

7.11. REMOTE COMMAND

【 Remote Communication Format 】

BPS rate : 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

【 FORMAT OF THIS DOCUMENT 】

<COMMAND NAME>

Summary explanation of the function of the command

Controller → Radio
 Command format
Radio → Controller
 Response format

NOTE

1. Any command is required to wait a response from the scanner, then, next command will be acceptable.
2. All memory access commands are acceptable in only Program Mode. Use PRG command to enter Program Mode, and EPG command to exit.
3. Error message isn't described in this document, but the scanner returns 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) Framing error : FER[¥r]
 - 4) Overrun error : ORER[¥r]
4. [¥r] means "to hit the Enter key" or "to send the Return code".
5. Several commands or responses with long format are described like multi-line because of the page width but their formats are only single line, actually.
6. In set command, only "," parameters are not changed.
7. The set command is aborted if any format error is detected.
8. [INDEX] or [xxx_INDEX] is the index of internal memory chain. Dynamic Memory Allocation Structure always uses it as a handle to access data and to trace forward/reverse or up/down index. The range of the index is from 1 to maximum memory block (about 3000).

9. [FRQ], [BASEx] and [LIMIT_x] are frequency format.
It is showed by 8digit number without decimal point.
The order of the digits is from 1 GHz digit to 100 Hz digit.
ex. 08510125 means 851.0125MHz
10. [TGID] shows TGID format. The formats depend on Trunked System Type.
See another Appendix to get further information.
11. [NAME] shows each custom name. If user set only space character, the name will return to default name.

Remote Command List

	Category	Command	Function	Program Mode Only
1	Remote Control	GID	Get Current Talkgroup ID Status	
2		KEY	Push KEY	
3		POF	Power OFF	
4		QSH	Go to quick search hold mode	
5		STS	Get Status	
6	System information	MDL	Get Model Info	
7		VER	Get Firmware Version	
8	Programming Mode	PRG	Enter Program Mode	
9	Control	EPG	Exit Program Mode	
10	System Settings	BLT	Get/Set Backlight	○
11		BSV	Get/Set Battery Save	○
12		CLR	Clear All Memory	○
13		KBP	Get/Set Key Beep	○
14		OMS	Get/Set Opening Message	○
15		PRI	Get/Set Priority Mode	○
16	Scan Settings	SCT	Get System Count	○
17		SIH	Get System Index Head	○
18		SIT	Get System Index Tail	○
19		QSL	Get/Set System Quick Lockout	○
20		QGL	Get/Set Group Quick Lockout	○
21		CSY	Create System	○
22		DSY	Delete System	○
23		CPS	Copy System	○
24		SIN	Get/Set System Info	○
25		TRN	Get/Set Trunk Info	○
26		TFQ	Get/Set Trunk Frequency Info	○
27		AGC	Append Channel Group	○
28		AGT	Append TGID Group	○
29		DGR	Delete Group	○
30	GIN	Get/Set Group Info	○	

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	Category	Command	Function	Program Mode Only	
31	Scan Settings (Continuation)	ACC	Append Channel	○	
32		ACT	Append TGID	○	
33		DCH	Delete Channel	○	
34		CIN	Get/Set Channel Info	○	
35		TIN	Get/Set TGID Info	○	
36		GLI	Get Lockout TGID (for Rvw L/O ID)	○	
37		ULI	Unlock TGID (for Rvw L/O ID)	○	
38		LOI	Lock Out ID (TGID)	○	
39		REV	Get Rev Index	○	
40		FWD	Get Fwd Index	○	
41		RMB	Get Remains of Memory Block	○	
42		MEM	Get Memory Used	○	
42		Search/Close Call Settings	SCO	Get/Set Search/Close Call Settings	○
43			GLF	Get Global Lockout Freq	○
44	ULF		Unlock Global L/O	○	
45	LOF		Lock Out Frequency	○	
46	CLC		Get/Set Close Call Settings	○	
47	Custom Search Settings	CSG	Get/Set Custom Search Group	○	
48		CSP	Get/Set Custom Search Settings	○	
49	Weather Settings	WPR	Get/Set Weather Priority Setting	○	
50		SGP	Get/Set SAME Group Settings	○	
51	Motorola Custom Band Plan	MCP	Get/Set Motorola Custom Band Plan Settings	○	
52	Test	WIN	*Get Window Voltage		
53		BAV	*Get Battery Voltage		

<COMMAND GID>
Get Current Talkgroup ID Status

Controller → Radio

①GID[¥r]

Radio → Controller

①

GID, [SYS_TYPE], [TGID], [ID_SRCH_MODE], [NAME1], [NAME2], [NAME3] [¥r]

[SYS_TYPE] : System Type

[TGID] : TGID

[ID_SRCH_MODE]

0:ID:SCAN mode

1:ID:SEARCH mode

[NAME1] : SYSTEM NAME (Alpha Tag)

[NAME2] : GROUP NAME (Alpha Tag)

[NAME3] : TGID NAME (Alpha Tag)

FUNCTION

This command returns TGID currently displayed on LCD.

NOTE

This command returns , , , , , [¥r], when TGID is not displayed.

<COMMAND KEY>

Push KEY

Controller → Radio

①KEY, [KEY_CODE], [KEY_MODE] [¥r]

Radio → Controller

①KEY, OK [¥r]

[KEY_CODE] M : MENU

F : F

H : HOLD

S : SCAN/SEARCH

L : L/O

! : LIGHT/LOCK

1 : 1/PRI

2 : 2/WX

3 : 3

4 : 4

5 : 5

6 : 6

7 : 7/RCL

8 : 8

9 : 9

0 : 0

. (dot) : ./NO/REV

E : E/YES/ATT

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> : VFO RIGHT * Set "P" to KEY_MODE.
< : VFO LEFT * Set "P" to KEY_MODE.
^ : VFO PUSH
P : POWER

[KEY_MODE] P : Press (One Push)
L : Long Press (Press and Hold a few second)
H : Hold (Press and Hold until Release receive)
R : Release (Cancel Hold state)

Ex. 1) Press MENU KEY

→ KEY, M, P[¥r]
← OK[¥r]

Ex. 2) Press F + SCAN KEY

→ KEY, F, H[¥r] : Hold F KEY
← OK[¥r]
→ KEY, S, P[¥r] : Press SCAN KEY (F + SCAN KEY operation)
← OK[¥r]
→ KEY, F, R[¥r] : Release F KEY
→ OK[¥r]

Ex. 3) Press and Hold L/O KEY

→ KEY, L, L[¥r]
← OK[¥r]

The Scanner is not turned off by this command.

=====

<COMMAND POF>

Power OFF

=====

Controller → Radio

①POF[¥r]

Radio → Controller

①POF, OK[¥r]

Turns off the scanner.

After this command, the scanner doesn't accept any command.

=====

<COMMAND QSH>

Go to quick search hold mode

=====

Controller → Radio

QSH, [FRQ], [STP], [MOD], [ATT], [DLY], [SKP], [CODE_SRCH], [SCR], [REP] [¥r]

Radio → Controller

①QSH, OK[¥r]

[FRQ] : Frequency (The right frequency)

[STP] : Search Step

(0, 500, 625, 750, , 5000, 10000, 20000)

0 : AUTO

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500 : 5k
 625 : 6.25k
 750 : 7.5k
 1000 : 10k
 1250 : 12.5k
 1500 : 15k
 2000 : 20k
 2500 : 25k
 5000 : 50k
 10000 : 100k

[MOD] : Modulation (AUTO/FM/NFM/AM)
 [ATT] : Attenuation (0:OFF / 1:ON)
 [DLY] : Delay Time (0-5)
 [SKP] : Data Skip (0:OFF / 1:ON)
 [CODE_SRCH] : CTCSS/DCS Search (0:OFF / 1:ON)
 [SCR] : Pager/UHF TV Screen

(8digit: #####)

(each # is 0 or 1)	+-----	Reserved (always 0)
0 means OFF	+-----	Reserved (always 0)
1 means ON	+-----	Reserved (always 0)
	+-----	Reserved (always 0)
	+-----	Reserved (always 0)
	+-----	Reserved (always 0)
	+-----	UHF TV
	+-----	Pager

[REP] : Repeater Find (0:OFF / 1:ON)

②QSH, NG[¥r]

This command is invalid when the Scanner is in Menu Mode, during Direct Entry operation, during Quick Save operation.

FUNCTION

SS specifies arbitrary frequency and changes to Quick Search Hold (VFO) mode. Parameter, such as STP, changes the contents of Srch/CloCall option.

=====

<COMMAND STS>

Get Current Status

=====

Controller → Radio

①STS[¥r]

Radio → Controller

①STS, [L1_CHAR], [L1_MODE], [L2_CHAR], [L2_MODE], [ICON1], [ICON2], [RESERVE], [SQL], [MUT], [BAT], [WAT] [¥r]

[L1_CHAR] : Line1 Characters 16char (fixed length)
 [L1_MODE] : Line1 Display Mode 16char
 [L2_CHAR] : Line1 Characters 16char (fixed length)
 [L2_MODE] : Line1 Display Mode 16char
 [ICON1] : Icon1 Group Display Mode 15char
 [ICON2] : Icon2 Group Display Mode 17char
 [RESERVE] : (Reserved area, not used)
 [SQL] : Squelch Status (0:CLOSE / 1:OPEN)

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[MUT] : Mute Status (0:OFF / 1:ON)
 [BAT] : Battery Low Status (0:No Alert / 1:Alert)
 [WAT] : Weather Alert Status 0: No Alert
 1: Alert
 \$\$\$: Alert SAME CODE (SAME EVENT CODE)

NOTE: Line1 or Line2 Characters may include “,” as displayed character.

Display Mode for Line1 or Line2
 (space) : NORMAL CHAR, _ (under bar) : CURSOR POINT
 * : REVERSE CHAR, # : BLINK CHAR

Display Mode for Icon1 or Icon2 Group (0:OFF / 1:ON / 2:BLINK)

ICON1 Group and Order: SYS /1/2/3/4/5/6/7/8/9/0 / ATT / PRI / KEYLOCK / BATT

ICON2 Group and Order: GRP /1/2/3/4/5/6/7/8/9/0 / AM / N / FM / L/O / F / CC

Ex) → STS[¥r]
 ← System A
 “ 851.0125MHz ”, #####,
 11201111111000, 11111111000011000, ,
 1, 0, 0, 0[¥r]

System A	
“851.0125MHz ”	(L1:BLINK)
SYS 12 4567890 ATT	(2 :BLINK)
GRP 1234567 NFM	

Scan Mode
 Squelch OPEN
 Mute OFF
 No Battery Alert
 No Weather Alert

Returns current scanner status.

=====

<COMMAND MDL>
 Get Model Info

=====

Controller → Radio
 ①MDL[¥r]

Radio → Controller
 ①MDL, BC246T[¥r]

Returns Model Information.

=====

<COMMAND VER>
 Get Firmware Version

=====

Controller → Radio
 ①VER[¥r]

Radio → Controller
①VER, VR1.00[¥r]

Returns Firmware Version.

<COMMAND PRG>
Enter Program Mode

Controller → Radio
①PRG[¥r]

Radio → Controller
①PRG, OK[¥r]

②PRG, NG[¥r]

This command is invalid when the Scanner is in Menu Mode, during Direct Entry operation, during Quick Save operation.

The Scanner goes to Program Mode.

The Scanner displays "Remote Mode" on upper line and "Keypad Lock" on lower line in Program Mode.

And POWER key and Function key are valid in Program Mode.

<COMMAND EPG>
Exit Program Mode

Controller → Radio
①EPG[¥r]

Radio → Controller
①EPG, OK[¥r]

The Scanner exits from Program Mode.
Then the Scanner goes to Scan Hold Mode.

<COMMAND BLT>
Get/Set Backlight

Controller → Radio
①BLT[¥r] : Get Backlight Setting
②BLT, ##[¥r] : Set Backlight Setting

Radio → Controller
①BLT, ##[¥r]
②BLT, OK[¥r]

means Backlight Setting
IF : INFINITE

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10 : 10sec
30 : 30sec
KY : KEYPRESS
SQ : SQUELCH

Get/Set Backlight Setting.
This command is only acceptable in Programming Mode.

<COMMAND BSV>
Get/Set Battery Save

Controller → Radio
①BSV[¥r] : Get Battery Save Setting
②BSV,#[¥r] : Set Battery Save Setting

Radio → Controller
①BSV,#[¥r]
②BSV,OK[¥r]

means Battery Save Setting
(0:OFF / 1:ON)

Get/Set Battery Save Setting.
This command is only acceptable in Programming Mode.

<COMMAND CLR>
Clear All Memory

Controller → Radio
①CLR[¥r]

Radio → Controller
①CLR,OK[¥r]

All the memories are set for initial setting.
This command is only acceptable in Programming Mode.

Note) Needs about 10 seconds execute time.
Only PC Control (Baud Rate) does not become an initial-setting value.

<COMMAND KBP>
Get/Set Key Beep

Controller → Radio
①KBP[¥r] : Get Key Beep Setting
②KBP,#[¥r] : Set Key Beep Setting

Radio → Controller
①KBP,#[¥r]
②KBP,OK[¥r]

means Key Beep Setting
(0:OFF / 1:ON)

Get/Set Key Beep Setting.
This command is only acceptable in Programming Mode.

<COMMAND OMS>
Get/Set Opening Message

Controller → Radio
①OMS[¥r]
②OMS, [L1_CHAR], [L2_CHAR] [¥r]

Radio → Controller
①OMS, [L1_CHAR], [L2_CHAR] [¥r]
②OMS, OK[¥r]

Get/Set Opening Message.
[L1_CHAR] : Line1 Characters (max. 16char)
[L2_CHAR] : Line2 Characters (max. 16char)

If only space code is set in character area,
the message returns default message.

<COMMAND PRI>
Get/Set Priority Mode

Controller → Radio
①PRI[¥r] : Get Priority Mode Setting
②PRI,#[¥r] : Set Priority Mode Setting

Radio → Controller
①PRI,#[¥r]
②PRI,OK[¥r]

means Priority Setting
(0:OFF / 1:ON, 2:PLUS ON)

Get/Set Priority Mode.
This command is only acceptable in Programming Mode.

<COMMAND SCT>
Get System Count

Controller → Radio
①SCT[¥r]
Radio → Controller
①SCT,###[¥r] : ### (0-200)

Returns the number of stored System.
This command is only acceptable in Programming Mode.

<COMMAND SIH>
Get System Index Head

Controller → Radio
①SIH[¥r]

Radio → Controller
①SIH, [SYS_INDEX] [¥r]

Returns the first index of stored system list.
This command is only acceptable in Programming Mode.

<COMMAND SIT>
Get System Index Tail

Controller → Radio
①SIT[¥r]

Radio → Controller
①SIT, [SYS_INDEX] [¥r]

Returns the last index of stored system list.
This command is only acceptable in Programming Mode.

<COMMAND QSL>
Get/Set System Quick Lockout

Controller → Radio
①QSL[¥r]
②QSL, ##### [¥r]

Radio → Controller
①QSL, ##### [¥r]
②QSL, OK [¥r]

Returns the System Quick Key status.
: ##### (each # is 0 or 1)
0 means OFF
1 means ON
The Order of Quick Key is as same as LCD Icon.

This command is only acceptable in Programming Mode.
It cannot turn on/off the Quick Key that has no System.

<COMMAND QGL>
Get/Set Group Quick Lockout

Controller → Radio
①QGL, [SYS_INDEX], [¥r]
②QGL, [SYS_INDEX], ##### [¥r]

Radio → Controller

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①QGL, ##### [¥r]

②QGL, OK [¥r]

Returns Group Quick Key status of current System.

: ##### (each # is 0 or 1)

0 means OFF

1 means ON

The Order of Quick Key is as same as LCD Icon.

This command is only acceptable in Programming Mode.

It cannot turn on/off the Quick Key that has no Group.

=====

<COMMAND CSY>

Create System

=====

Controller → Radio

①CSY, [SYS_TYPE] [¥r]

Radio → Controller

①CSY, [SYS_INDEX] [¥r]

[SYS_TYPE] : System Type

CNV	: CONVENTIONAL
M82S	: MOT_800_T2_STD
M82P	: MOT_800_T2_SPL
M92	: MOT_900_T2
MV2	: MOT_VHF_T2
MU2	: MOT_UHF_T2
M81S	: MOT_800_T1_STD
M81P	: MOT_800_T1_SPL
EDN	: EDACS_NARROW
EDW	: EDACS_WIDE
EDS	: EDACS_SCAT
LTR	: LTR
M82C	: MOT_800_T2_CUS
M81C	: MOT_800_T1_CUS

[SYS_INDEX] : The Index if Created System

Creates a system and returns created system index.

The index is a handle to get/set system information.

Returns -1 if the scanner failed to create because of no resource.

This command is only acceptable in Programming Mode.

=====

<COMMAND DSY>

Delete System

=====

Controller → Radio

①DSY, [SYS_INDEX] [¥r]

Radio → Controller

①DSY, OK [¥r]

[SYS_INDEX] : System Index

This command deletes a System.

This command is only acceptable in Programming Mode.

<COMMAND CPS>

Copy System

Controller → Radio

①CPS, [SYS_INDEX1], [NAME] [¥r]

Radio → Controller

①CPS, [SYS_INDEX2] [¥r]

[SYS_INDEX1] : The Index of Source System

[NAME] : The Name of Copied System

[SYS_INDEX2] : The Index of Copied System

Copies a system.

Returns "ERR" instead of SYS_INDEX2 if the scanner failed to copy because of no resource.

This command is only acceptable in Programming Mode.

<COMMAND SIN>

Get/Set System Info

Controller → Radio

①SIN, [INDEX] [¥r]

②SIN, [INDEX], [NAME], [QUICK_KEY], [HLD], [LOUT], [ATT], [DLY], [SKP], [EMG] [¥r]

Radio → Controller

①SIN, [SYS_TYPE], [NAME], [QUICK_KEY], [HLD], [LOUT], [ATT], [DLY], [SKP], [EMG],
[REV_INDEX], [FWD_INDEX], [CHN_GRP_HEAD], [CHN_GRP_TAIL], [SEQ_NO] [¥r]

②SIN, OK [¥r]

[INDEX] : System Index

[SYS_TYPE] : System Type

[NAME] : Name (max. 16char)

[QUICK_KEY] : Quick Key (1-9, 0: means 10, . (dot): means none)

[HLD] : System Hold Time (0-255)

[LOUT] : Lockout (0:Unlocked / 1:Lockout)

[ATT] : Attenuation (0:OFF / 1:ON)

[DLY] : Delay Time (0-5)

[SKP] : Data Skip (0:OFF / 1:ON)

[EMG] : Emergency Alert (0:Ignore /1:Alert)

[REV_INDEX] : Reverse System Index of the Scan Setting

[FWD_INDEX] : Forward System Index of the Scan Settings

[CHN_GRP_HEAD] : Channel Group Index Head of the System

[CHN_GRP_TAIL] : Channel Group Index Tail of the System

[SEQ_NO] : System Sequence Number (1-200)

Get/Set System Information.

The scanner returns only ",," to punctuate for parameters which are not appropriate the system type.

In set command, the scanner neglects the parameters that are not

appropriate the system type.

In set command, only ", " parameters are not changed.

The set command is aborted if any format error is detected.

This command is only acceptable in Programming Mode.

<COMMAND TRN>

Get/Set Trunk Info

Controller → Radio

- ① TRN, [INDEX] [¥r]
- ② TRN, [INDEX], [ID_SEARCH], [S_BIT], [END_CODE], [AFS], [I-CALL], [C-CH_ONLY], [FMAP], [CTM_FMAP], [BASE1], [STEP1], [OFFSET1], [BASE2], [STEP2], [OFFSET2], [BASE3], [STEP3], [OFFSET3] [¥r]

Radio → Controller

- ① TRN, [ID_SEARCH], [S_BIT], [END_CODE], [AFS], [I-CALL], [C-CH_ONLY], [FMAP], [CTM_FMAP], [BASE1], [STEP1], [OFFSET1], [BASE2], [STEP2], [OFFSET2], [BASE3], [STEP3], [OFFSET3], [TGID_GRP_HEAD], [TGID_GRP_TAIL], [ID_LOUT_GRP_HEAD], [ID_LOUT_GRP_TAIL] [¥r]
- ② TRN, OK [¥r]

[INDEX]	:	System Index	
[ID_SEARCH]	:	ID Search/Scan	(0:ID Scan mode / 1: Search Mode)
[S_BIT]	:	Motorola Status Bit	(0:Ignore, 1:Yes)
[END_CODE]	:	Motorola End Code	(0:Ignore, 1:Yes)
[AFS]	:	EDACS Format	(0:Decimal / 1:AFS)
[I-CALL]: I-CALL			(0:OFF / 1:ON)
[C-CH_ONLY]	:	C-CH Only	(0:OFF / 1:ON)
[FMAP]	:	Fleet Map	(0-16, 0-15:Preset, 16:Custom)
[CTM_FMAP]	:	Custom Fleet Map Setting (##### : # is 0-E)	
		# means Size Code of each BLOCK (from 0 to 7)	
		0 : Size Code 0	
		1 : Size Code 1	
		2 : Size Code 2	
		3 : Size Code 3	
		4 : Size Code 4	
		5 : Size Code 5	
		6 : Size Code 6	
		7 : Size Code 7	
		8 : Size Code 8	
		9 : Size Code 9	
		A : Size Code 10	
		B : Size Code 11	
		C : Size Code 12	
		D : Size Code 13	
		E : Size Code 14	
[BASE1]	:	Base Frequency1	(for MOT UHF/VHF System only)
[STEP1]	:	Step1	(for MOT UHF/VHF System only)
[OFFSET1]	:	Offset1	(for MOT UHF/VHF System only)
[BASE2]	:	Base Frequency2	(for MOT UHF/VHF System only)
[STEP2]	:	Step2	(for MOT UHF/VHF System only)
[OFFSET2]	:	Offset2	(for MOT UHF/VHF System only)
[BASE3]	:	Base Frequency3	(for MOT UHF/VHF System only)
[STEP3]	:	Step3	(for MOT UHF/VHF System only)
[OFFSET3]	:	Offset3	(for MOT UHF/VHF System only)

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[TGID_GRP_HEAD] : TGID Index Head of the System
[TGID_GRP_TAIL] : TGID Index Tail of the System
[ID_LOUT_GRP_HEAD] : L/O TGID Group Index Head of the System
[ID_LOUT_GRP_TAIL] : L/O TGID Group Index Tail of the System

Get/Sets Trunked System Information.

The scanner returns only “,” to punctuate for parameters which are not appropriate the system type.

In set command, the scanner neglects the parameters that are not appropriate the system.

In set command, only “,” parameters are not changed.

The set command is aborted if any format error is detected.

This command is only acceptable in Programming Mode.

<COMMAND TFQ>

Get/Set Trunk Frequency Info

Controller → Radio

- ①TFQ, [CHN_INDEX] [¥r]
- ②TFQ, [CHN_INDEX], [FRQ], [LCN] [¥r]

Radio → Controller

- ①TFQ, [FRQ], [LCN], [REV_INDEX], [FWD_INDEX], [SYS_INDEX], [GRP_INDEX] [¥r]
- ②TFQ, OK [¥r]

[CHN_INDEX] : Channel Index
[FRQ] : Frequency for Trunked System
[LCN] : LCN
[REV_INDEX] : Reverse Frequency Index of the System Frequency Group
[FWD_INDEX] : Forward Frequency Index of the System Frequency Group
[SYS_INDEX] : System Index of the Frequency
[GRP_INDEX] : Index of the System Frequency Group

In set command, only “,” parameters are not changed.

The set command is aborted if any format error is detected.

This command is only acceptable in Programming Mode.

For Motorola or EDACS SCAT System, [LCN] is ignored.

<COMMAND AGC>

Append Channel Group

Controller → Radio

- ①AGC, [SYS_INDEX] [¥r]

Radio → Controller

- ①AGC, [GRP_INDEX] [¥r]

[SYS_INDEX] : System Index
[GRP_INDEX] : appended Channel Group Index

Append Channel Group to the system.

Returns -1 if the scanner failed to create because of no resource.

This command is only acceptable in Programming Mode.

<COMMAND AGT>

Append TGID Group

Controller → Radio

①AGT, [SYS_INDEX] [¥r]

Radio → Controller

①AGT, [GRP_INDEX] [¥r]

[SYS_INDEX] : System Index

[GRP_INDEX] : appended TGID Group Index

Append TGID Group to the system.

Returns -1 if the scanner failed to create because of no resource.

This command is only acceptable in Programming Mode.

<COMMAND DGR>

Delete Group

Controller → Radio

①DGR, [GRP_INDEX] [¥r]

Radio → Controller

①DGR, OK [¥r]

[GRP_INDEX] : Group Index

This command deletes a Channel Group or TGID Group.

This command is only acceptable in Programming Mode.

<COMMAND GIN>

Get/Set Group Info

Controller → Radio

①GIN, [GRP_INDEX] [¥r]

②GIN, [GRP_INDEX], [NAME], [QUICK_KEY], [LOUT] [¥r]

Radio → Controller

①GIN, [GRP_TYPE], [NAME], [QUICK_KEY], [LOUT], [REV_INDEX],
[FWD_INDEX], [SYS_INDEX], [CHN_HEAD], [CHN_TAIL], [SEQ_NO] [¥r]

②GIN, OK [¥r]

[GRP_INDEX] : Group Index

[GRP_TYPE] : Group Type (C:Channel Group / T:TGID Group)

[NAME] : Name (max. 16char)

[QUICK_KEY] : Quick Key (1-9, 0: means 10, . (dot): means none)

[LOUT] : Lockout (0:Unlocked / 1:Lockout)

[REV_INDEX] : Reverse Group Index of the System

[FWD_INDEX] : Forward Group Index of the System

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[SYS_INDEX] : System Index
[CHN_HEAD] : Channel Index Head of the Group List
[CHN_TAIL] : Channel Index Tail of the Group List
[SEQ_NO] : Group Sequence Number of the System

Get/Set Group Information.

In set command, only “,” parameters are not changed.

The set command is aborted if any format error is detected.

This command is only acceptable in Programming Mode.

=====

<COMMAND ACC>

Append Channel

=====

Controller → Radio

①ACC, [GRP_INDEX] [¥r]

Radio → Controller

①ACC, [CHN_INDEX] [¥r]

[GRP_INDEX] : Channel Group Index
[CHN_INDEX] : appended Channel Index

Append Channel to the group.

Returns -1 if the scanner failed to create because of no resource.

This command is only acceptable in Programming Mode.

=====

<COMMAND ACT>

Append TGID

=====

Controller → Radio

①ACT, [GRP_INDEX] [¥r]

Radio → Controller

①ACT, [INDEX] [¥r]

[GRP_INDEX] : TGID Group Index
[TGID_INDEX] : appended TGID Index

Append Channel to the group.

Returns -1 if the scanner failed to create because of no resource.

This command is only acceptable in Programming Mode.

=====

<COMMAND DCH>

Delete Channel

=====

Controller → Radio

①DCH, [INDEX] [¥r]

Radio → Controller

①DCH, OK [¥r]

[INDEX] : Channel Index, TGID Index

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or Frequency Index of Trunked System

This command deletes a Channel and TGID.
This command is also valid for deleting a frequency
for a Trunked System.
This command is only acceptable in Programming Mode.

<COMMAND CIN>
Get/Set Channel Info

Controller → Radio

- ①CIN, [INDEX] [¥r]
- ②CIN, [INDEX], [NAME], [FRQ], [STP], [MOD], [CTCSS/DCS], [TLOCK],
[LOUT], [PRI], [ATT], [ALT] [¥r]

Radio → Controller

- ①CIN, [NAME], [FRQ], [STP], [MOD], [CTCSS/DCS], [TLOCK], [LOUT], [PRI], [ATT],
[ALT], [REV_INDEX], [FWD_INDEX], [SYS_INDEX], [GRP_INDEX], [¥r]
- ②CIN, OK [¥r]

[INDEX]	: Channel Index
[NAME]	: Name (max. 16char)
[FRQ]	: Channel Frequency
[STP]	: Search Step (0, 500, 625, 750, , 5000, 10000, 20000) 0 : AUTO 500 : 5k 625 : 6.25k 750 : 7.5k 1000 : 10k 1250 : 12.5k 1500 : 15k 2000 : 20k 2500 : 25k 5000 : 50k 10000 : 100k
[MOD]	: Modulation (AUTO/FM/NFM/AM)
[ATT]	: Attenuation (0:OFF / 1:ON)
[CTCSS/DCS]	: CTCSS/DCS Mode (0-231: see CTCSS/DCS Code List)
[TLOCK]	: CTCSS/DCS Tone Lockout (0:OFF / 1:ON)
[LOUT]	: Lockout (0:Unlocked / 1:Lockout)
[PRI]	: Priority (0:OFF / 1:ON)
[ALT]	: Alert (0:OFF / 1:ON)
[REV_INDEX]	: Reverse Channel Index of the TGID Group
[FWD_INDEX]	: Forward Channel Index of the TGID Group
[SYS_INDEX]	: System Index of the TGID
[GRP_INDEX]	: Group Index of the TGID

Get/Set Channel Information.

In set command, only “,” parameters are not changed.
The set command is aborted if any format error is detected.
This command is only acceptable in Programming Mode.

<COMMAND TIN>

Get/Set TGID Info

Controller → Radio

- ①TIN, [INDEX] [¥r]
- ②TIN, [INDEX], [NAME], [TGID], [LOUT], [ALT] [¥r]

Radio → Controller

- ①TIN, [NAME], [TGID], [LOUT], [ALT], [REV_INDEX], [FWD_INDEX], [SYS_INDEX], [GRP_INDEX] [¥r]
- ②TIN, OK [¥r]

[INDEX] : TGID Index
[NAME] : Name (max. 16char)
[TGID] : TGID
[LOUT] : Lockout (0:Unlocked / 1:Lockout)
[ALT] : Alert (0:OFF / 1:ON)
[REV_INDEX] : Reverse TGID Index of the TGID Group
[FWD_INDEX] : Forward TGID Index of the TGID Group
[SYS_INDEX] : System Index of the TGID
[GRP_INDEX] : Group Index of the TGID

Get/Set TGID Information.

In set command, only “,” parameters are not changed.
The set command is aborted if any format error is detected.
This command is only acceptable in Programming Mode.

<COMMAND GLI>

Get Lockout TGID (for Rvw L/O ID)

Controller → Radio

- ①GLI, [SYS_INDEX] [¥r]

Radio → Controller

- ①GLI, [TGID] [¥r]
GLI, -1 [¥r] : No more lockout TGID

This command is used to get L/O TGID list of a system.
You should call this command again and again to get all L/O TGID until the scanner returns -1 .
-1 means that no more L/O frequency exists.
This command is only acceptable in Programming Mode.

<COMMAND ULI>

Unlock TGID (for Rvw L/O ID)

Controller → Radio

- ①ULI, [SYS_INDEX], [TGID] [¥r]

Radio → Controller

①ULI, OK[¥r]

This command unlocks a L/O TGID in a system.
The TGID is deleted from L/O list.
This command is only acceptable in Programming Mode.

<COMMAND LOI>

Lock OUT ID (TGID)

Controller → Radio

①LOI, [SYS_INDEX], [TGID] [¥r]

Radio → Controller

①LOI, OK[¥r]

This command locks out a TGID for the system.
The TGID is added to L/O list.
This command is only acceptable in Programming Mode.

<COMMAND REV>

Get Rev Index

Controller → Radio

①REV, [INDEX] [¥r]

Radio → Controller

①REV, [INDEX] [¥r]

Returns reverse(backward) index of the index in the memory chain.
Returns -1 if no more index exists.
This command is only acceptable in Programming Mode.

<COMMAND FWD>

Get Fwd Index

Controller → Radio

①FWD, [INDEX] [¥r]

Radio → Controller

①FWD, [INDEX] [¥r]

Returns forward index of the index in the memory chain.
Returns -1 if no more index exists.
This command is only acceptable in Programming Mode.

<COMMAND RMB>

Get Remains of Memory Block

Controller → Radio

①RMB[¥r]

Radio → Controller

①RMB,####[¥r]

Returns the number of idle(free) memory block.

: #### (0-9999)

This command is only acceptable in Programming Mode.

<COMMAND MEM>

Get Memory Used

Controller → Radio

①MEM[¥r]

Radio → Controller

①MEM,###[¥r]

Returns % memory used.

: ### (0-100%)

This command is only acceptable in Programming Mode.

<COMMAND SCO>

Get/Set Search/Close Call Settings

Controller → Radio

①SCO[¥r]

②SCO, [STP], [MOD], [ATT], [DLY], [SKP], [CODE_SRCH], [SCR], [REP], [MAX_STORE] [¥r]

Radio → Controller

①SCO, [STP], [MOD], [ATT], [DLY], [SKP], [CODE_SRCH], [SCR], [REP], [MAX_STORE] [¥r]

②SCO, OK[¥r]

[STP] : Search Step
(0, 500, 625, 750, , 5000, 10000, 20000)

0	: AUTO
500	: 5k
625	: 6.25k
750	: 7.5k
1000	: 10k
1250	: 12.5k
1500	: 15k
2000	: 20k
2500	: 25k
5000	: 50k

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```

10000 : 100k
[MOD]      : Modulation (AUTO/FM/NFM/AM)
[ATT]      : Attenuation          (0:OFF / 1:ON)
[DLY]      : Delay Time          (0-5)
[SKP]      : Data Skip           (0:OFF / 1:ON)
[CODE_SRCH]: CTCSS/DCS Search    (0:OFF / 1:ON)
[SCR]      : Pager/UHF TV Screen
                (8digit: #####)
                (each # is 0 or 1)
                0 means OFF      |||||+----- Reserved (always 0)
                1 means ON       |||||+----- Reserved (always 0)
                ||||+-----   Reserved (always 0)
                |||+-----     Reserved (always 0)
                ||+-----      Reserved (always 0)
                |+-----       UHF TV
                +-----        Pager
[REP]      : Repeater Find       (0:OFF / 1:ON)
[MAX_STORE]: Max Auto Store      (1-256)
    
```

Get/Set Search/Close Call Settings.
 In set command, only ", " parameters are not changed.
 The set command is aborted if any format error is detected.
 This command is only acceptable in Programming Mode.

<COMMAND GLF>
 Get Global Lockout Freq

Controller → Radio
 ①GLF [¥r]

Radio → Controller
 ①GLF, [FRQ] [¥r]
 GLF, -1 [¥r]

[FRQ] : Lockout Frequency (25.0000-1300.0000)

This command is used to get Global L/O frequency list.
 You should call this command again and again to get all-global
 L/O frequency until the scanner returns -1 .
 -1 means that no more L/O frequency exists.
 This command is only acceptable in Programming Mode.

<COMMAND ULF>
 Unlock Global L/O

Controller → Radio
 ①ULF, [FRQ] [¥r]

Radio → Controller
 ①ULF, OK [¥r]

[FRQ] : Lockout Frequency (25.0000–1300.0000)

This command unlocks a L/O frequency.
The frequency is deleted from L/O list.
This command is only acceptable in Programming Mode.

<COMMAND LOF
Lock Out Frequency

Controller → Radio
①LOF, [FRQ] [¥r]

Radio → Controller
①LOF, OK [¥r]

[FRQ] : Frequency (25.0000–1300.0000)

This command locks out a frequency.
The frequency is added to L/O list.
This command is only acceptable in Programming Mode.

<COMMAND CLC>
Get/Set Close Call Settings

Controller → Radio
①CLC [¥r]
②CLC, [CC_MODE], [CC_OVERRIDE], [ALT], [CC_BAND] [¥r]

Radio → Controller
①CLC, [CC_MODE], [CC_OVERRIDE], [ALT], [CC_BAND] [¥r]
②CLC, OK [¥r]

[CC_MODE] : Mode (0:OFF / 1:CC Pri / 2:CC DND)
[CC_OVERRIDE] : Override (1:ON / 0:OFF)
[ALT] : Alert (N:NONE / B:BEEP / L:LIGHT / A:BEEP+LIGHT)
[CC_BAND] : Band (5digit ##### # means 0 or 1)
(1:ON / 0:OFF)
Band Order : VHF LOW / AIR BAND / VHF HIGH / UHF / 800MHz+

Get/Set Close Call Settings.
In set command, only “,” parameters are not changed.
The set command is aborted if any format error is detected.
This command is only acceptable in Programming Mode.

<COMMAND CSG>
Get/Set Custom Search Group

Controller → Radio
①CSG [¥r]
②CSG, ##### [¥r] : Status of Each Search Range

Radio → Controller

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①CSG, ##### [¥r]

②CSG, OK [¥r]

: ##### (each # is 0 or 1)

0 : valid

1 : invalid

The Order of Range is as same as LCD Icon.

Get/Set current status of the custom search range.

This command is only acceptable in Programming Mode.

=====

<COMMAND CSP>

Get/Set Custom Search Settings

=====

Controller → Radio

①CSP, [SRCH_INDEX] [¥r]

②CSP, [SRCH_INDEX], [NAME], [LIMIT_L], [LIMIT_H], [STP], [MOD], [ATT], [DLY], [SKP] [¥r]

Radio → Controller

①CSP, [NAME], [LIMIT_L], [LIMIT_H], [STP], [MOD], [ATT], [DLY], [SKP] [¥r]

②CSP, OK [¥r]

[SRCH_INDEX] : Index (1-9, 0 means 10)
[NAME] : Name (max. 16char)
[LIMIT_L] : Lower Limit Frequency (25.0000-1300.0000)
[LIMIT_H] : Upper Limit Frequency (25.0000-1300.0000)
[STP] : Search Step
(0, 500, 625, 750, , 5000, 10000, 20000)
0 : AUTO
500 : 5k
625 : 6.25k
750 : 7.5k
1000 : 10k
1250 : 12.5k
1500 : 15k
2000 : 20k
2500 : 25k
5000 : 50k
10000 : 100k
[MOD] : Modulation (AUTO/FM/NFM/AM)
[ATT] : Attenuation (0:OFF / 1:ON)
[DLY] : Delay Time (0-5)
[SKP] : Data Skip (0:OFF / 1:ON)

Get/Set Custom Search Settings.

In set command, only ", " parameters are not changed.

The set command is aborted if any format error is detected.

This command is only acceptable in Programming Mode.

<COMMAND WPR>

Get/Set Weather Priority Settings

Controller → Radio

- ①WPR[¥r]
- ②WPR,#[¥r]

Radio → Controller

- ①WPR,#[¥r]
- ②WPR,OK[¥r]

means Weather Priority Setting
(0:OFF / 1:ON)

Get/Set Weather Priority Settings.
This command is only acceptable in Programming Mode.

<COMMAND SGP>

Get/Set SAME Group Settings

Controller → Radio

- ①SGP, [SAME_INDEX] [¥r]
- ②SGP, [SAME_INDEX], [NAME], [FIPS1], [FIPS2], [FIPS3], [FIPS4], [FIPS5], [FIPS6], [FIPS7], [FIPS8] [¥r]

Radio → Controller

- ①SGP, [NAME], [FIPS1], [FIPS2], [FIPS3], [FIPS4], [FIPS5], [FIPS6], [FIPS7], [FIPS8] [¥r]
- ②SGP, OK [¥r]

[SAME_INDEX] : SAME Index (1-5)
[NAME] : SAME Group Name (max.16char)
[FIPS1-8] : FIPS Code (6digit:000000-999999, or ----- means none)

Get/Set SAME Group Settings.
In set command, only “,” parameters are not changed.
The set command is aborted if any format error is detected.
This command is only acceptable in Programming Mode.

<COMMAND WIN>

*Get Window Voltage

Controller → Radio

- ①WIN[¥r]

Radio → Controller

- ①WIN,###, [FRQ] [¥r] : A/D Value (0-255)

Returns current window voltage and its frequency.
The order of the frequency digits is from 1 GHz digit to 100 Hz digit.

This command is for test mode.

<COMMAND BAV>

*Get Battery Voltage

Controller → Radio

①BAV[¥r]

Radio → Controller

①BAV, ###[¥r] : A/D Value (0-255)

Battery Level [V] = (3.3[V] * ###)/255

Returns current battery voltage.

This command is for test mode.

<COMMAND MCP>

Get/Set Motorola Custom Band Plan Setting

Controller → Radio

① MCP,[INDEX][¥r]

② MCP,[INDEX],[LOWER1],[UPPER1],[STEP1],[OFFSET1],[LOWER2],[UPPER2],[STEP2],[OFFSET2],[LOWER3],[UPPER3],[STEP3],[OFFSET3],[LOWER4],[UPPER4],[STEP4],[OFFSET4],[LOWER5],[UPPER5],[STEP5],[OFFSET5],[LOWER6],[UPPER6],[STEP6],[OFFSET6][¥r]

Radio → Controller

① MCP,[LOWER1],[UPPER1],[STEP1],[OFFSET1],[LOWER2],[UPPER2],[STEP2],[OFFSET2],[LOWER3],[UPPER3],[STEP3],[OFFSET3],[LOWER4],[UPPER4],[STEP4],[OFFSET4],[LOWER5],[UPPER5],[STEP5],[OFFSET5],[LOWER6],[UPPER6],[STEP6],[OFFSET6][¥r]

② MCP, OK[¥r]

[INDEX] : System Index
 [LOWER n] : Lower Frequency n
 [UPPER n] : Upper Frequency n
 [STEP n] : Step n

"500": 5.0k	"625": 6.25k	"1000": 10.0k
"1250": 12.5k	"1500": 15.0k	"1875": 18.75k
"2000": 20.0k	"2500": 25.0k	"3000": 30.0k
"3125": 31.25k	"3500": 35.0k	"3750": 37.5k
"4000": 40.0k	"4375": 43.75k	"4500": 45.0k
"5000": 50.0k	"5500": 55.0k	"5625": 56.25k
"6000": 60.0k	"6250": 62.5k	"6500": 65.0k
"6875": 68.75k	"7000": 70.0k	"7500": 75.0k
"8000": 80.0k	"8125": 81.25k	"8500": 85.0k
"8750": 87.5k	"9000": 90.0k	"9375": 93.75k
"9500": 95.0k	"10000": 100.0k	

[OFFSETn] Offset n (-1023 to 1023)

Get/Sets Band Plan Setting for MOT 800MHz Custom system.

In set command, if only "," parameters are send the Band Plan setting of the system will not changed.

The set command is aborted if any format error is detected.

This command is only acceptable in Programming Mode.

CTCSS/DCS CODE LIST

NONE / SEARCH

MODE	CODE	MODE	CODE
NONE	0	SEARCH	127

CTCSS

MODE	CODE	MODE	CODE	MODE	CODE
CTCSS 67.0Hz	64	CTCSS 118.8Hz	81	CTCSS 183.5Hz	98
CTCSS 69.3Hz	65	CTCSS 123.0Hz	82	CTCSS 186.2Hz	99
CTCSS 71.9Hz	66	CTCSS 127.3Hz	83	CTCSS 189.9Hz	100
CTCSS 74.4Hz	67	CTCSS 131.8Hz	84	CTCSS 192.8Hz	101
CTCSS 77.0Hz	68	CTCSS 136.5Hz	85	CTCSS 196.6Hz	102
CTCSS 79.7Hz	69	CTCSS 141.3Hz	86	CTCSS 199.5Hz	103
CTCSS 82.5Hz	70	CTCSS 146.2Hz	87	CTCSS 203.5Hz	104
CTCSS 85.4Hz	71	CTCSS 151.4Hz	88	CTCSS 206.5Hz	105
CTCSS 88.5Hz	72	CTCSS 156.7Hz	89	CTCSS 210.7Hz	106
CTCSS 91.5Hz	73	CTCSS 159.8Hz	90	CTCSS 218.1Hz	107
CTCSS 94.8Hz	74	CTCSS 162.2Hz	91	CTCSS 225.7Hz	108
CTCSS 97.4Hz	75	CTCSS 165.5Hz	92	CTCSS 229.1Hz	109
CTCSS 100.0Hz	76	CTCSS 167.9Hz	93	CTCSS 233.6Hz	110
CTCSS 103.5Hz	77	CTCSS 171.3Hz	94	CTCSS 241.8Hz	111
CTCSS 107.2Hz	78	CTCSS 173.8Hz	95	CTCSS 250.3Hz	112
CTCSS 110.9Hz	79	CTCSS 177.3Hz	96	CTCSS 254.1Hz	113
CTCSS 114.8Hz	80	CTCSS 179.9Hz	97		

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DCS

MODE	CODE	MODE	CODE	MODE	CODE
DCS 023	128	DCS 223	163	DCS 445	198
DCS 025	129	DCS 225	164	DCS 446	199
DCS 026	130	DCS 226	165	DCS 452	200
DCS 031	131	DCS 243	166	DCS 454	201
DCS 032	132	DCS 244	167	DCS 455	202
DCS 036	133	DCS 245	168	DCS 462	203
DCS 043	134	DCS 246	169	DCS 464	204
DCS 047	135	DCS 251	170	DCS 465	205
DCS 051	136	DCS 252	171	DCS 466	206
DCS 053	137	DCS 255	172	DCS 503	207
DCS 054	138	DCS 261	173	DCS 506	208
DCS 065	139	DCS 263	174	DCS 516	209
DCS 071	140	DCS 265	175	DCS 523	210
DCS 072	141	DCS 266	176	DCS 526	211
DCS 073	142	DCS 271	177	DCS 532	212
DCS 074	143	DCS 274	178	DCS 546	213
DCS 114	144	DCS 306	179	DCS 565	214
DCS 115	145	DCS 311	180	DCS 606	215
DCS 116	146	DCS 315	181	DCS 612	216
DCS 122	147	DCS 325	182	DCS 624	217
DCS 125	148	DCS 331	183	DCS 627	218
DCS 131	149	DCS 332	184	DCS 631	219
DCS 132	150	DCS 343	185	DCS 632	220
DCS 134	151	DCS 346	186	DCS 654	221
DCS 143	152	DCS 351	187	DCS 662	222
DCS 145	153	DCS 356	188	DCS 664	223
DCS 152	154	DCS 364	189	DCS 703	224
DCS 155	155	DCS 365	190	DCS 712	225
DCS 156	156	DCS 371	191	DCS 723	226
DCS 162	157	DCS 411	192	DCS 731	227
DCS 165	158	DCS 412	193	DCS 732	228
DCS 172	159	DCS 413	194	DCS 734	229
DCS 174	160	DCS 423	195	DCS 743	230
DCS 205	161	DCS 431	196	DCS 754	231
DCS 212	162	DCS 432	197		