	892.50	Rx	847.50	Chan	0750	#750
Tx	892.53	Rx	847.53	Chan	0751	#751
Tx	892.56	Rx	847.56	Chan	0752	#752
Tx	892.59	Rx	847.59	Chan	0753	#753
Tx	892.62	Rx	847.62	Chan	0754	#754
Tx	892.65	Rx	847.65	Chan	0755	#755
Tx	892.68	Rx	847.68	Chan	0756	#756
Tx	892.71	Rx	847.71	Chan	0757	#757
Tx	892.74	Rx	847.74	Chan	0758	#758
Tx	892.77	Rx	847.77	Chan	0759	#759
Tx	892.80	Rx	847.80	Chan	0760	#760
Tx	892.83	Rx	847.83	Chan	0761	#761
Tx	892.86	Rx	847.86	Chan	0762	#762
Tx	892.89	Rx	847.89	Chan	0763	#763
Tx	892.92	Rx	847.92	Chan	0764	#764
Tx	892.95	Rx	847.95	Chan	0765	#765
Tx	892.98	Rx	847.98	Chan	0766	#766
Tx	893.01	Rx	848.01	Chan	0767	#767
Tx	893.04	Rx	848.04	Chan	0768	#768
Tx	893.07	Rx	848.07	Chan	0769	#769
Tx	893.10	Rx	848.10	Chan	0770	#770
Tx	893.13	Rx	848.13	Chan	0771	#771
Tx	893.16	Rx	848.16	Chan	0772	#772
Tx	893.19	Rx	848.19	Chan	0773	#773
Tx	893.22	Rx	848.22	Chan	0774	#774
Tx	893.25	Rx	848.25	Chan	0775	#775
Tx	893.28	Rx	848.28	Chan	0776	#776
Tx	893.31	Rx	848.31	Chan	0777	#777
Tx	893.34	Rx	848.34	Chan	0778	#778
Tx	893.37	Rx	848.37	Chan	0779	#779
Tx	893.40	Rx	848.40	Chan	0780	#780
Tx	893.43	Rx	848.43	Chan	0781	#781
Tx	893.46	Rx	848.46	Chan	0782	#782
Tx	893.49	Rx	848.49	Chan	0783	#783
Tx	893.52	Rx	848.52	Chan	0784	#784

Tx	893.55	Rx	848.55	Chan	0785	#785
Tx	893.58	Rx	848.58	Chan	0786	#786
Tx	893.61	Rx	848.61	Chan	0787	#787
Tx	893.64	Rx	848.64	Chan	0788	#788
Tx	893.67	Rx	848.67	Chan	0789	#789
Tx	893.70	Rx	848.70	Chan	0790	#790
Tx	893.73	Rx	848.73	Chan	0791	#791
Tx	893.76	Rx	848.76	Chan	0792	#792
Tx	893.79	Rx	848.79	Chan	0793	#793
Tx	893.82	Rx	848.82	Chan	0794	#794
Tx	893.85	Rx	848.85	Chan	0795	#795
Tx	893.88	Rx	848.88	Chan	0796	#796
Tx	893.91	Rx	848.91	Chan	0797	#797
Tx	893.94	Rx	848.94	Chan	0798	#798
Tx	893.97	Rx	848.97	Chan	0799	#799

Upper Set Part 2 (991-1023)

Tower Freq.	Mobile Freq.	11xxxx#	Channel
Tx	869.04	Rx	824.04 Chan 0991 #800
Tx	869.07	Rx	824.07 Chan 0992 #801
Tx	869.10	Rx	824.10 Chan 0993 #802
Tx	869.13	Rx	824.13 Chan 0994 #803
Tx	869.16	Rx	824.16 Chan 0995 #804
Tx	869.19	Rx	824.19 Chan 0996 #805
Tx	869.22	Rx	824.22 Chan 0997 #806
Tx	869.25	Rx	824.25 Chan 0998 #807
Tx	869.28	Rx	824.28 Chan 0999 #808
Tx	869.31	Rx	824.31 Chan 1000 #809
Tx	869.34	Rx	824.34 Chan 1001 #810
Tx	869.37	Rx	824.37 Chan 1002 #811
Tx	869.40	Rx	824.40 Chan 1003 #812
Tx	869.43	Rx	824.43 Chan 1004 #813
Tx	869.46	Rx	824.46 Chan 1005 #814
Tx	869.49	Rx	824.49 Chan 1006 #815
Tx	869.52	Rx	824.52 Chan 1007 #816
Tx	869.55	Rx	824.55 Chan 1008 #817
Tx	869.58	Rx	824.58 Chan 1009 #818
Tx	869.61	Rx	824.61 Chan 1010 #819
Tx	869.64	Rx	824.64 Chan 1011 #820
Tx	869.67	Rx	824.67 Chan 1012 #821
Tx	869.70	Rx	824.70 Chan 1013 #822
Tx	869.73	Rx	824.73 Chan 1014 #823
Tx	869.76	Rx	824.76 Chan 1015 #824
Tx	869.79	Rx	824.79 Chan 1016 #825
Tx	869.82	Rx	824.82 Chan 1017 #826
Tx	869.85	Rx	824.85 Chan 1018 #827
Tx	869.88	Rx	824.88 Chan 1019 #828
Tx	869.91	Rx	824.91 Chan 1020 #829
Tx	869.94	Rx	824.94 Chan 1021 #830
Tx	869.97	Rx	824.97 Chan 1022 #831
Tx	870.00	Rx	825.00 Chan 1023 #832 or #0

T\*R\*I\*K\*-C\*L\*I\*P\*\*\*\*\*S\*E\*C\*T\*I\*O\*N\*\*1\*1

I got this from a BBS in the (708) are code. It had no name associated with it. Since NOONE has mailed me any other info on it, I will keep this in the bible until someone bitches or sends me something tangible. Besides, with Loadkit so readily available, who has the time to mess with it?

-ML

### MOTOROLA "TRIK-CLIP"

This is the plans I received for the Flip. Supposedly if one knew the pinouts on the other moto phones one could transpose. (maybe!) I never tested this so I don't know if it works. The chip in the flip the text is talking about is a 32 pin square plcc

After Phone Disassembly Locate 27c512 EPROM on phone board. This is On The Upper Right Side Of The Display Next To The Roam Indicator. This Is a 32 pin Square device. \*\*Note the dot and beveled edge for pin orientation (the dot is pin 1) Count to the left counter clock wise 2 3 4 5 and so on. To the Right or clockwise of the dot is pin 32 Vcc. This will aid you in your count to find pin 25 which is the EPROM output enable. This pin is at ground or Vss - Level. \*\*Note Pin 25 on EPROM in phone must be lifted from the phone board ground or Vss state. Use an X-acto Knife and or soldering iron and tools to cut pin at board level where pin narrows. Do not bend wide part of pin up on EPROM as this could break off of EPROM. Also Wide Part of pin Will be used to make contact with EPROM test clip adapter. The EPROM test clip adapter will take pin 25 to logic high through an 8 to 10 thousand resistor to pin 32 Vcc. This will Gate off all data Commands from the phone board EPROM and allow the EPROM test clip adapter to take over. \*\*Note test clip could touch narrow part of cut off pin on board and cause phone not to power up please remove or fold down as low as possible so test clip only touches side of EPROM.

After programming is complete put pin 25 back together or find a suitable ground or Vss - source. The phone will power up and work without pin 25 put back together but for long term precaution put back to a logic zero or ground to enable the output enable.

To use the EPROM test clip adapter pull the locking wedge on the test clip into the upper position. Seat the EPROM test clip adapter onto the EPROM in the phone. Make sure to orient the dot and beveled edge with each other. Push the locking wedge down to lock the EPROM test clip adapter onto the EPROM in the phone. Hook up the programming cable to the computer and plug into the jack on the base of the phone. Also hook up the loose lead with a jumper to the center terminal between the battery contacts. Turn power on green light on phone display should come on then a complete display test will light up after that the no service will blink along with the signal level mark in corner of display. If the antenna is still on the phone it could change to roam or something else. I suggest remove the antenna so the cell sight will not see you. If you do

not get a power on test with the display there are 3 possible things (1) pin 25 on phone board is touching the test clip this can be checked by looking with a volt meter at pin 25 where resistor connects for 4 to 5 volts pos with reference to ground. (2) Test clip is not sitting on chip good some times you have pull the test clip up off of the EPROM a 64th of an inch all the way around. (3) there is corrupt data, Pull the EPROM test clip off Phone check to see if power on display is there.

Computer see if data or phone number or cell sight code or data whole is ok I've seen the cell sight ID corrupt and the phone play dead on the power on test. The test clip sometimes needs maintenance look at the gold pins.

Make sure all the pins are level with the edge of it. If not take an X-acto or pin and lightly bend them out so they are along the edge of the plastic of the test clip.

Always check to see if EPROM in phone contacts are clean before putting test clip on. \*\*Note when test clip is on phone - only change the ESN only. \*The other data phone number lock and so on can be changed without the test clip and should be done so.

The software version in the test clip is 9148 you will see this in the right corner of the computer. Sometimes the program will crash during the ESN write this will put all zeros in the ESN field check the test clip try again. Sometimes I've had to do this 3 or 4 times. Also watch the phone display for codes I've seen at the end of a write the code (FO8) just before power down I've had no problem there but during the key write (FO8) means I've crashed.

Also during the time when the program is counting back into the phone I've had (F10) show up in the display of the phone this problem means the next time you may not get the power on display test pull test clip read phone check data to see if cell sight code is corrupt or some other data correct try again. A word of caution do not push on EPROM on top of test clip as this could seat EPROM lower into adapter and cause bad contact. To remove test clip pull locking wedge up to unlock the EPROM test clip adapter from the EPROM in the phone. Continue pulling up to lift the EPROM test clip adapter from the EPROM in the phone.

P\*A\*G\*E\*R\*S\*\*\*\*\*S\*E\*C\*T\*I\*O\*N\*\*1\*2

Subject: BRAVO pagers - undocumented test features

SELF TEST:

TO PUT UNIT INTO A SELF TEST TURN OFF PAGER. NOW HOLD DOWN THE GRAY ARROW KEY AND BLACK LOCK KEY AT THE SAME TIME AND TURN ON PAGER. THIS TELLS THE CPU IN PAGER TO GO INTO A SELF TEST. YOU WILL GET A 2 SECOND LONG BEEP, RELEASE THE GRAY & BLACK BUTTON AND PUSH THE GRAY BUTTON BEFORE THE 2 SECOND BEEP ENDS. IF YOU DID ALL THIS IN TIME YOU WILL HAVE "SPL" OR "PAGING P?" AND NOT THE DOTTED LINE



YOU ARE USED TO SEEING WHEN YOU TURN ON PAGER . BY PRESSING THE GRAY KEY IT WILL GO TO A DISPLAY TEST, PRESS AGAIN AND YOU WILL GET THE PAGER'S CAPCODE (CAPCODE IS THE UNIQUE SERIAL NUMBER WHICH THE PAGING TRANSMITTERS TRANSMITS TO YOUR PAGER TO TURN ON YOUR PAGER WHEN SOMEONE PAGES YOU). WAIT AND IN ABOUT 3 SECONDS IT WILL DISPLAY YOUR SECOND CAPCODE (IF YOU HAVE ONE-MOST DON'T) PRESS THE GRAY KEY AGAIN AND IT WILL CHECK CONTROLS, PRESS IT AGAIN AND IT WILL TEST VIBRATOR FUNCTION (IF YOUR PAGER HAS IT). TURN OFF PAGER AND TURN ON AGAIN TO DISABLE SELF TEST.

SPECIAL PROGRAMMED FEATURES:

TAKE OFF BATTERIES CLIP AND IN CENTER TOWARD THE FRONT OF PAGER YOU WILL SEE A PRINTED CIRCUIT BOARD EDGE PINS (JUST LIKE THE BACK SIDE OF A NETENDO CARTAGE. THIS EDGE PINS ARE PLUGGED INTO A CORE PROGRAMMER. THE PROGRAMMER CAN CHANGE.

CAPCODES: SEE ABOVE

AUTORESET TO MANUAL: YOUR PAGER IN AUTORESET WILL BEEP 8 TIMES THEN STOP BEEPING. MANUAL RESET THE BEEPER WILL KEEP BEEPING TILL THE COWS COME HOME OR YOU PUSH A BUTTON TO LOOK AT THE MESSAGE.

DISPLAY: ENGLISH PROMPTS OR INTERNATIONAL-SYMBOL SCREENS DISPLAYED.

SILENT MODE CHIRP: FOR A SINGLE BEEP WHEN YOUR PAGED. NOT FOR USE ON VIBRATOR PAGER'S.

BEEP ON BAD DATA: YOUR PAGER HEARS IT'S CAPCODE BUT RECEIVED BAD DISPLAY MESSAGE, IT WILL PUT "EEE" ACROSS DISPLAY TO SHOW BAD RECEIVE. IF THIS IS FEATURE IS NOT ENABLED AND YOU RECEIVE BAD DATA YOUR PAGER WILL NOT BEEP AND YOU WILL HAVE NO IDEA SOMEONE TRYED TO PAGE YOU.

\*\*\*\*\*  
NOW LETS SAY YOU ARE UNHAPPY WITH YOUR PAGING COMPANY "A" BUT OWN YOUR PAGER. YOUR \$200.00+ PAGER IS TUNED TO THEIR FREQUENCY AND YOU WANT TO GO TO ANOTHER PAGER COMPANY BUT NOT LOSE ALL THE MONEY YOU SPENT FOR YOUR PAGER. THE ANSWER IS TO RECRYSTAL PAGER TO THE NEW FREQUENCY OF COMPANY "B". BUT WE MUST ANSWER SOME QUESTIONS FIRST TO SEE WHAT IT WILL COST.

1. WHAT IS YOUR PAGER'S CODING FORMAT (POCSAG) OR (GSC)  
THE EASY WAY TO TELL IS TO DO A SELF TEST AND READ CAPCODE. IF IT'S 7 NUMBERS IT'S POCSAG. IF IT'S 6 NUMBERS AND 1 LETTER IT'S GSC. IF YOUR PAGER DOES NOT MATCH THE SAME CODING FORMAT AS COMPANY "B" IT WILL COST MORE THEN IT'S WORTH TO CHANGE.

2. WHAT BAUD RATE IS YOUR PAGER WORKING AT ? DO SELF TEST AND IF DISPLAY SHOWS PAGING P1 PAGER IS WORKING AT 1200 BAUD OTHER WISE YOU ARE SAFE TO ASSUME 512 BAUD IT MUST MATCH COMPANY "B" BAUD RATE TO BE WORTH YOUR TIME.

3. ARE YOU IN THE SAME FREQUENCY BAND 931 MHz OR 450 MHz ETC.  
IF COMPANY "A" AND COMPANY "B" ARE NOT IN SAME BAND IT WILL TAKE A  
NEW RECEIVER BOARD TO CONVERT PAGER AND COST TO MUCH TO TRY.

IF ALL THE ANSWERS ABOVE SHOW YOU ARE COMPATIBLE YOU CAN CALL  
COMPANY "B" AND TELL THEM YOU WANT TO DO BUSINESS WITH THEM AND  
NEED A CAPCODE NUMBER SO YOU CAN GET PAGER RECRYSTALED AND HAVE A  
CAPCODE PROGRAMMED AT THE SAME TIME.

NOW YOU CAN HAVE COMPANY "B" RECOMMEND A SHOP THAT WILL  
RECRYSTAL PAGER OR LOOK UP ONE YOURSELF.