

# UNIDEN PROGRAMMING CONTROL CODES FOR USE WITH UNIDEN SCANNERS

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## 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 )
  - (multiple 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 @%○⋯[\$r] :Select SEARCH RANGES

%, %, ○, ⋯ :bank name

<Example>

CB ACEGI[\$r]  
Select "BANK A, C, E, G, I".

Radio → Controller

- ①, ② CB @%○⋯[\$r] :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>

Informs 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

- ① CTN[\$r] :CTCSS/DCS ON CTF[\$r] CTCSS/DCS OFF
- CTS[\$r] :CTCSS/DCS SEARCH ON
- ② OK[\$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 Apc025 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] or IC @% &##-\$[\$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)

&##-\$[\$r] : 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)

#####[\$r] : 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)

%\$##[\$r] : 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)

&&-##[\$r] : 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)

&&----[\$r] : 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  
ILD &&-##[\$r] ALL Agency-Fleet lockout

&&: Agency No  
##: 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

KEYOO[¥r]      OO: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

LCD xx[¥r] : icon is ON/OFF/FLASH ?

LCD SMT[¥r] :By using this command, a user can check the signal strength meter

LCD BNK[¥r] :By using this command, a user can check the selected bank No.

LCD CHN[¥r] :By using this command, a user can check the No. of the channel or the character of the CH indication part

LCD FRQ[¥r] :By using this command, a user can check the tuned frequency or the character of the FREQUENCY indication part

LCD CTC[¥r] :By using this command, a user can check the CTCSS/DCS setting or the talk group ids

LCD[¥r] A user only sends this command to the scanner, and the scanner sends back all the above responses at once

Radio → Controller (+:ON -:OFF \*:FLASH)

xx +[¥r] xx -[¥r] xx \*[¥r]

ex) SMT +----[¥r]

ex) BNK +\*\*\*+----[¥r]

ON:A, B, D, E, F, G, H OFF:I, J FLASH:C

ex) CHN [300] [ ] [¥r] , CHN [ 1] [ ] [¥r]

ex) FRQ [406.0000] [ ] [¥r]

ex) CTC [123.0] [ ] [¥r]

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@00000000[\$r] :Set the lower edge frequency of the current SEARCH RANGE  
    LL@00000000 #[\$r] :Set the lower edge frequency of the selected SEARCH RANGE  
        @00000000 :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@00000000 #[\$r]  
    The current lower edge frequency is @0000000\*100 Hz.  
    #: SEARCH RANGE No (A, B, . . . J)

This command instructs the unit to set the lower edge frequency of chain search to @0000000\*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 LO>

Confirm/Set LOCKOUT function ON/OFF.

---

Controller → Radio

- ① LO[\$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@00000000 #[¥r]

The current upper edge frequency is @0000000\*100 Hz.

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

This command instructs the unit to set the upper edge frequency to  
@0000000\*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

② PI @#[¥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 on or off the **PRIORITY** (and **Plus**) function.

<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  $+[Y_r]$  to the controller.
- Open to close, unit sends  $-[Y_r]$  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

- ① RM @@@[\$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 (0MHz)
- ② OK[\$r]

This command instructs the unit to confirm receiver modulation.

---

<COMMAND SB>  
Confirm/Select scan banks.

---

Controller → Radio

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

<Example>

S147 F08510125[¥r]

Note)

$\text{Voltage} = (\text{MicomVcc} * \text{$$$})/255$  ex)  $\text{Vcc}:3.2V$   $\text{$$$}=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@0000000[¥r] @0000000 : 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@0000000[¥r] @0000000 : Frequency

<Example>

SS04060125[¥r]

Frequencies in search skip memory are "406.0125 MHz"

② Register

SS@0000000[¥r] @0000000 : 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

- ① to send all the frequencies in search skip memory.
- ② to 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 \$ @@@@ @@@@ @@@@ @@@@ @@@@ [¥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)

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

③OK[¥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 AO 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 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"

>> 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 AO 01----[¥r]

TG A AO 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:

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<COMMAND WI>

Read the window voltage.

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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	052	DCS: 025	090	DCS: 244	128	DCS: 465
000	No tone	053	DCS: 026	091	DCS: 245	129	DCS: 466
001	CTCSS: 67. 0	054	DCS: 031	092	DCS: 246	130	DCS: 503
002	CTCSS: 69. 3	055	DCS: 032	093	DCS: 251	131	DCS: 506
003	CTCSS: 71. 9	056	DCS: 036	094	DCS: 252	132	DCS: 516
004	CTCSS: 74. 4	057	DCS: 043	095	DCS: 255	133	DCS: 523
005	CTCSS: 77. 0	058	DCS: 047	096	DCS: 261	134	DCS: 526
006	CTCSS: 79. 7	059	DCS: 051	097	DCS: 263	135	DCS: 532
007	CTCSS: 82. 5	060	DCS: 053	098	DCS: 265	136	DCS: 546
008	CTCSS: 85. 4	061	DCS: 054	099	DCS: 266	137	DCS: 565
009	CTCSS: 88. 5	062	DCS: 065	100	DCS: 271	138	DCS: 606
010	CTCSS: 91. 5	063	DCS: 071	101	DCS: 274	139	DCS: 612
011	CTCSS: 94. 8	064	DCS: 072	102	DCS: 306	140	DCS: 624
012	CTCSS: 97. 4	065	DCS: 073	103	DCS: 311	141	DCS: 627
013	CTCSS: 100. 0	066	DCS: 074	104	DCS: 315	142	DCS: 631
014	CTCSS: 103. 5	067	DCS: 114	105	DCS: 325	143	DCS: 632
015	CTCSS: 107. 2	068	DCS: 115	106	DCS: 331	144	DCS: 654
016	CTCSS: 110. 9	069	DCS: 116	107	DCS: 332	145	DCS: 662
017	CTCSS: 114. 8	070	DCS: 122	108	DCS: 343	146	DCS: 664
018	CTCSS: 118. 8	071	DCS: 125	109	DCS: 346	147	DCS: 703
019	CTCSS: 123. 0	072	DCS: 131	110	DCS: 351	148	DCS: 712
020	CTCSS: 127. 3	073	DCS: 132	111	DCS: 356	149	DCS: 723
021	CTCSS: 131. 8	074	DCS: 134	112	DCS: 364	150	DCS: 731
022	CTCSS: 136. 5	075	DCS: 143	113	DCS: 365	151	DCS: 732
023	CTCSS: 141. 3	076	DCS: 145	114	DCS: 371	152	DCS: 734
024	CTCSS: 146. 2	077	DCS: 152	115	DCS: 411	153	DCS: 743
025	CTCSS:	078	DCS: 155	116	DCS: 412	154	DCS: 754
		079	DCS: 156	117	DCS: 413		
		080	DCS: 162	118	DCS: 423		
		081	DCS: 165	119	DCS: 431		
		082	DCS: 172	120	DCS: 432		
		083	DCS: 174	121	DCS: 445		
		084	DCS: 205	122	DCS: 446		
		085	DCS: 212	123	DCS: 452		
		086	DCS: 223	124	DCS: 454		
		087	DCS: 225	125	DCS: 455		
		088	DCS: 226	126	DCS: 462		
		089	DCS: 243	127	DCS: 464		