

# **UNIDEN PROGRAMMING CONTROL CODES FOR USE WITH UNIDEN SCANNERS**

## ***End User License Agreement*** **UNIDEN AMERICA CORPORATION**

**NOTICE TO USER:** THIS END USER LICENSE AGREEMENT ("EULA") IS A LEGAL AGREEMENT BETWEEN YOU AND UNIDEN. PLEASE READ THIS CAREFULLY BEFORE USING THE UNIDEN CODE. BY CLICKING THE "I AGREE TO THE TERMS OF THIS LICENSE AGREEMENT", OR BY USING ALL OR ANY PORTION OF THE UNIDEN CODE, YOU ARE CONFIRMING YOUR ACCEPTANCE OF THE UNIDEN CODE AND ALL THE TERMS AND CONDITIONS OF THIS AGREEMENT. IF YOU DO NOT AGREE, DO NOT USE THE UNIDEN CODE. CLICK THE "I DO NOT AGREE TO THE TERMS OF THIS LICENSE AGREEMENT" FOR THE INSTALLATION PROCESS TO TERMINATE.

### **1. DEFINITIONS**

- (A) "Uniden Code" means Uniden proprietary programming codes and commands used to control Uniden's scanner products.
- (B) "Use" or "Using" means to access, install, download, copy or otherwise benefit from using the functionality of the Uniden Code.
- (C) "Computer" means an electronic device that accepts information in digital or similar form and manipulates it for a specific result based on a sequence of instructions.
- (D) "Uniden" means Uniden America Corporation, a Delaware corporation, located at 4700 Amon Carter Boulevard, Fort Worth, Texas 76155, and its licensors, if any.

### **2. UNIDEN CODE LICENSE GRANTS**

- (A) You may utilize the Uniden Code on an "as is", at-will, royalty-free, personal, non-assignable, non-exclusive basis solely for the purpose of creating software or firmware products intended to extend the functionality of Uniden scanner products, or provide compatibility of Uniden scanner products with a PC or other control devices.
- (B) You agree that the Uniden Code will not be used to create a competing scanner product.

- (C) You agree not to use the Uniden Code functionality for purposes other than to control one or more of the Uniden scanner models to which the codes apply.
- (D) You acknowledge that the Uniden Code is provided “as-is” and that Uniden has no obligation to provide any additional support in the use of the Uniden Code beyond the disclosed documentation.
- (E) User acknowledges that, while reasonable efforts have been taken to ensure accuracy in the supplied documentation, said documents have been subjected to one or more translation stages that might have resulted in unclear, inaccurate, or incomplete information and that Uniden is under no obligation to correct or clarify supplied documentation of the Uniden Code.
- (F) You acknowledge that the Uniden Code is the sole property of Uniden.
- (G) You agree that the Uniden Code, documentation thereof and the related information provided by Uniden are confidential and proprietary information of Uniden (collectively “Uniden Confidential Information”).
- (H) You agree to mark any software containing all or part of the Uniden Code, and the written user materials accompanying units that incorporate Uniden Code with notices indicating, “This product contains Uniden proprietary and/or copyright control codes. Used with permission.”
- (I) You agree that this EULA does not need to be signed for it to take effect.
- (J) You agree to use the Uniden Code in its regular and proper manner.
- (K) You acknowledge that Uniden may update, modify or revise the Uniden Code at any time and shall not be obligated to provide such updates, modifications or revisions to you.
- (L) You acknowledge that the permission granted herein does not constitute endorsement by Uniden of any software or firmware products you may create in accordance with the purpose stated in section A herein; and you are solely responsible for the configuration of said software or firmware and/or any service matters relating to said software or firmware and/or any Uniden Code used with said software or firmware.
- (M) This license is personal to you and you may make copies of the Uniden Code only for your personal use.

- (N) You agree that Uniden may audit your use of the Uniden Code for compliance with these terms at any time.
- (O) You agree and represent that any products you create which incorporate the Uniden Code are in compliance with all applicable laws.
- (P) You shall defend, indemnify and hold harmless Uniden, its subsidiaries and affiliates, and all agents, employees, officers and directors of Uniden, its subsidiaries and affiliates, from all expenses, losses, costs, damages or liability (including reasonable attorneys' fees and court costs and expenses) arising out of or in connection with any claim or action in connection with the use of any products you create which incorporate the Uniden Code.

### **3. LICENSE RESTRICTIONS**

- (A) Other than as set forth in Section 2 of this EULA, you may not make or distribute copies of the Uniden Code, or electronically transfer the Uniden Code from one computer to another or over a network.
- (B) You may not alter, merge, modify, adapt or translate the Uniden Code, or decompile, reverse engineer, disassemble, or otherwise reduce the Uniden Code to a human-perceivable form.
- (C) You may not sell, rent, lease, assign or sublicense the Uniden Code.
- (D) You may not modify the Uniden Code or create derivative works based upon the Uniden Code.
- (E) You may not export the Uniden Code into any country prohibited by the United States Export Administration Act and the regulations thereunder.
- (F) In the event that you fail to comply with this EULA, Uniden may terminate the license and you must destroy all copies of the Uniden Code (with all other rights of both parties and all other provisions of this EULA surviving any such termination).

### **4. OWNERSHIP**

The foregoing license gives you limited license to use the Uniden Code. Uniden retains all right, title and interest, including all copyright and intellectual property rights, in and to, the Uniden Code or any derivative works, including but not limited to the structure and organization of the Uniden Code, and all copies thereof. All rights not specifically granted in this EULA, including Federal and

International Copyrights, are reserved by Uniden. Uniden reserves the right to terminate this license at any time.

## **5. WARRANTY DISCLAIMER**

- (A) THE UNIDEN CODE IS PROVIDED TO YOU ON AN "AS-IS" BASIS. UNIDEN PROVIDES NO TECHNICAL SUPPORT OR WARRANTIES FOR THE UNIDEN CODE.
- (B) UNIDEN AND ITS SUPPLIERS DISCLAIM ALL WARRANTIES AND REPRESENTATIONS (EXPRESS OR IMPLIED WHETHER BY STATUTE, COMMON LAW, CUSTOM, USAGE OR OTHERWISE) INCLUDING THE WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. ALSO, THERE IS NO WARRANTY OF SATISFACTORY QUALITY, INTEGRATION, NON-INFRINGEMENT OF THIRD PARTY RIGHTS AND TITLE OR QUIET ENJOYMENT. UNIDEN DOES NOT WARRANT THAT THE UNIDEN CODE IS ERROR-FREE OR WILL OPERATE WITHOUT INTERRUPTION. NO RIGHTS OR REMEDIES REFERRED TO IN ARTICLE 2A OF THE UCC WILL BE CONFERRED ON YOU UNLESS EXPRESSLY GRANTED HEREIN.
- (C) IF APPLICABLE LAW REQUIRES ANY WARRANTIES WITH RESPECT TO THE UNIDEN CODE, ALL SUCH WARRANTIES ARE LIMITED IN DURATION TO THIRTY (30) DAYS FROM THE DATE OF DELIVERY.
- (D) NO ORAL OR WRITTEN INFORMATION OR ADVICE GIVEN BY UNIDEN, ITS DEALERS, SUPPLIERS, DISTRIBUTORS, AGENTS OR EMPLOYEES SHALL CREATE A WARRANTY OR IN ANY WAY INCREASE THE SCOPE OF ANY WARRANTY PROVIDED HEREIN.

## **6. LIMITATION OF LIABILITY**

- (A) NEITHER UNIDEN NOR ITS SUPPLIERS SHALL BE LIABLE TO YOU OR ANY THIRD PARTY FOR ANY INDIRECT, SPECIAL, INCIDENTAL, PUNITIVE, COVER OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR THE INABILITY TO USE EQUIPMENT OR ACCESS DATA, LOSS OF BUSINESS, LOSS OF PROFITS, BUSINESS INTERRUPTION OR THE LIKE), ARISING OUT OF THE USE OF, OR INABILITY TO USE, THE UNIDEN CODE AND BASED ON ANY THEORY OF LIABILITY INCLUDING BREACH OF CONTRACT, BREACH OF WARRANTY, TORT (INCLUDING NEGLIGENCE), PRODUCT LIABILITY OR OTHERWISE, EVEN IF UNIDEN OR ITS REPRESENTATIVES HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES AND EVEN IF A REMEDY SET

FORTH HEREIN IS FOUND TO HAVE FAILED OF ITS ESSENTIAL PURPOSE.

- (B) UNIDEN'S TOTAL LIABILITY TO YOU FOR ACTUAL DAMAGES FOR ANY CAUSE WHATSOEVER WILL BE LIMITED TO THE GREATER OF \$10 OR THE AMOUNT PAID BY YOU FOR THE UNIDEN CODE THAT CAUSED SUCH DAMAGE.
- (C) THE FOREGOING LIMITATIONS ON LIABILITY ARE INTENDED TO APPLY TO THE WARRANTIES AND DISCLAIMERS ABOVE AND ALL OTHER ASPECTS OF THIS EULA.

## **7. COMPLIANCE WITH LAWS**

Uniden and its affiliates, which offer the Uniden Code to you, are headquartered in the United States. Uniden makes no representation that the Uniden Code is appropriate or legal for use inside or outside the United States. You are responsible for all compliance with your local laws, and use of the Uniden Code where illegal is expressly prohibited.

## **8. GOVERNING LAW AND VENUE**

This EULA shall be interpreted, construed and governed by the laws of the State of Texas, USA, without reference to its laws relating to conflicts of law and not including the provisions of the 1980 United Nations Convention on Contracts for the International Sale of Goods. Venue for all disputes arising under this Agreement shall lie exclusively in the District Courts of the State of Texas in Tarrant County or the Federal District Courts of the Northern District of Texas (as permitted by law) and each party agrees not to contest the personal jurisdiction of these courts. Notwithstanding the foregoing, however, Uniden shall have the right to commence and prosecute any legal or equitable action or proceeding before any non-US court of competent jurisdiction to obtain injunctive or other relief in the event that, in the opinion of Uniden, such action is necessary or desirable.

## **9. GENERAL PROVISIONS.**

This EULA contains the complete agreement between the parties with respect to the subject matter hereof, and supersedes all prior or contemporaneous agreements or understandings, whether oral or written. You agree that any varying or additional terms contained in any purchase order or other written notification or document issued by you in relation to the Uniden Code licensed hereunder shall be of no effect. The failure or delay of Uniden to exercise any of its rights under this EULA or upon any breach of this EULA shall not be deemed a waiver of those rights or of the breach.

If any provision of this EULA shall be held by a court of competent jurisdiction to be contrary to law, that provision will be enforced to the maximum extent permissible, and the remaining provisions of this EULA will remain in full force and effect.

All questions concerning this EULA shall be directed to: Uniden America Corporation, 4700 Amon Carter Boulevard, Fort Worth, Texas 76155.

UNIDEN and other trademarks contained in the Uniden Code are trademarks or registered trademarks of Uniden America Corporation in the United States and/or other countries. You may not remove or alter any trademark, trade names, product names, logo, copyright or other proprietary notices, legends, symbols or labels in the Uniden Code. This EULA does not authorize you to use the UNIDEN name or any of their respective trademarks.

Trademarks and registered trademarks:

All products or service names mentioned in the Uniden Code are trademarks or registered trademarks of Uniden America Corporation.

Copyright © 2003-2004

Uniden America Corporation

ALL RIGHTS RESERVED

## Appendix B

### REMOTE COMMAND

Version 1.06

#### 【Remote Communication Format】

BPS rate : 2400/4800/9600/19200/38400/57600 bps  
Start/Stop bit : 1 bit, 1 bit  
Data Length : 8 bit  
Parity Check : None  
Code : ASCII  
Flow Control : None  
Return Code : Carriage Return only

\*1 In case of controlling with program, insert waiting time between commands.

\*2 On MENU mode, only key emulation commands is valid.

\*3 The command to change the scanner setting may change a setup item except for the applicable setup item, too.

Most of these commands depend on the specifications of your Scanner.

Ex) "PM" command or "PR" command

\*4 APCO P-25 is working as TYPE2. (Not supported)

#### 【FORMAT OF THIS DOCUMENT】

##### <COMMAND NAME>

Summary explanation of the function of the command

Controller → Radio

Command format

Radio → Controller

Response format

※ Error message isn't described in this document,

but the unit sends error message to the controller as follows.

- |                                       |            |
|---------------------------------------|------------|
| 1) Command format error / Value error | : ERR[¥r]  |
| 2) The command is invalid at the time | : NG[¥r]   |
| 3) Flaming error                      | : FER[¥r]  |
| 4) Overrun error                      | : ORER[¥r] |

※ [¥r] means "to hit the Enter key" or "to send the Return code".

---

---

<COMMAND AC>

Clear(Initialize) all memory.

---

---

Controller → Radio  
AC[¥r]

Radio → Controller  
OK[¥r]

This command instructs the unit to clear all the memories.  
All the memories are set for initial setting  
This command is valid at any time.

Note) There needs about 10 seconds execute time.  
Remote does not become an initial-setting value.  
Start from scanning(start channel: CH 1) by initial setting.

---

---

<COMMAND AF>

Confirm/Set EDACS AFS (Agency, Fleet, SUBFLEET) to DECIMAL ID Form mode ON/OFF .

---

---

Controller → Radio

- ① AF[¥r] : Confirm AFS to DECIMAL ID Form mode ON/OFF
- ② AFN[¥r] : AFS to DECIMAL ID Form mode ON
- AFF[¥r] : AFS to DECIMAL ID Form mode OFF

Radio → Controller

- ① AFN[¥r] : AFS to DECIMAL ID Form mode ON
- AFF[¥r] : AFS to DECIMAL ID Form mode OFF
- ② OK[¥r]

Note:

If you add the Bank No. (A-J) at the end, you can select optional bank.  
Ex) "AF A" or "AFN A"

This command instructs the unit to turn or confirm AFS ID function ON/OFF.

---

---

<COMMAND AL> Not Support

Confirm/Set Auto Light function ON/OFF .

---

---

Controller → Radio

- ① AL[¥r] : Confirm Frequency Identification function ON/OFF
- ② ALN[¥r] : Auto Light function ON
- ALF[¥r] : Auto Light function OFF

Radio → Controller

- ① ALN[¥r] : Auto Light ON / ALF[¥r] : Auto Light OFF
- ② OK[¥r]

This command instructs the unit to turn or confirm Auto Light function ON/OFF.



---

---

<COMMAND AR>

Confirm/set Tape out recording function ON/OFF

---

---

Controller → Radio

- ① AR[¥r] :Confirm TAPE OUT recording Function ON/OFF
- ② ARN[¥r] :TAPE OUT recording Function ON
- ARF[¥r] :TAPE OUT recording Function OFF

Radio → Controller

- ① ARN[¥r] :TAPE OUT recording Function ON
  - ARF[¥r] :TAPE OUT recording Function OFF
  - ② OK[¥r]
- 
- 

<COMMAND AT>

Confirm/Set ATT function ON/OFF .

---

---

Controller → Radio

- ① AT[¥r] :Confirm ATT function ON/OFF
- ② ATN[¥r] :ATT ON
- ATF[¥r] :ATT OFF

Radio → Controller

- ① ATN[¥r] :ATT ON
- ATF[¥r] :ATT OFF
- ② OK[¥r]

This command instructs the unit to turn or confirm ATT function ON/OFF.

---

---

<COMMAND AP> Not supportes

Confirm/ Set Apco card function Enable/Disable

---

---

Controller → Radio

- ① AP[¥r] :Confirm Apco card function
- ② APN[¥r] :Enable Apco card function
- APF[¥r] :Disable Apco card function

Radio → Controller

- ① APN[¥r] :Enable Apco card function
- APF[¥r] :Disable Apco card function
- ② OK[¥r]

=====

<COMMAND AW> Not Supported  
Confirm/set Activity ID Window ON/OFF

=====

Controller → Radio

- ① AW @[¥r] :Confirm Activity ID Window ON/OFF
- ② AWN @[¥r] :Activity ID Window ON
- AWF @[¥r] :Activity ID Window OFF
- @:Bank No. (A-J)

Radio → Controller

- ① AWN @[¥r] :Activity ID Window ON
- AWF @[¥r] :Activity ID Window OFF
- @:Bank No. (A-J)
- ② OK[¥r]

=====

<COMMAND BA> Not supported  
Confirm/Set BEEP ALERT feature ON/OFF .

=====

Controller → Radio

- ① Confirm BEEP ALERT ON or OFF
  - BA C ###[¥r] :Confirm BEEP ALERT ON/OFF for Channel of the memory
  - ###:Channel No. (001 – 500)
  - BA I \$ &[¥r] :Confirm BEEP ALERT ON/OFF for TALK GROUP ID
  - \$ &:ID Memory No.
  - \$:Bank No. (A-J)
  - &:List No. (A-J)
  - ?:Location No. (1-9,0) Note "0" is Location No.10
- ② Set BEEP ALERT
  - BAN C ###[¥r] :Set BEEP ALERT to ON for the Channel memory
  - BAF C ###[¥r] :Set BEEP ALERT to OFF for the Channel memory
  - ###:channel No. (001 – 500)
  - BAN I \$ &[¥r] :Set BEEP ALERT to ON for the ID memory
  - BAF I \$ &[¥r] :Set BEEP ALERT to OFF for the ID memory
  - \$ &:ID Memory No.
  - \$:Bank No. (A-J)
  - &:List No. (A-J)
  - ?:Location No. (1-9,0) Note "0" is Location No.10
- ③ ON/OFF function which informs ALERT condition when "BEEP ALERT" assigned signal is received or "BEEP ALERT" assigned Talk ID is reception
  - BAN[¥r] :The function which informs ALERT condition is ON
  - BAF[¥r] :The function which informs ALERT condition is OFF
- ④ Confirm the function which informs BEEP ALERT condition is ON/OFF
  - BA[¥r]

Radio → Controller

- ① BAN C ###[¥r] :BEEP ALERT of the Channel memory is ON  
 BAF C ###[¥r] :BEEP ALERT of the Channel memory is OFF  
 ###:Channel No. (001 – 500)
- BAN I \$ &[¥r] :BEEP ALERT of the ID memory is ON  
 BAF I \$ &[¥r] :BEEP ALERT of the ID memory is OFF  
 \$ &: ID Memory No.  
 \$:Bank No. (A–J)  
 &:List No. (A–J)  
 %:Location No. (1–9, 0) Note “0” is Location No.10
- ② OK[¥r]
- ③ Informs when BEEP ALERT is sounded  
 BEEP ALERT OUT[¥r]
- ④ Informs the BEEP ALERT function ON/OFF condition  
 BAN[¥r] :The function which informs ALERT condition is ON  
 BAF[¥r] :The function which informs ALERT condition is OFF

<COMMAND BC>

Confirm Base, Space, Offset Configuration

Controller → Radio

BC @#[¥r]  
 @ : Bank No. (A–J)  
 # : Configuration No. (1,2,3)

Radio → Controller

BC @# %%%%%%%%% \$\$\$\$ XXX[¥r]  
 @ : Bank No. (A–J)  
 # : Configuration No. (1,2,3)  
 %%%%%%%%%: Base frequency  
 \$\$\$\$ : Space frequency  
 (multiple of 5.0kHz : 0050,0100,0150,,,,, 1000 )  
 (multipoe of 7.5kHz : 0075,0150,0225,,,,,0975 )  
 (multiple of 12.5kHz: 0125,0250,0375 ,,,,1000 )  
 XXX : Offset channel (380 – 759 )

Example)

BC C1 01380000 0500 0380[¥r]  
 Bank No. : 3  
 Configuration No : 1  
 Base Frequency : 138.0000MHz  
 Space frequency : 50kHz  
 Offset channel : 380

---

---

<COMMAND BL> Not Support  
Confirm Battery Level.

---

---

Controller → Radio  
BL[¥r] :Confirm Battery Level

Radio → Controller  
BAT @@@[¥r] @@@ :Battery voltage

Battery voltage ranges from a minimum value of "000" to a maximum value of "255".

< Formula >  
Battery Level[v] = (3.2[v] \* @@@ )/255

---

---

<COMMAND BP> Not supported  
Confirm/Set BEEP output enable or disable .

---

---

Controller → Radio  
① BP[¥r] :Confirm BEEP output enable or disable  
② BPN[¥r] :Set BEEP output to enable  
BPF[¥r] :Set BEEP output to disable

Radio → Controller  
① BPN[¥r] :BEEP is enable  
BPF[¥r] :BEEP is disable  
② OK[¥r] :Command OK

---

---

<COMMAND BT>  
Confirm/Set S-BIT function ON/OFF .

---

---

Controller → Radio  
① BT[¥r] :Confirm S-BIT function ON/OFF  
② BTN[¥r] :S-BIT ON  
BTF[¥r] :S-BIT OFF

Radio → Controller  
① BTN[¥r] :S-BIT ON  
BTF[¥r] :S-BIT OFF  
② OK[¥r]

Note:

If you ass the Bank No. (A-J) at the end, you can select optional bank.  
Ex) "BT A" or "BTN A"

This command instructs the unit to turn or confirm S-BIT function ON/OFF.

<COMMAND BM> Not Support

Confirm/Set Battery low condition Monitor function ON/OFF .

Controller → Radio

- ① BM[¥r] :Confirm Battery Low condition Monitor function ON/OFF
- ② BMN[¥r] :Set Battery Low condition Monitor function ON
- BMF[¥r] :Set Battery Low condition Monitor function OFF

Radio → Controller

- ① BMN[¥r] :Battery Low condition Monitor function ON
- BMF[¥r] :Battery Low condition Monitor function OFF
- ② OK[¥r] :Command OK
- ③ If the scanner detect Battery low, then the following will be sent.  
BATT LO[¥r]
- ④ If the scanner recovery Battery level, then the following will be sent.  
BATT OK[¥r]

<COMMAND BS> Not Support

Confirm/Set Battery Save function ON/OFF .

Controller → Radio

- ① BS[¥r] :Confirm Battery Save function ON/OFF
- ② BSN[¥r] :Set Battery Save function ON
- BSF[¥r] :Set Battery Save function OFF

Radio → Controller

- ① BSN[¥r] :Battery Save function ON
- BSF[¥r] :Battery Save function OFF
- ② OK[¥r] :Command OK

<COMMAND CB>

Confirm/Select Chain SEARCH RANGES.

Controller → Radio

- ① CB[¥r] :Confirm SEARCH RANGES
- ② CB @%O...[¥r] :Select SEARCH RANGES
- @, %, O, ... :bank name

<Example>

CB ACEGI[¥r]

Select "BANK A, C, E, G, I".

Radio → Controller

- ①、② CB @%O...[¥r] @, %, O, ... :bank name

<Example>

CB ACEGI[¥r] Selected SEARCH RANGEs are "BANK A, C, E, G, I".

This command instructs the unit to make designated SEARCH RANGEs be selected.  
If your select bank is not any frequency programmed, the bank will be ignored.

=====

<COMMAND CC>

Confirm CTCSS/DCS decode condition

=====

Controller → Radio

- ① CC[¥r] : Confirm CTCSS/DCS decode condition

Radio → Controller

- ① CCY[¥r] : Decode OK / CCN[¥r] : decode NG

=====

<COMMAND CD>

Inform when CTCSS/DCS is decoded

=====

Controller → Radio

- ① CD[¥r] : Confirm CD command active or not  
② CDN[¥r] : CD ON / CDF[¥r] : CD OFF

Radio → Controller

- ① CDN[¥r] or CDF[¥r]  
② OK[¥r]

While the function is ON, if CTCSS/DCS is detected, the unit sends its  
CTCSS/DCS No. to the controller in the form of CD###[¥r].

###: CTCSS/DCS No. are listed in Table(following end of this chapter )

=====

<COMMAND CS>

Confirm/set CTCSS/DCS

=====

Controller → Radio

- ① CS[¥r] : Confirm CTCSS/DCS No.  
② CS###[¥r] : Set CTCSS/DCS No.

Example)

- CS001[¥r] : Set 67.0Hz ctcss tone  
CS000[¥r] : Clear CTCSS/DCS

Radio → Controller

- ① CS###[¥r] : ###:CTCSS/DCS No.  
CS###L[¥r] : ###:tone lockout CTCSS/DCS No.  
② OK[¥r]

<COMMAND CT>

Confirm/set CTCSS/DCS function ON or OFF

Controller → Radio

- ① CT[¥r] :Confirm CTCSS/DCS function ON or OFF
- ② CTN[¥r] :CTCSS/DCS ON CTF[¥r] CTCSS/DCS OFF
- CTS[¥r] :CTCSS/DCS SEARCH ON

Radio → Controller

- ①CTN[¥r] :CTCSS/DCS ON CTF[¥r] CTCSS/DCS OFF
- CTS[¥r] :CTCSS/DCS SEARCH ON
- ②OK[¥r]

<COMMAND DL>

Confirm/Set DELAY function ON/OFF.

Controller → Radio

- ① DL[¥r] :Confirm DELAY function ON/OFF
- ② DLN[¥r] :2seconds delay ON
- DLF[¥r] :Delay OFF

Radio → Controller

- ① DL +2[¥r] :Delay ON
- DLF[¥r] :Delay OFF
- ② OK[¥r]

This command instructs the unit to turn or confirm DELAY function ON/OFF.

<COMMAND DM> Not supported

Confirm/Set Apco25 Digital voice Monitor function ON/OFF.

Controller → Radio

- ① DM[¥r] :Confirm Digital voice Monitor function ON/OFF
- ② DMN[¥r] :Set Digital voice Monitor function ON
- DMF[¥r] :Set Digital voice Monitor function OFF

Radio → Controller

- ① DMN[¥r] :Digital voice Monitor function ON
- DMF[¥r] :Digital voice Monitor function OFF
- ② OK[¥r] :Command OK
- ③ the scanner detect digital voice
- P25+[¥r] : start digital voice / P25-[¥r] :end digital voice
- ④ the scanner detect encrypted digital voice
- ENCRYPT ON[¥r]

---

<COMMAND DS>

Confirm/Set DATA SKIP function ON/OFF .

---

Controller → Radio

- ① DS[¥r] :Confirm DATA SKIP function ON/OFF
- ② DSN[¥r] :Data skip ON
- DSF[¥r] :Data skip OFF

Radio → Controller

- ① DSN[¥r] :Data skip ON
- DSF[¥r] :Data skip OFF
- ② OK[¥r]

This command instructs the unit to turn or confirm DATA SKIP function ON/OFF.

---

<COMMAND DV> Not supported

Confirm Digital voice reception status.

---

Controller → Radio

DV[¥r]

Radio → Controller

- DVN[¥r] :Detect Digital voice
- DVF[¥r] :Undetect Digital voice.

This command instructs the unit to send whether the digital voice is detected or not.

---

<COMMAND EA> Not supported

Confirm/set EDACS Emergency Alert function ON/OFF

---

Controller → Radio

- ① EA @[¥r] :Confirm Emergency Alert function ON/OFF
- ② EAN @[¥r] :Emergency Alert function ON
- EAF @[¥r] :Emergency Alert function OFF
- @:Bank No. (A-J)

Radio → Controller

- ① EAN @[¥r] :Emergency Alert function ON
- EAF @[¥r] :Emergency Alert function OFF
- @:Bank No. (A-J)
- ② OK[¥r]



<COMMAND EL>

Confirm/Set Enter Lock feature ON/OFF .

Controller → Radio

- ① EL[¥r] :Confirm ENTER LOCK ON/OFF
- ② ELN[¥r] :Set ENTER LOCK to ON
- ELF[¥r] :Set ENTER LOCK to OFF

Radio → Controller

- ① ELN[¥r] :ENTER LOCK is ON
- ELF[¥r] :ENTER LOCK is OFF
- ② OK[¥r] :Command OK

<COMMAND FB>

Confirm/Program fleet block on scanner.

Controller → Radio

- ① FB & #[¥r] :Confirm Fleet Block size.  
 & :A-J Identifies the bank for this fleet block.  
 # :0-7 Identifies the Fleet map Block No.
- ② FB & # %%[¥r] :Program Fleet Block No  
 & :A-J Identifies the bank for this Fleet Block.  
 # :0-7 Identifies the Fleet map Block No.  
 %% :00-14 Block size indicator.

Radio → Controller

- ① FB & # %%[¥r] :Programmed fleet Block size.  
 & :A-J Identifies the bank for this fleet block.  
 # :0-7 Identifies the Fleet map block No.  
 %% :00-14 Block size indicator.
- ② OK[¥r]

<COMMAND FI>

Confirm/Set Frequency Identification function ON/OFF .

Controller → Radio

- ① FI[¥r] :Confirm Frequency Identification function ON/OFF
- ② FIN[¥r] :Frequency Identification ON
- FIF[¥r] :Frequency Identification OFF

Radio → Controller

- ① FIN[¥r] :ON
- FIF[¥r] :OFF
- ② OK[¥r]

This command instructs the unit to turn or confirm Frequency Identification function ON/OFF.

<COMMAND FP>

Confirm/ Program FIPS code / Enable All FIPS code mode

Controller → Radio

- ① FP[¥r] :Confirm FIPS code disable or enable
- ② FP \$\$ #####[¥r] :Program FIPS code  
FP \$\$ 0[¥r] :Clear FIPS code  
    \$\$ :Fips code List No. (01-15)  
    ##### :Fips code No. (6digit)
- ③ FP \$\$[¥r] :Confirm FIPS code of the optional List No.  
    \$\$ :Fips code List No. (01-15)
- ④ FPN[¥r] :Enable All FIPS code mode  
    FPF[¥r] :Disable All FIPS code mode

Radio → Controller

- ① FPN[¥r] :Enable All FIPS code mode  
    FPF[¥r] :Disable All FIPS code mode
- ② OK[¥r] :Command OK
- ③ FIPS \$\$ #####[¥r] :Informs Fips code No.  
    \$\$ :Fips code List No. (01-15)  
    ##### :Fips code No. (6digit) or "-----":not programmed
- ④OK[¥r] :Command OK

<COMMAND IC>

Confirm/Move/Program ID Memory No.

Controller → Radio

- ① Confirm  
    IC[¥r]
- ② Move ID memory  
    IC @[¥r]      @ :ID Scan list (A-J)  
                  % :ID Location (1-9, 0)  
                  "0" is used to indicate "ID Location 10".

<Example>

IC A0[¥r]  
Move ID Memory No. to "ID Scan List A" and "ID Location 10".

- ③ Program Talk Group ID

//// MOTOROLA TYPE1 ////

IC @[¥r] &##-\$\$[¥r] or IC @[¥r] &###-\$[¥r]  
    @[¥r] : ID Memory No.  
    @ :ID Scan List (A-J)   % :ID Location (1-9, 0)  
    &##-\$\$ : Type1 ID  
            & :Block No. (0-9)  
            ## or ### :Fleet No.  
            \$\$ :Sub fleet No.

<Example>

IC A0 001-05[¥r]      ID in ID memory "A10" is

"BLOCK=0, FLEET=1, SUBFLEET=5".

//// MOTOROLA TYPE 2 ////

IC @% #####[¥r]  
 @% : ID Memory No.  
 @ : ID Scan List (A-J) % : ID Location (1-9,0)  
 ##### : Type2 ID  
 <Example>  
 IC A0 001234[¥r] ID in ID memory "A10" is "1234".

//// LTR ////

IC @% %\$\$\$#[¥r]  
 @% : ID Memory No.  
 @ : ID Scan List (A-J) % : ID Location (1-9,0)  
 %\$\$\$# : LTR Talk Group ID  
 % : Area code (0,1)  
 \$\$ : Home Repeater No. (01-20)  
 ### : ID (000-254)  
 <Example>  
 IC A0 001064[¥r]  
 ID in ID memory "A10" is "Area code:0 Home Repeater No.:01 ID:64"

//// EDACS ////

IC @% &&-##\$[¥r]  
 @% : ID Memory No.  
 @ : ID Scan List (A-J) % : ID Location (1-9,0)  
 &&-##\$ : Edacs Talk Group ID  
 && : Agency No. ## : Fleet No. \$ : SUBFLEET No.  
 <Example>  
 IC A0 01-025[¥r] AFS format  
 IC A0 000149[¥r] DECIMAL format  
 ID in ID memory "A10" is "AGENCY=01, FLEET=02, SUBFLEET=5"

>> PROGRAM EDACS PARTIAL ID <<

IC @% &&-[¥r] or IC @% &&-##[¥r]  
 @% : ID Memory No.  
 @ : ID Scan List (A-J) % : ID Location (1-9,0)  
 &&- : Edacs Partial Talk Group ID (All Agency)  
 &&-## : Edacs Partial Talk Group ID (All Agency-Fleet)  
 && : Agency No. ## : Fleet No.  
 <Example>  
 IC A0 01-[¥r]  
 IC A0 01-02[¥r]

Radio → Controller

①, ②

//// Not Programmed ID ////

IC @% -----[¥r]  
 @% : ID Memory No.

@ : ID Scan List (A-J) % : ID Location (1-9,0)

//// MOTOROLA TYPE1 ////

IC @% &##-\$\$[¥r] or IC @% &###-[¥r]

@% : ID Memory No.

@ : ID Scan List (A-J) % : ID Location (1-9,0)

&##-\$\$ : Type1 ID

& : Block No. (0-7)

## or ### : Fleet No.

\$\$ : Sub fleet No.

<Example>

IC A0 001-05[¥r] ID in ID memory "A10" is  
"BLOCK=0, FLEET=1, SUBFLEET=5".

//// MOTOROLA TYPE 2 ////

IC @% ##### [¥r]

@% : ID Memory No.

@ : ID Scan List (A-J) % : ID Location (1-9,0)

##### : Type2 ID

<Example>

IC A0 001234[¥r] ID in ID memory "A10" is "1234".

//// LTR ////

IC @% %\$\$\$## [¥r]

@% : ID Memory No.

@ : ID Scan List (A-J) % : ID Location (1-9,0)

%\$\$\$## : LTR Talk Group ID

% : Area code (0,1)

\$\$ : Home Repeater No. (01-20)

### : ID (000-254)

<Example>

IC A0 001064[¥r]  
ID in ID memory "A10" is "Area code:0 Home Repeater No.:01 ID:64"

//// EDACS ////

IC @% &&-##\$ [¥r]

@% : ID Memory No.

@ : ID Scan List (A-J) % : ID Location (1-9,0)

&&-##\$: Edacs Talk Group ID

&& : Agency No. ## : Fleet No. \$ : SUBFLEET No.

<Example>

IC A0 01-025[¥r] AFS format  
IC A0 000149[¥r] DECIMAL format  
ID in ID memory "A10" is "AGENCY=01, FLEET=02, SUBFLEET=5"

>> EDACS PARTIAL ID <<

IC @% &&----[¥r] or IC @% &&-##-[¥r]

@% : ID Memory No.

@ : ID Scan List (A-J) % : ID Location (1-9,0)

&&----: Edacs Partial Talk Group ID(All Agency)

&&-##-: Edacs Partial Talk Group ID(All Agency-Fleet)

&& :Agency No.      ## :Fleet No.

<Example>

IC A0 01----[¥r]

IC A0 01-02-[¥r]

③ OK[¥r]

<COMMAND ID>

ON/OFF function which informs when ID reception starts or ends.

Controller → Radio

- ① ID[¥r] : confirm "ID" command active
- ② IDN[¥r] : "ID" command ON
- IDF[¥r] : "ID" command OFF

Radio → Controller

- ① IDN[¥r] : "ID" command ON
- IDF[¥r] : "ID" command OFF
- ② OK[¥r]

While the function is ON, the reception ID and tuned frequency are returned by the following format when a radio receives ID and when the reception of ID is finished.

(1) ID Reception Starts

//// MOTOROLA TYPE1 ////

ID S &##-\$\$ %%%%%%%%%[¥r] or ID S &###-\$ %%%%%%%%%[¥r]

&##-\$\$ &###-\$ :Motorola Type1 ID

     & :Block No.    ## / ### :Fleet No.

     \$\$ / \$:Subfleet No.

%%%%%%%%% :Voice channel Frequency

<Example>

ID S 001-03 08510125[¥r]

ID reception starts on Block=0、Fleet=1, Subfleet=3

Voice channel Frequency: 851.0125MHz

//// MOTOROLA TYPE 2 ////

ID S @@@@@ %%%%%%%%%[¥r]

@@@@@ :Talk group ID

%%%%%%%%% :Voice channel Frequency

<Example>

ID S 001234 08510125[¥r]

ID reception starts on "ID=1234".

Voice Channel Frequency:851.0125MHz

//// LTR ////

ID S %\$#### %%%%%%%%%[¥r]

%\$\$\$### : LTR Talk Group ID  
 % :Area code(0,1)  
 \$\$ :Home Repeater No. (01-20)  
 ### :ID(000-254)  
 %%%%%%%%% :Goto channel Frequency

<Example>

ID S 001064 08510250[¥r]

ID reception starts on "Area code:0 Home Repeater No.:01 ID:64".  
Goto Channel Frequency:851.0250MHz

//// EDACS ////

ID S &&-##\$ %%%%%%%%%[¥r]

&&-##\$ :EDACS Talk Group ID  
 && :Agency ## :Fleet No. \$ :SUBFLEET No.  
 %%%%%%%%% :Working channel Frequency

<Example>

ID S 01-025 08510125[¥r]      AFS format  
 ID S 000149 08510125[¥r]      DECIMAL format

>> EDACS PATCH CALL ID RECEPTION START <<

ID S &&-##\$ %%%%%%%%% PATCH ID @@-¥¥# @@-¥¥# @@-¥¥#[¥r]

&&-##\$ :EDACS Patch ID  
 && :Agency ## :Fleet No. \$ :SUBFLEET No.  
 %%%%%%%%% :Working channel Frequency  
 @@-¥¥# :Patch comprising talk groups ID  
 @@ :Agency ¥¥ :Fleet No. # :SUBFLEET No.

(2) ID reception ends

//// MOTOROLA TYPE1 ////

ID E &##-\$ %%%%%%%%%[¥r] or ID E &###-\$ %%%%%%%%%[¥r]

&##-\$ &###-\$ :Motorola Type1 ID  
 & :Block No. ## / ### :Fleet No.  
 \$\$ / \$ :Subfleet No.  
 %%%%%%%%% :Control channel Frequency

<Example>

ID E 001-03 08510125[¥r]      ID reception ends on Block=0,  
    Fleet=1, Subfleet=3  
    Control channel Frequency:851.0125MHz

//// MOTOROLA TYPE2 ////

ID E @@@@ %%%%%%%%%[¥r]

@@@@ :Talk group ID

%%%%%%%% :Control channel Frequency

<Example>

ID E 001234 08510125[¥r] ID reception ends on "ID=1234".  
Control channel Frequency:851.0125MHz

//// LTR ///

ID E %\$\$\$### %%%%%%%%%[¥r]  
 %\$\$\$### : LTR Talk Group ID  
 % :Area code(0,1)  
 \$\$ :Home Repeater No. (01-20)  
 ### :ID(000-254)  
 %%%%%%%%% :Home channel Frequency

<Example>

ID E 001064 08510250[¥r]  
 ID reception ends on "Area code:0 Home Repeater No.:01 ID:64".  
 Home Channel Frequency:851.0250MHz

//// EDACS ///

ID E &&-##\$ %%%%%%%%%[¥r]  
 &&-##\$ :EDACS Talk Group ID  
 &&:Agency ##:Fleet No. \$: SUBFLEET No.  
 %%%%%%%%% :Control channel Frequency

<Example>

ID E 01-025 08510125[¥r] AFS format  
 ID E 000149 08510125[¥r] DECIMAL format

>> EDACS PATCH CALL ID RECEPTION END <<

ID E &&-##\$ %%%%%%%%%[¥r]  
 &&-##\$ :EDACS Patch ID  
 &&:Agency ##:Fleet No. \$: SUBFLEET No.  
 %%%%%%%%% :Control channel Frequency

This command instructs the unit to turn the function ON/OFF.  
 While the function is ON, the unit is monitoring the status of  
 the ID reception and informs when it starts or ends.

<COMMAND IL>

Read L/O ID memory.

Register an ID into L/O ID memory.

Delete an ID from L/O ID memory.

Controller → Radio

① Read

IL###[¥r]      ### : Lockout Memory No. (001 - 200)

② Register

//// MOTOROLA TYPE 1 ////

ILR &##-\$\$[¥r] / ILR &###-\$[¥r]

&##-&& / &###-\$ : Motorola Type1 ID  
& : Block No. ## / ### : Fleet No.  
\$\$ / \$ : Subfleet No.

<Example>

ILR 001-03[¥r]

//// MOTOROLA TYPE 2 ////

ILR @@@@[¥r]      @@@@ : MOTOROLA TYPE2

<Example>

ILR 024106[¥r]

//// LTR ////

ILR %\$\$\$[¥r]

%\$\$\$ : LTR Talk Group ID  
% : Area code (0, 1)  
\$\$ : Home Repeater No. (01-20)  
### : ID (000-254)

<Example>

ILR 001064[¥r]

//// EDACS ////

ILR &&-##[¥r]

&&-## : EDACS Emergency ID  
&&: Agency ##: Fleet No. \$: SUBFLEET No.

<Example>

ILR 01-011[¥r]

>> EDACS BLOCKOUT <<

ILR &&-[¥r]      ALL Agency lockout      &&: Agency No

ILR &&-##[¥r]      ALL Agency-Fleet lockout      ##: Fleet No.

<Example>

ILR 02-[¥r]

ILR 02-01[¥r]

③ Delete

//// MOTOROLA TYPE 1 ////



ILD &##-\$\$[¥r] / ILD &###-[¥r]

&##-&& / &###-\$\$\$ :Motorola Type1 ID  
 & :Block No. ## / ### :Fleet No.  
 \$\$ / \$ :Subfleet No.

<Example>

ILD 001-03[¥r]

//// MOTOROLA TYPE 2 ////

ILD @@@@@@[¥r] @@@@@@ :MOTOROLA TYPE2

<Example>

ILD 024106[¥r]

//// LTR ////

ILD %\$\$\$###[¥r]  
 %\$\$\$### : LTR Talk Group ID  
 % :Area code(0, 1)  
 \$\$ :Home Repeater No. (01-20)  
 ### :ID(000-254)

<Example>

ILD 001064[¥r]

//// EDACS ////

ILD &&-##\$[¥r]  
 &&-##\$ :EDACS Emergency ID  
 &&:Agency ##:Fleet No. \$: SUBFLEET No.

<Example>

ILD 01-011[¥r]

>> EDACS BLOCKOUT <<

ILD &&-[¥r] ALL Agency lockout &&: Agency No  
 ILD &&-##[¥r] ALL Agency-Fleet lockout ##: Fleet No.

<Example>

ILD 02-[¥r]  
 ILD 02-01[¥r]

Radio → Controller

① Read

///// NOT REGISTERED LOCKOUT ID MEMORY /////  
 IL -----[¥r]

//// MOTOROLA TYPE 1 ////

IL &##-\$\$[¥r] / IL &###-[¥r]

&##-&& / &###-\$\$\$ :Motorola Type1 ID  
 & :Block No. ## / ### :Fleet No.  
 \$\$ / \$ :Subfleet No.

<Example>

IL 001-03[¥r]

//// MOTOROLA TYPE 2 ////

IL @@@@[¥r] @@@@ :MOTOROLA TYPE2  
 <Example>  
 IL 024106[¥r]

//// LTR ////

IL %\$\$\$[¥r]  
 %\$\$\$ : LTR Talk Group ID  
 % :Area code(0,1)  
 \$\$ :Home Repeater No. (01-20)  
 ### :ID(000-254)  
 <Example>  
 IL 001064[¥r]

//// EDACS ////

IL &&-##[¥r]  
 &&-## :EDACS Emergency ID  
 &&:Agency ##:Fleet No. \$: SUBFLEET No.  
 <Example>  
 IL 01-011[¥r]

>> EDACS BLOCKOUT <<

IL &&----[¥r] ALL Agency lockout  
 ILD &&-##[¥r] ALL Agency-Fleet lockout  
 &&:Agency ##:Fleet No.

<Example>  
 IL 02-[¥r]  
 IL 02-01-[¥r]

## ② Register

If the ID is registered into L/O ID memory, the unit sends OK[¥r] to the controller.  
 If the ID is already in L/O ID memory, sends ON[¥r].  
 If L/O ID memory is full, sends FULL[¥r].

## ③ Delete

If the ID is deleted from L/O ID memory, the unit sends OK[¥r] to the controller. If the ID isn't in L/O ID memory, sends OFF[¥r].

---

<COMMAND IR> Not supported  
 Confirm/Set I-call ID Reception function

---

Controller → Radio

- ① IR @[¥r] :Confirm I-CALL ID Reception function  
 @:Bank No. (A-J)
- ② IRN @[¥r] :Set I-CALL ID Reception to ON mode
- IRF @[¥r] :Set I-CALL ID Reception to OFF mode
- IRY @[¥r] :Set I-CALL ID Reception to ONLY mode  
 @:Bank No. (A-J)

Radio → Controller

- ① IRN @[¥r] :I-CALL ID Reception is ON mode

IRF @[¥r] :I-CALL ID Reception is OFF mode  
 IRY @[¥r] :I-CALL ID Reception is ONLY mode  
 @:Bank No. (A-J)

②OK[¥r]

---

---

<COMMAND IS>

Confirm/Select ID scan lists.

---

---

Controller → Radio

① IS[¥r] :Confirm ID scan list name  
 ② IS @%O...[¥r] :Select ID scan list

@, %, O, ... :ID scan list No. (A-J)

<Example>

IS ACE[¥r] Select "LIST A, LIST C, LIST E".  
 (LIST B, LIST D are not selected)

Radio → Controller

①、②  
 IS @%O...[¥r] @, %, O, ... : ID scan list name

<Example>

IS ACE[¥r] Selected ID scan lists are "LIST A, C, E".

This command instructs the unit to make designated ID scan lists be selected.

---

---

<COMMAND KEY>

Work as if a key were pushed.

---

---

Controller → Radio

KEY○○[¥r]           ○○:KEY Emulate Code (see Following Table)

\* To indicate "Hold Press" of each key, add "H" to each command.

<Example>

KEY06H[¥r]

This command is used instead of hold press of [L/0] key.

KEY02 6[¥r]

This command is used instead of press of [6] key.

So this command is used instead of hold press of [6] key.

Radio → Controller

OK[¥r]

Key Emulate Code:

KEY00: [MANUAL]	KEY01: [SCAN]
KEY02: [0]–[9]	KEY03: [.]
KEY04: [E] (ENTER)	KEY05: [PRI]
KEY06: [L/0]	KEY07: [HOLD △]
KEY08: [LIMIT ▽]	KEY09: [SRC]
KEY10: [WX/ALERT]	KEY11: [DATA]
KEY12: [SEND/M-LOCK]	KEY13: [TRUNK]
KEY14: [FREQ/CHAN]	KEY15: [STEP]
KEY16: [MODE]	KEY17: [ATT/DIM]
KEY18: [LINE/RMT]	KEY19: [AUTO]
KEY20: [DELAY]	KEY21: [CTCSS/DCS]
KEY22: [LOCK]	KEY23: [A]–[J]
KEY24: [ROTARY CLOCKWISE]	
KEY25: [ROTARY COUNTERCLOCKWISE]	

<COMMAND LCD>

Confirm a character strings on LCD.

Controller → Radio	Radio → Controller (+:ON -:OFF *:FLASH)
LCD xx[¥r] : icon is ON/OFF/FLASH ?	xx +[¥r]    xx -[¥r]    xx *[¥r]
LCD SMT[¥r] :By using this command, a user can check the signal strength meter	ex) SMT +++--[¥r]
LCD BNK[¥r] :By using this command, a user can check the selected bank No.	ex) BNK ++++++--[¥r] ON:A, B, D, E, F, G, H   OFF:I, J   FLASH:C
LCD CHN[¥r] :By using this command, a user can check the No. of the channel or the character of the CH indication part	ex) CHN [300][   ][¥r] , CHN [ 1][   ][¥r]
LCD FRQ[¥r] :By using this command, a user can check the tuned frequency or the character of the FREQUENCY indication part	ex) FRQ [406.0000][   ][¥r]
LCD CTC[¥r] :By using this command, a user can check the CTCSS/DCS setting or the talk group ids	ex) CTC [123.0][   ][¥r]
LCD[¥r]            A user only sends this command to the scanner, and the scanner sends back all the above responses at once	

xx : Icon

01 "BANK"	21 "DCS"
02 "LIST"	22 "Hz"
03 "KHz"	23 "HOLD"
04 "N"	24 "LOCKOUT"
05 "FM"	25 "LINE"
06 "AM"	26 "DELAY"
07 "TRUNK"	27 "WX"
08 "SCAN"	28 "ALERT"
09 "PRIORITY"	29 "M-LOCK"
10 "AUTO"	30 "S" of s-meter
11 "SEARCH"	31 "." of frerq.
12 "DATA"	32 "." of CTCSS
13 "ATT"	33 "6." of 6.25KHz
14 "M"	34 "1" of 12.5KHz
15 "E"	35 "2" of 12.5KHz
16 "L"	36 "." of 12.5KHz
17 "P"	37 "5" of 12.5KHz
18 "RMT"	38 FREQ LED
19 "MHZ"	39 CHAN LED
20 "CTCSS"	40 LOCK LED

---

---

<COMMAND LL>

Confirm/Set lower edge frequency of CHAIN SEARCH.

---

---

Controller → Radio

- ① LL[¥r] : Confirm the lower edge frequency of the current SEARCH RANGE
- LL #[¥r] : Confirm the lower edge frequency of the selected SEARCH RANGE.  
#: SEARCH RANGE No. (A, B, ..., J)
  
- ② LL@@@@@@@@[¥r] : Set the lower edge frequency of the current SEARCH RANGE
- LL@@@@@@@@ #[¥r] : Set the lower edge frequency of the selected SEARCH RANGE

@@@@@@@@ : Lower edge frequency

The order of the digits is from 1 GHz digit  
to 100 Hz digit.

# : SEARCH RANGE No. (A, B, ..., J)

<Example>

LL08510125 A[¥r]

Set the lower edge frequency to "851.0125 MHz"  
for the SEARCH RANGE "A".

Radio → Controller

- ① ② LL@@@@@@@@ #[¥r]  
The current lower edge frequency is @@@@@@@@@\*100 Hz.  
#: SEARCH RANGE No (A, B, ..., J)

This command instructs the unit to set the lower edge frequency of chain  
search to @@@@@@@@@\*100 Hz or confirm frequency.

---

---

<COMMAND LM> Not supported

Confirm/Set LCD screen mask feature ON/OFF .

---

---

Controller → Radio

- ① LM[¥r] : Confirm LCD screen mask ON/OFF
- ② LMN[¥r] : Set LCD screen mask to ON
- LMF[¥r] : Set LCD screen mask to OFF

Radio → Controller

- ① LMN[¥r] : LCD screen mask is ON
- LMF[¥r] : LCD screen mask is OFF
- ② OK[¥r] : Command OK

---

---

<COMMAND L0>

Confirm/Set LOCKOUT function ON/OFF.

---

---

Controller → Radio

- ① L0[¥r] : Confirm LOCKOUT function ON/OFF
- ② LON[¥r] : Lockout ON
- LOF[¥r] : Lockout OFF

Radio → Controller

- ① LON[¥r] : Lockout ON
- LOF[¥r] : Lockout OFF
- ② OK[¥r]

This command instructs the unit to turn or confirm LOCKOUT function ON/OFF.

---

---



---

---

<COMMAND LT>

Confirm/Set Back Light HIGH/OFF/MEDIUM.

---

---

Controller → Radio

- ① LT[¥r] : Confirm Back Light HIGH/OFF/MEDIUM
- ② LTN[¥r] : Back Light HIGH
- LTF[¥r] : Back Light OFF
- LTD[¥r] : Back Light MEDIUM

Radio → Controller

- ① LTN[¥r] : Back Light HIGH
- LTF[¥r] : Back Light OFF
- LTD[¥r] : Back Light MEDIUM
- ② OK[¥r]

This command instructs the unit to turn or confirm Back Light HIGH/OFF/MEDIUM.

---

---



---

---

<COMMAND LU>

Confirm/Set upper edge frequency of CHAIN SEARCH.

---

---

Controller → Radio

- ① LU[¥r] : Confirm the upper edge frequency of the current SEARCH RANGE
- LU #[¥r] : Confirm the upper edge frequency of the selected SEARCH RANGE  
#: SEARCH RANGE No. (A, B, ... J)
- ② LU@@@@@@@@[¥r] : set the upper edge frequency of the current SEARCH RANGE
- LU@@@@@@@@ #[¥r] : set the upper edge frequency of the selected SEARCH RANGE

@@@@@@@@ : Upper edge frequency

The order of the digits is from 1 GHz digit  
to 100 Hz digit.

# :SEARCH RANGE No (A, B... J)

<Example>

LU09560000 A[¥r]

Set the upper edge frequency to "956.0000MHz"  
for the SEARCH RANGE "A".

Radio → Controller

① ② LU@@@@@@@@ #[¥r]

The current upper edge frequency is @@@@@@@\*100 Hz.

#:SEARCH RANGE No. (A, B,... J)

This command instructs the unit to set the upper edge frequency to @@@@@@@\*100 Hz or confirm frequency.

<COMMAND MA>

Confirm the channel No. of SCAN HOLD MODE or SCAN STOP MODE.

Move to the optional channel No. of SCAN HOLD MODE.

Controller → Radio

① Confirm

MA[¥r]

② Move to

MA@@@[¥r]          @@@ : channel No. (001 - 500)

<Example>

MA015[¥r]          Move to the channel No. "15".

Radio → Controller

①, ②

C@@@ F%%%%%%%% T# D# L# A# R# N\$\$\$ [¥r]

@@@ :Channel No.

%%%%%%%% :Frequency

The order of the frequency digits are from 1 GHz digit  
to 100 Hz digit.

# :N or F (ON/OFF)

ex) TN/TF :Trunking frequency / conventional frequency

DN/DF :Delay ON/OFF

LN/LF :Lockout ON/OFF

AN/AF :Attenuator ON/OFF

RN/RF :Auto record function ON/OFF

\$\$\$ :CTCSS/DCS TONE No. are listed in Table  
(following end of this chapter)

<Example>

C015 F04060125 TF DN LF AF N000[¥r]

The current channel No. is "15",  
and its conventional frequency is "406.0125 MHz".  
Delay function is ON, Lockout is OFF,  
Attenuation is OFF  
CTCSS is not programmed.



---

---

<COMMAND MD>

Confirm the Scanner mode.

---

---

Controller → Radio

MD[¥r]

Radio → Controller

MD@[¥r]    @@ :Current scanner mode No. (See following Table)

This command instructs the unit to confirm the current scanner mode .

>>>> Scanner Mode Number <<<<

- 00 :Scan mode
- 01 :SCAN HOLD MODE
- 02 :CHAIN Search mode
- 03 :CHAIN Search Hold mode
- 04 :WX Search mode
- 05 :WX Search Hold mode
- 06 :Transfer mode
- 07 :Auto Store mode
- 08 :Control Store mode (Not used )
- 09 :manual frequency mode
- 10 :ID search mode
- 11 :ID search hold mode
- 12 :ID scan mode
- 13 :ID SCAN HOLD MODE
- 14 :Edacs ID search mode
- 15 :Edacs ID search hold mode
- 16 :Edacs ID scan mode
- 17 :Edacs ID SCAN HOLD MODE
- 18 :LTR ID search mode
- 19 :LTR ID search hold mode
- 20 :LTR ID scan mode
- 21 :LTR ID SCAN HOLD MODE

---

---

<COMMAND MU>

Confirm/Set status of speaker muting.

---

---

Controller → Radio

- ① MU[¥r]                               :Confirm MUTE control mode.
- ② MU?[¥r]                             :Confirm ON/OFF condition.
- ③ MUN[¥r]                             :Set MUTE ON(by force)mode.
- MUF[¥r]                           :Set MUTE OFF(by force)mode.
- MUA[¥r]                           :Set AUTO MUTE control mode.

Radio → Controller

- ① MUN[¥r]                             :MUTE ON(by force)mode.
- MUF[¥r]                           :MUTE OFF(by force)mode.
- MUA[¥r]                           :AUTO MUTE control mode.

- ② MU ON[¥r] :MUTE ON condition.
- MU OFF[¥r] :MUTE OFF condition.
- ③ OK[¥r]

This command instructs the unit to set or confirm the status of speaker Muting.

<COMMAND PC>

Confirm/Set priority channel No. of a bank.

Controller → Radio

① Confirm

PC @[¥r] @ :Bank No. (A – J)

<Example>

PC A[¥r] Confirm the priority channel of "Bank A".

② Set

PC @%%[¥r] @ :Bank No. (A–J) %% :Channel No. (001 – 500)

<Example>

PC A014[¥r] Set the priority channel of "Bank A" to "14".

Radio → Controller

①, ②

PC @%%[¥r] @ :Bank No. (A – J) %% :Channel No. (001 – 500)

<Example>

PC A014[¥r] The priority channel of "Bank A" is "14".

<COMMAND PI>

Confirm/Set Priority Talk ID Memory Location

Controller → Radio

① Confirm Priority ID location

PI @[¥r] @ : ID list No. (A–J)

<Example>

Confirm priority Location of List "A" in current Trunk Bank

PI A[¥r]

Set Priority ID location

②PI @#[¥r] @ : ID List No. (A–J) # : ID location No. (1–9, 0)

<Example>

PI A1[¥r] set priority to List "A", Location "1"

Radio → Controller

① PI @# %%%[¥r] @ : ID List No (A–J) # : ID location No. (1–9, 0)  
%%%%%%%% : Talk Group ID

<Example>

PI A1 001234[¥r]

Priority of List "A" is location "1" ID:001234

② OK[¥r]

<COMMAND PM>

Read / Program a channel frequency

Controller → Radio

① Read

PM@@@[¥r]            @@@ : Channel No. (001 – 500)

<Example>

PM014[¥r]            Read the frequency of "14CH".

② Program

PM@@@ %%%%%%%%%[¥r]    or PM@@@T%%%%%%%%[¥r]

     @@@ :Channel No. (001 – 500)    T: Trunking ch flag

     %%%%%%%%% :Frequency

The order of the frequency digits are from 1 GHz digit to 100 Hz digit.

PM command initialize delay mode, attenuator and auto record, because DL, AT and AR commands is commanded after commanding PM command.

<Example 1> program 406.0125MHz to Channel No.14

PM014 04060125[¥r] Set the frequency of "14CH" to "406.0125 MHz".

<Example 2> program 29.0050MHz to Channel No.14

MA014[¥r]            Move to channel No.14

ST 5K[¥r]            Change program step

PM014 00290050[¥r] Set the frequency of "14CH" to "29.0050 MHz".

Radio → Controller

①, ②

C@@@ F%%%%%%%% T# D# L# A# R# N\$\$\$ [¥r]

     @@@            :Channel No. (001 – 500)

     %%%%%%%%%    :Frequency

     # :N or F (ON/OFF)

     ex) TN/TF : trunking / conventional frequency

     DN/DF : Delay ON/OFF

     LN/LF : Lockout ON/OFF

     AN/AF : Attenuator ON/OFF

     RN/RF : Auto record function ON/OFF

     \$\$\$ :CTCSS/DCS TONE No. are listed in Table

     (following end of this chapter)

<Example>

C015 F04060125 TF DN LF AF RF N000[¥r]

     CH No        :CH15    FREQUENCY : "406.0125 MHz" (conventional)

     DELAY        :ON        LOCKOUT    :OFF

     ATTENUATOR :OFF        CTCSS       :00.0 Hz.

---

---

<COMMAND PR>

Confirm/Set PRIORITY function ON/OFF .

---

---

Controller → Radio

- ① PR[¥r] :Confirm priority function ON/OFF
- ② PRN[¥r] :Set priority function
- PRF[¥r] :Priority function OFF
- PR+[¥r] :Set Priority Plus function

Radio → Controller

- ① PRN[¥r] :Priority is ON
- PRF[¥r] :Priority is OFF
- PR+[¥r] :Priority Plus is ON
- ② OK[¥r]

This command instructs the unit to turn or confirm PRIORITY(and Plus) function ON/OFF.

---

---

<COMMAND QU>

ON/OFF function which informs when squelch condition changes.

---

---

Controller → Radio

- ① QU[¥r] :Confirm QU command active
- ② QUN[¥r] :QU command ON
- QUF[¥r] :QU command OFF

Radio → Controller

- ① QUN[¥r] :QU command is ON
- QUF[¥r] :QU command is OFF
- ② OK[¥r]

While the function is ON, if the squelch condition becomes  
 ·Close to open, unit sends +[¥r] to the controller.  
 ·Open to close, unit sends -[¥r] to the controller.

This command instructs the unit to turn the function ON/OFF.  
 While the function is ON, the unit is monitoring the squelch condition  
 and informs when it changes.

---

---

<COMMAND RF>

Confirm/Tune the commanded frequency.

---

---

Controller → Radio

- ① RF@@@@@@@@[¥r] or RF@@@@@@@@?[¥r]  
 RF@@@@@@@@ \$\$\$[¥r] or RF@@@@@@@@? \$\$\$[¥r]  
 @@@@@@@@ : Tuned frequency  
 \$\$\$ (optional) : frequency round step

5K / 6.25K / 12.5K / 25K / AUTO

The order of the digits are from 1 GHz digit to 100 Hz digit.

<Example>

RF04060125[¥r] tuned receiver to 406.0125 MHz

RF00290050[¥r] tuned receiver to 29.0100MHz(rounded with default step)

RF00290050 5K[¥r] tuned receiver to 29.0050MHz(rounded with 5K step)

if you wish to confirm the tuned frequency for this command response,  
a "?" code add after the commanded frequency.

② RF[¥r] :confirm tuned frequency

Radio → Controller

① OK[¥r] or RF@@@@@@@@[¥r]

② RF@@@@@@@@[¥r]

@@@@@@@@ : Tuned frequency

This command can be instantly tuned to a commanded frequency .

=====

<COMMAND RG>

Confirm /Set EDACS ID Range mode.

=====

Controller → Radio

① Confirm ID Range mode

RG[¥r]

② Set ID Range mode

RG @@-[¥r]            @@ : EDACS id (Agency:00-15)

RG @@-##[¥r]        @@ : EDACS id (Agency:00-15)

                    ## : EDACS id (Fleet:00-15)

<Example>

RG 01-[¥r] or RG 01-01[¥r]

③ Clear ID Range mode

RGF [¥r]

Radio → Controller

① RGN[¥r]            :Range mode ON

RGF [¥r]            :Range mode OFF

② OK[¥r]

③ OK[¥r]

=====

<COMMAND RI>

ON/OFF function which informs when priority receiving condition changes.

=====

Controller → Radio

① RI[¥r]            :Confirm "RI" command active

② RIN[¥r]           :Activate "RI" command

RIF[¥r]            :Inactivate "RI" command

Radio → Controller

- ① RIN[¥r] : "RI" command is ACTIVE
- RIF[¥r] : "RI" command is INACTIVE
- ② OK[¥r]

While the function is ON,

- if the unit stops on the priority channel by priority receiving, sends PST[¥r] to the controller.
- if the unit returns from the priority channel, sends PRT[¥r] to the controller.

This command instructs the unit to turn the function ON/OFF.

While the function is ON, the unit is monitoring the priority receiving condition and informs when it changes.

=====

<COMMAND RM> WFM is not supported.  
Confirm/Set Receiver modulation .

=====

Controller → Radio

- ① RM[¥r] :Confirm Receiver modulation
  - ② RM @@@[¥r] :Set Receiver modulation
- @@@ : Receiver modulation
- ex)RM AM[¥r] AM RM NFM[¥r] Narrow band FM
- RM WFM[¥r] Wide band FM RM FM[¥r] FM
- RM AUTO[¥r] Set Default modulation

Radio → Controller

- ①RM @@@[¥r] @@@:Current Receiver modulation
- If it is automatically, then the scanner adds the word of "A" .
- ex)RM AM[¥r] AM RM NFM[¥r] Narrow band FM
- RM WFM[¥r] Wide band FM RM FM[¥r] FM
- RM --- A[¥r] Not programmed frequency(OMHz)
- ② OK[¥r]
- This command instructs the unit to confirm receiver modulation.

=====

<COMMAND SB>  
Confirm/Select scan banks.

=====

Controller → Radio

- ①SB[¥r] :Confirm scan banks
  - ② SB @%O...[¥r] :Select scan banks
- @, %, O, ... :bank name

<Example>

SB ACEGI[¥r]

Select "BANK A, C, E, G, I".

Radio → Controller

- ①、② SB @%O...[¥r] @, %, O, ... :bank name

<Example>

SB ACEGI[¥r] Selected scan banks are "BANK A, C, E, G, I".

This command instructs the unit to make designated scan banks be selected.

=====

<COMMAND SG>

Read the signal strength

=====

Controller → Radio

① SG[¥r] :Confirm signal strength

Radio → Controller

① S\$\$\$ F##### [¥r] \$\$\$:A/D voltage value of Strength meter (0-255)  
#####:tuned frequency

<Example>

S147 F08510125[¥r]

Note)

Voltage = (MicomVcc \* \$\$\$)/255 ex) Vcc:3.2V \$\$\$=147 (3.2 \* 147)/255 =1.84V

=====

<COMMAND SI>

Confirm Scanner Information

=====

Controller → Radio

SI[¥r]

Radio → Controller

SI @@@@@@@@, %%%%%%%%%%, &&&[¥r]  
@@@@@@@@ :Alphanumeric model Name/No.  
%%%%%%%%% :Alphanumeric ESN No. (Not used)  
&&& :Remote Command Version.

<Example>

SI BC895Replace, 0000000000, 106

This is the information string sent by the scanner to PC

=====

<COMMAND SQ>

Confirm squelch condition.

=====

Controller → Radio

SQ[¥r]

Radio → Controller

+ [¥r] :Now squelch is OPEN.  
- [¥r] :Now squelch is CLOSE.

This command instructs the unit to send whether the squelch is OPEN or CLOSE.

---

<COMMAND SS>

Read a frequency in search skip memory.

Register a frequency into search skip memory.

---

Controller → Radio

① Read

SS###    ### : Search Skip Memory No. (001–200)

② Register

SS@@@@@@@@[¥r]                @@@@@@@@@ : Frequency

The order of the digits are from 1 GHz digit to 100 Hz digit.

<Example>

SS04060125[¥r]    Register 406.0125 MHz into search skip memory.

---

Radio → Controller

① Read

SS@@@@@@@@[¥r]                @@@@@@@@@ : Frequency

<Example>

SS04060125[¥r]

Frequencies in search skip memory are “406.0125 MHz”

② Register

SS@@@@@@@@[¥r]                @@@@@@@@@ : Frequency

<Example>

SS04060125[¥r]    406.0125 MHz is registered.

---

※ If the frequency is already in search skip memory, the unit sends ON[¥r] to the controller. If the unit receives the frequency in search hold mode, the unit deletes the frequency from search skip memory.

This command instructs the unit

①to send all the frequencies in search skip memory.

②to register a frequency into search skip memory.

---

<COMMAND ST>

Confirm / set frequency step

---

Controller → Radio

① ST[¥r]                :Confirm frequency step

② ST ###[¥r]           :Set frequency step

###: 5K / 6.25K / 12.5K / 25K / AUTO

Radio → Controller

① ST ###[¥r]           :Inform frequency step

###: 5K / 6.25K / 12.5K / 25K /

If it is automatically, then the scanner adds the word of “ A” .

② OK[¥r]

---

<COMMAND TA> Not supported

Confirm / Program alpha tag name

---



Controller → Radio

① Confirm alpha tag name

TA C ###[¥r] :Confirm channel tag name  
                   ### :Channel No. (001 - 500)  
 TA B \$[¥r] :Confirm bank tag name  
                   \$ :Bank No. (A - J)  
 TA L \$ &[¥r] :Confirm ID LIST tag name  
                   \$ :Bank No. (A - J) &:list No. (A - J)  
 TA I \$ %[¥r] :Confirm TALK ID tag name  
                   \$ :Bank No. (A - J) &:list No. (A - J)  
                   % :Location No. (0 - 9)  
 TA S \$[¥r] :Confirm SEARCH RANGE tag name  
                   \$ : SEARCH RANGE No. (A - J)

② Program alpha tag name

The ASCII CODE of 0x20 to 0x7F can be used for a alpha name.

TA C ### @@@@@@@@@@@@@@@@@@[¥r] :Program channel tag name  
                   ### :Channel No. (001 - 500)  
                   @@@@@@@@@@@@@@@@ :Alpha tag name (Max. 16igit)  
 TA B \$ @@@@@@@@@@@@@@@@@@[¥r] :Program bank tag name  
                   \$ :Bank No. (A - J)  
                   @@@@@@@@@@@@@@@@ :Alpha tag name (Max. 16igit)  
  
 TA L \$ & @@@@@@@@@@@@@@@@@@[¥r] :Program ID LIST tag name  
                   \$ :Bank No. (A - J) &:list No. (A - J)  
                   @@@@@@@@@@@@@@@@ :Alpha tag name (Max. 16igit)  
  
 TA I \$ % @@@@@@@@@@@@@@@@@@[¥r] :Program TALK ID tag name  
                   \$ :Bank No. (A - J) &:List No. (A - J)  
                   % :Location No. (0 - 9)  
                   @@@@@@@@@@@@@@@@ :Alpha tag name (Max. 16igit)  
  
 TA S \$ @@@@@@@@@@@@@@@@@@[¥r] : Program SEARCH RANGE tag name  
                   \$ :SEARCH RANGE No. (A - J)  
                   @@@@@@@@@@@@@@@@ :Alpha tag name (Max. 16igit)

③ Clear alpha tag name

TA C ### [¥r] :Clear channel tag name  
                   ### :Channel No. (001 - 500)  
 TA B \$ [¥r] :Program bank tag name  
                   \$ :Bank No. (A - J)  
 TA L \$ & [¥r] :Clear ID LIST tag name  
                   \$ :Bank No. (A - J) &:list No. (A - J)  
 TA I \$ %[¥r] :Clear TALK ID tag name  
                   \$ :Bank No. (A - J) &:List No. (A - J)  
                   % :Location No. (0 - 9)  
 TA S \$ [¥r] : Clear SEARCH RANGE tag name  
                   \$ :SEARCH RANGE No. (A - J)

Radio → Controller

① Informs alpha tag name

TA C ### @@@@@@@@@@@@@@@@@@[¥r] :Program channel tag name  
                   ### :Channel No. (001 - 500)  
                   @@@@@@@@@@@@@@@@ :Alpha tag name (Max. 16igit)

TA B \$ @@@@ :Program bank tag name  
 \$ :Bank No. (A - J)  
 @@@@ :Alpha tag name (Max. 16igit)

TA L \$ & @@@@ :Program ID LIST tag name  
 \$ :Bank No. (A - J) & :List No. (A - J)  
 @@@@ :Alpha tag name (Max. 16igit)

TA I \$ &% @@@@ :Program TALK ID tag name  
 \$ :Bank No. (A - J) &:List No. (A - J)  
 % :Location No. (0 - 9)  
 @@@@ :Alpha tag name (Max. 16igit)

TA S \$ @@@@ :Program SEARCH RANGE tag name  
 \$ :SEARCH RANGE No. (A - J)  
 @@@@ :Alpha tag name (Max. 16igit)

②③OK[¥r]

<COMMAND TB>

Confirm/Set Trunking bank ON/OFF

Controller → Radio

①TB[¥r] Confirm Active trunk Bank ON or OFF  
 ②TB #[¥r] Confirm optional trunk bank ON or OFF  
 # : Bank No. (A-J)

③TBN #[¥r] Set Trunking Bank to ON  
 # : Bank No. (A-J)

TBF #[¥r] Set Trunking Bank to OFF  
 # : Bank No. (A-J)

Radio → Controller

①, ②  
 TB # @@@@ %[¥r]  
 # :Active/Optional Trunking Bank  
 @@@@ :Trunking Type  
 E2-800 (Motorola Type2 800MHz)  
 E2-900 (Motorola Type2 900MHz)  
 E2-VHI (Motorola Type2 VHI)  
 E2-UHF (Motorola Type2 UHF)  
 TYPE1 (Motorola Type1)  
 EDCS WIDE (WIDE BAND EDACS)  
 EDCS NARROW (NARROW BAND EDACS)  
 EDCS SCT  
 LT (LTR)

% : Trunking bank ON or OFF  
 N: Trunking ON  
 F: Trunking OFF

<Example> TB A E2-800 N[¥r]

Active Bank: "A" Trunk Type: MOTOROLA TYPE2 800MHz TRUNK ON

③ OK[¥r]

---

---

<COMMAND TC>

Confirm/Set Trunking with "CONTROL CH ONLY MODE" ON/OFF.

---

---

Controller → Radio

- ① Confirm "CONTROL CH ONLY MODE" is ON or OFF  
TC @[¥r]                      @ :Bank No.
- ② Set "CONTROL CH ONLY MODE" to ON or OFF  
TCN @ ##[¥r]                :Set "CONTROL CH ONLY MODE" to ON  
                                 @ :Bank No.  
                                 ## :CH assignment plan(optional) P1,P2,P3,P4  
                                 P1: Plan1 P2: Plan2 P3: Plan3 P4: Plan4

<Example>

TCN A P1[¥r]

TCF @[¥r]                : set "CONTROL CH ONLY MODE" to OFF

Radio → Controller

- ① TCN @ ##[¥r]                : "CONTROL CH ONLY MODE" is ON  
                                 @ :Bank No.  
                                 ## :CH assignment plan(optional) P1,P2,P3,P4  
                                 P1: Plan1 P2: Plan2 P3: Plan3 P4: Plan4

<Example>      TCN A P1[¥r] or TCN A[¥r]

TCF @[¥r] "CONTROL CH ONLY MODE" is OFF

- ② OK[¥r]
- 
- 

<COMMAND TD>

Confirm/Set Tone Detection function ON/OFF .

---

---

Controller → Radio

- ① TD[¥r]                      :Confirm Tone Detection function ON/OFF  
TDN[¥r]                      :Tone Detection function ON  
TDF[¥r]                      :Tone Detection function OFF

Radio → Controller

- ① TDN[¥r]                      :Tone Detection function ON  
TDF[¥r]                      :Tone Detection function OFF
- ② OK[¥r]

Note:

If you add the Bank No. (A-J) at the end, you can select optional bank.

Ex) "TD A" or "TDN A"

This command instructs the unit to turn or confirm Tone Detection function ON/OFF.

---

---

<COMMAND TG>

Program Talk Group ID

---

---

Controller → Radio

- ① TG ? @%[¥r] : Confirm Programmed Talk Group IDs  
                   ? : Bank No. (A-J)  
                   @: ID Scan list (A-J)  
                   %: ID Location (1-9, 0)

② Program Talk Group IDs

//// **MOTOROLA TYPE1** ////

TG ? @% &##-\$\$[¥r] or TG ? @% &###-\$[¥r]  
                   ? : Bank No. (A-J)  
                   @% : ID Memory No.  
                   @ : ID Scan List (A-J) % : ID Location (1-9, 0)  
                   &##-\$\$ : Type1 ID  
                   & : Block No. (0-7)  
                   ## or ### : Fleet No.  
                   \$\$ : Sub fleet No.

<Example>

TG A A0 001-05[¥r] ID in ID memory "BANK A-A10" is  
   "BLOCK=0, FLEET=1, SUBFLEET=5".  
 TG A A0 0127-3[¥r] ID in ID memory "BANK A-A10" is  
   "BLOCK=0, FLEET=127, SUBFLEET=3".

//// **MOTOROLA TYPE 2** ////

TG ? @% #####[¥r]  
                   ? : Bank No. (A-J)  
                   @% : ID Memory No.  
                   @ : ID Scan List (A-J) % : ID Location (1-9, 0)  
                   ##### : Type2 ID

<Example>

TG A A0 001234[¥r] ID in ID memory "BANK A-A10" is "1234".

//// **LTR** ////

TG ? @% %\$\$\$##[¥r]  
                   ? : Bank No. (A-J)  
                   @% : ID Memory No.  
                   @ : ID Scan List (A-J) % : ID Location (1-9, 0)  
                   %\$\$\$## : LTR Talk Group ID  
                   % : Area code (0, 1)  
                   \$\$ : Home Repeater No. (01-20)  
                   ### : ID (000-254)

<Example>

TG A A0 001064[¥r]

ID in ID memory "BANK A-A10" is "Area code:0 Home Repeater No.:01 ID:64"

//// **EDACS** ////

TG ? @% &&-##\$[¥r]  
                   ? : Bank No. (A-J)  
                   @% : ID Memory No.

@ : ID Scan List (A-J) % : ID Location (1-9,0)  
 &&-##\$: Edacs Talk Group ID  
 && : Agency No. (00-15) ## : Fleet No. (00-15) \$ : SUBFLEET No. (0-7)

<Example>

TG A AO 01-025[¥r] AFS format  
 TG A AO 000149[¥r] DECIMAL format  
 ID in ID memory "BANK A-A10" is "AGENCY=01, FLEET=02, SUBFLEET=5"

>> PROGRAM EDACS PARTIAL ID <<

TG ? @% &&-[¥r] or TG ? @% &&-##[¥r]  
 ? : Bank No. (A-J)  
 @% : ID Memory No.  
 @ : ID Scan List (A-J) % : ID Location (1-9,0)  
 &&-: Edacs Partial Talk Group ID(All Agency)  
 &&-##: Edacs Partial Talk Group ID(All Agency-Fleet)  
 && : Agency No. (01-15) ## : Fleet No. (00-15)

<Example>

TG A AO 01-[¥r]  
 TG A AO 01-02[¥r]

Radio → Controller

①

//// MOTOROLA TYPE1 ////

TG ? @% &##-\$\$[¥r] or TG ? @% &###-\$[¥r]  
 ? : Bank No. (A-J)  
 @% : ID Memory No.  
 @ : ID Scan List (A-J) % : ID Location (1-9,0)  
 &##-\$\$ : Type1 ID  
 & : Block No. (0-9)  
 ## or ### : Fleet No.  
 \$\$ : Sub fleet No.

<Example>

TG A AO 001-05[¥r] ID in ID memory "BANK A-A10" is  
 "BLOCK=0, FLEET=1, SUBFLEET=5".

//// MOTOROLA TYPE 2 ////

TG ? @% #####[¥r]  
 ? : Bank No. (A-J)  
 @% : ID Memory No.  
 @ : ID Scan List (A-J) % : ID Location (1-9,0)  
 ##### : Type2 ID

<Example>

TG A AO 001234[¥r] ID in ID memory "BANK A-A10" is "1234".

//// LTR ////

TG ? @% %\$\$\$[¥r]  
 ? : Bank No. (A-J)  
 @% : ID Memory No.  
 @ : ID Scan List (A-J) % : ID Location (1-9,0)  
 %\$\$\$ : LTR Talk Group ID  
 % : Area code (0,1)  
 \$\$ : Home Repeater No. (01-20)

### : ID (000-254)

<Example>

TG A A0 001064[¥r]

ID in ID memory "BANK A-A10" is "Area code:0 Home Repeater No.:01 ID:64"

//// EDACS ////

TG ? @% &&-##\$[¥r]

? : Bank No. (A-J)

@% : ID Memory No.

@ : ID Scan List (A-J) % : ID Location (1-9,0)

&&-##\$: Edacs Talk Group ID

&& : Agency No. ## : Fleet No. \$ : SUBFLEET No.

<Example>

TG A A0 01-025[¥r] AFS format

TG A A0 000149[¥r] DECIMAL format

ID in ID memory "BANK A-A10" is "AGENCY=01, FLEET=02, SUBFLEET=5"

>> EDACS PARTIAL ID <<

TG ? @% &&----[¥r] or TG ? @% &&-##-[¥r]

? : Bank No. (A-J)

@% : ID Memory No.

@ : ID Scan List (A-J) % : ID Location (1-9,0)

&&----: Edacs Partial Talk Group ID(All Agency)

&&-##-: Edacs Partial Talk Group ID(All Agency-Fleet)

&& : Agency No. ## : Fleet No.

<Example>

TG A A0 01----[¥r]

TG A A0 01-02-[¥r]

② OK[¥r]

<COMMAND TR>

Set Trunking on a bank of channels.

Controller → Radio

TR & # %%%%%%%%% \$\$\$\$ ??? X[¥r]

& : A-J For bank selection.

# : 1,2,3,4,5,6,7,8,9 Trunking type.

1:Type1, 2:Type2-800, 3:Type2-900, 4:Type2-UHF, 5:Type2-VHF,  
6:WIDE BAND EDACS, 7:NARROW BAND EDACS, 8:EDACS SCAT, 9:LTR

%%%%%%%%%

Base frequency (Motorola UHF/VHF band only).

\$\$\$\$

Spacing (Motorola UHF/VHF band only)

The multiple of 5.0 kHz: 0050\*n(1-20)

The multiple of 12.5 kHz: 0125\*n(1-8)

The multiple of 7.5 kHz 0075\*n(1-13)

??? (option)

Offset Channel (Motorola UHF/VHF band only)

380~759

X (option)

Base Configuration No.  
1 or 2 or 3

Radio → Controller  
OK[¥r]

=====

<COMMAND TS> Not supported  
Confirm/Set Trunking function ON/OFF in the Search.

=====

Controller → Radio

- ① TS @[¥r] :Confirm Trunking function in the search mode ON/OFF  
@ :Bank No. (A-J)
- ② TSF @[¥r] :Set Trunking function in the search mode function OFF  
TSN @ ##[¥r] :Set Trunking function in the search mode ON  
@ :Bank No. (A-J)  
## :CH assignment plan(optional) P1, P2, P3, P4  
P1: Plan1 P2: Plan2 P3: Plan3 P4: Plan4

<Example>

TSN A P1[¥r]

Radio → Controller

- ① TSF[¥r] :Trunking function in the search mode OFF  
TSN @ ##[¥r] :Trunking function in the search mode ON  
@ :Bank No.  
## :CH assignment plan(optional) P1, P2, P3, P4
- ② OK[¥r]

=====

<COMMAND VR>  
Confirm the version of the Product.

=====

Controller → Radio  
VR[¥r]

Radio → Controller

VR@ .@[¥r] @ .@@ : The version of the Product

<Example>

VR1.00[¥r]                      The version of the Product is 1.00

Note) This value is not the version No. of the software.

=====

<COMMAND WA>  
ON/OFF function which informs when the alert message receives.

=====

Controller → Radio

- ① WA[¥r] :Confirm WA command active
- ② WAN[¥r] :WA command is ON, and WX alert ON

WAF[¥r] :WA command OFF, and Wx alert OFF

Radio → Controller

① WAN[¥r] :WA command is ON

WAF[¥r] :WA command is OFF

② OK[¥r] : Command OK

While the function is ON, when detect the same or wx alert,  
the unit sends the alert message to the controller:

=====

<COMMAND WI>

Read the window voltage.

=====

Controller → Radio

WI[¥r]

Radio → Controller

W@@@ F%%%%%%%%[¥r] @@@ :Window voltage  
%%%%%%%% :Frequency

Window voltage ranges from a minimum value of "000" to a maximum value of "255".  
The order of the frequency digits are from 1 GHz digit to 100 Hz digit.

<Example>

W155 F04060125[¥r] Window voltage is "155", and its frequency is "406.0125 MHz".

This command instructs the unit to send the current window voltage and its frequency.



CTCSS/DCS No. Table

No.	Remark
000	No tone
001	CTCSS: 67.0
002	CTCSS: 69.3
003	CTCSS: 71.9
004	CTCSS: 74.4
005	CTCSS: 77.0
006	CTCSS: 79.7
007	CTCSS: 82.5
008	CTCSS: 85.4
009	CTCSS: 88.5
010	CTCSS: 91.5
011	CTCSS: 94.8
012	CTCSS: 97.4
013	CTCSS: 100.0
014	CTCSS: 103.5
015	CTCSS: 107.2
016	CTCSS: 110.9
017	CTCSS: 114.8
018	CTCSS: 118.8
019	CTCSS: 123.0
020	CTCSS: 127.3
021	CTCSS: 131.8
022	CTCSS: 136.5
023	CTCSS: 141.3
024	CTCSS: 146.2
025	CTCSS:

	151.4
026	CTCSS: 156.7
027	CTCSS: 159.8
028	CTCSS: 162.2
029	CTCSS: 165.5
030	CTCSS: 167.9
031	CTCSS: 171.3
032	CTCSS: 173.8
033	CTCSS: 177.3
034	CTCSS: 179.9
035	CTCSS: 183.5
036	CTCSS: 186.2
037	CTCSS: 189.9
038	CTCSS: 192.8
039	CTCSS: 196.6
040	CTCSS: 199.5
041	CTCSS: 203.5
042	CTCSS: 206.5
043	CTCSS: 210.7
044	CTCSS: 218.1
045	CTCSS: 225.7
046	CTCSS: 229.1
047	CTCSS: 233.6
048	CTCSS: 241.8
049	CTCSS: 250.3
050	CTCSS: 254.1
051	DCS: 023

052	DCS: 025
053	DCS: 026
054	DCS: 031
055	DCS: 032
056	DCS: 036
057	DCS: 043
058	DCS: 047
059	DCS: 051
060	DCS: 053
061	DCS: 054
062	DCS: 065
063	DCS: 071
064	DCS: 072
065	DCS: 073
066	DCS: 074
067	DCS: 114
068	DCS: 115
069	DCS: 116
070	DCS: 122
071	DCS: 125
072	DCS: 131
073	DCS: 132
074	DCS: 134
075	DCS: 143
076	DCS: 145
077	DCS: 152
078	DCS: 155
079	DCS: 156
080	DCS: 162
081	DCS: 165
082	DCS: 172
083	DCS: 174
084	DCS: 205
085	DCS: 212
086	DCS: 223
087	DCS: 225
088	DCS: 226
089	DCS: 243

090	DCS: 244
091	DCS: 245
092	DCS: 246
093	DCS: 251
094	DCS: 252
095	DCS: 255
096	DCS: 261
097	DCS: 263
098	DCS: 265
099	DCS: 266
100	DCS: 271
101	DCS: 274
102	DCS: 306
103	DCS: 311
104	DCS: 315
105	DCS: 325
106	DCS: 331
107	DCS: 332
108	DCS: 343
109	DCS: 346
110	DCS: 351
111	DCS: 356
112	DCS: 364
113	DCS: 365
114	DCS: 371
115	DCS: 411
116	DCS: 412
117	DCS: 413
118	DCS: 423
119	DCS: 431
120	DCS: 432
121	DCS: 445
122	DCS: 446
123	DCS: 452
124	DCS: 454
125	DCS: 455
126	DCS: 462
127	DCS: 464

128	DCS: 465
129	DCS: 466
130	DCS: 503
131	DCS: 506
132	DCS: 516
133	DCS: 523
134	DCS: 526
135	DCS: 532
136	DCS: 546
137	DCS: 565
138	DCS: 606
139	DCS: 612
140	DCS: 624
141	DCS: 627
142	DCS: 631
143	DCS: 632
144	DCS: 654
145	DCS: 662
146	DCS: 664
147	DCS: 703
148	DCS: 712
149	DCS: 723
150	DCS: 731
151	DCS: 732
152	DCS: 734
153	DCS: 743
154	DCS: 754