7.13 REMOTE COMMAND

【 Remote Communication Format 】

BPS rate	: 4800/9600/19200/38400/57600/115200 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 45000).

9. [FRQ], [BASEx] and [LIMIT_x] are frequency format.
   It is showed by 8 digit 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.

12. [LATITUDE] shows North or South Latitude.
    The data shows “DDMMSSssL” at DMS Format.

DD: Degree (00 - 90: Double figure fixation)
MM: Minute (00 - 59: Double figure fixation)
SSss: Second (SS: 00 - 59: Double figure fixation)
(ss: 00 - 99: Double figure fixation)
L: Bearing (N: North / S: South)
ex) “North Latitude 40°42’51.12” shows “40425112N”.

13. [LONGITUDE] shows West or East Longitude.
The data shows “DDDMMSSssL” at DMS Format.
DDD: Degree (000 - 180: Triple figure fixation)
MM: Minute (00 - 59: Double figure fixation)
SSss: Second (SS: 00 - 59: Double figure fixation)
(ss: 00 - 99: Double figure fixation)
L: Bearing (W: West / E: East)
ex) “West Longitude 74°00’23.05” shows “074002305W”.

Remote Command List

No.	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.		QSC	Set current frequency and get reception status	
6.		CSC	Go to Custom search and get reception status	
7.		PWR	Get RSSI Level	
8.		STS	Get Current Status	
9.		GLG	Get Reception Status	
10.		JPM	Jump Mode	
11.		JNT	Jump to Number Tag	
12.		MNU	Menu Mode	
13.	System Information	MDL	Get Model Info	
14.		VER	Get Firmware Version	
15.	Program Control Mode	PRG	Enter Program Mode	
16.		EPG	Exit Program Mode	
17.	System Settings	BLT	Get/Set Backlight	O
18.		BSV	Get/Set Battery Info	O
19.		COM	Get/Set COM port setting	O
20.		CLR	Clear All Memory	O
21.		KBP	Get/Set Key Beep and setting	O
22.		OMS	Get/Set Opening Message	O
23.		PRI	Get/Set Priority Mode	O
24.		AGV	Get/Set Auto Gain Control	O
25.		SCT	Get System Count	O
26.	Scan Settings	SIH	Get System Index Head	O
27.		SIT	Get System Index Tail	O
28.		QSL	Get/Set System/Site Quick Lockout	O
29.		QGL	Get/Set Group Quick Lockout	O
30.		CSY	Create System	O
31.		DSY	Delete System	O
32.		SIN	Get/Set System Info	O
33.		TRN	Get/Set Trunk Info	O
34.		AST	Append Site	O

35.		SIF	Get/Set Site Info	O
36.		MCP	Get/Set Motorola Custom Band Plan	O
37.		ABP	Get/Set APCO-P25 Band Plan	O
38.		TFQ	Get/Set Trunk Frequency Info	O
39.		AGC	Append Channel Group	O
40.		AGT	Append TalkGroup ID Group	O
41.		DGR	Delete Group / Site	O
42.		GIN	Get/Set Group Info	O
43.		ACC	Append Channel / Trunk Frequency	O
44.		ACT	Append TalkGroup ID	O
45.		DCH	Delete Channel	O
46.		CIN	Get/Set Channel Info	O
47.		TIN	Get/Set TalkGroup ID Info	O
48.		GLI	Get Lockout TalkGroup ID (for Rvw L/O ID)	O
49.		SLI	Get Search L/O TalkGroup ID	O
50.		ULI	Unlock TalkGroup ID (for Rvw L/O ID)	O
51.		LOI	Lockout ID (TalkGroup ID)	O
52.		REV	Get Rev Index	O
53.		FWD	Get Fwd Index	O
54.		RMB	Get Remains of Memory Block	O
55.		MEM	Get Memory Used	O
56.	Location Setting	LIH	Get Location Alert System Index Head	O
57.		LIT	Get Location Alert System Index Tail	O
58.		CLA	Create Location Alert System	O
59.		DLA	Delete Location Alert System	O
60.		LIN	Get/Set Location Alert System Info	O
61.	Search / Close Call Settings	SCO	Get/Set Search/Close Call Settings	O
62.		BBS	Get/Set Broadcast Screen Band Settings	O
63.		SHK	Get / Set Search Key Settings	O
64.		GLF	Get Global Lockout Freq	O
65.		ULF	Unlock Global L/O	O
66.		LOF	Lock Out Frequency	O
67.		CLC	Get/Set Close Call Settings	O
68.	Service Search Settings	SSP	Get/Set Service Search Settings	O
69.	Custom Search Settings	CSG	Get/Set Custom Search Group	O
70.		CBP	Get/Set C-Ch Only Custom search MOT Band Plan	O
71.		CSP	Get/Set Custom Search Settings	O
72.	Weather Settings	WXS	Get/Set Weather Settings	O
73.		SGP	Get/Set SAME Group Settings	O
74.	Tone-Out Setting	TON	Get/Set Tone-Out Settings	O
75.	LCD Contrast Settings	CNT	Get/Set LCD Contrast Settings	O
76.	Scanner Option Settings	SCN	Get/Set Scanner Option Settings	O
77.	Volume Level Settings	VOL	Get/Set Volume Level Settings	
78.	Squelch Level Settings	SQL	Get/Set Squelch Level Settings	
79.	APCO Data Settings	P25	Get/Set APCO Data Settings	
80.	Default Band Coverage Settings	DBC	Get/Set Default Band Coverage Settings	O
81.	GPS Settings	GDO	Get/Set GPS Format	O
82.	Band Scope Settings	BSP	Get/Set Band Scope Settings	O
83.	IF exchange list Settings	GIE	Get Global IF exchange Frequency	O

84.		CIE	Clear IF exchange Frequency	O
85.		RIE	Register IF exchange Frequency	O
86.	TEST	BAV	Get Battery Voltage	
87.		WIN	Get Window Voltage	

<COMMAND GID>
Get Current TGID Status

Controller → Radio
①GID[\r]
Radio → Controller
①GID,[SITE_TYPE],[TGID],[ID_SRCH_MODE],[NAME1],[NAME2],[NAME3][\r]

[SITE_TYPE] : Site Type
CNV : CONVENTIONAL system site
MOT : MOTOROLA system site
EDC : EDACS Narrow / Wide system site
EDS : EDACS SCAT system site
LTR : LTR system site
P25S : P25 STANDARD (Phase 1/Phase 2/X2-TDMA)
P25F : P25 One Frequency TRUNK system site
TRBO : MotoTRBO system site
DMR : DMR One Frequency Trunk system site

[TGID] : TGID
[ID_SRCH_MODE] : ID SCAN / ID SEARCH Mode
(0:ID SCAN Mode / 1:ID SEARCH Mode)
[NAME1] : SYSTEM / SITE NAME (Alpha Tag)
[NAME2] : GROUP NAME (Alpha Tag)
[NAME3] : TGID NAME (Alpha Tag)

FUNCTION
This command return TGID currently displayed on LCD.
If you get the TGID once, the scanner returns ,,,,,[\r] until next reception.

NOTE:
This command return ,,,,,[\r], when TGID is not displayed.

<COMMAND KEY>
Push KEY

Controller → Radio
① KEY,[KEY_CODE],[KEY_MODE][\r]
Radio → Controller
① KEY,OK[\r]

[KEY_CODE] M : Menu
F : Func
H : Hold
S : Scan/srch
L : L/O
1 : 1
2 : 2
3 : 3
4 : 4
5 : 5
6 : 6
7 : 7
8 : 8
9 : 9
0 : 0
.(dot) : ./no/pri
E : E/yes/gps
> : VFO RIGHT * Set "P" to KEY_MODE.
< : VFO LEFT * Set "P" to KEY_MODE.
^ : VFO PUSH
P : POWER/LIGHT/LOCK

[KEY_MODE] P : Press

L : Long Press
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,P[\r] : Hold F KEY
← OK[\r]
→ KEY,S,P[\r] : Press Scan KEY (F + Scan KEY operation)
← OK[\r]
→ KEY,F,P[\r] : Release F KEY
→ OK[\r]
Ex.3) Press and Hold L/O KEY
→ KEY,L,L[\r]
← OK[\r]

The status of KEY HOLD does time-out in 10 seconds after having received the command of KEY HOLD when there is not communication.(For example, “KEY,F,H”.)

<COMMAND POF>
Power OFF

Controller → Radio
① POF[\r]
Radio → Controller
① POF,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
①QSH,[FRQ],[RSV],[MOD],[ATT],[DLY],[RSV],[CODE_SRCH],[BSC],[REP],[RSV],[AGC_ANALOG],[AGC_DIGITAL],[P25WAITING][\r]
Radio → Controller
① QSH,OK[\r] or QSH,NG[\r]

[FRQ] : Frequency (The right frequency)
[MOD] : Modulation (AUTO/AM/FM/NFM/WFM/FMB)
[ATT] : Attenuation (0:OFF / 1:ON)
[DLY] : Delay Time (-10,-5,-2,0,1,2,5,10,30)
[CODE_SRCH] : CTCSS/DCS/P25 NAC Search
(0:OFF / 1: CTCSS/DCS / 2: P25 NAC/Color Code Search)
[BSC] : Broadcast Screen (16digit: ########･･#)
(each # is 0 or 1)
0 means OFF
1 means ON

```
|||||||||･･+- Band10
|||||||||      :
|||||||+----- Band 2
||||||+------ Band 1
|||||+------- Reserve
||||+-------- NOAA WX
|||+--------- VHF TV
||+---------- UHF TV
|+----------- FM
+------------ Pager
```

[REP] : Repeater Find (0:OFF / 1:ON)
[AGC_ANALOG] : AGC Setting for Analog Audio (0:OFF / 1:ON)
[AGC_DIGITAL] : AGC Setting for Digital Audio (0:OFF / 1:ON)
[P25WAITING] : Digital Waiting time
(0,100,200,300, ... , 900,1000)

0 : 0ms
100 : 100ms
200 : 200ms
300 : 300ms
400 : 400ms
500 : 500ms
600 : 600ms
700 : 700ms
800 : 800ms
900 : 900ms
1000 : 1000ms

[RSV] : Reserve Parameter * This is always only ",".

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

FUNCTION

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

Note:

Even when only [FRQ] parameter is set, this command will work.

<COMMAND QSC>

Set current frequency and get reception status

Controller → Radio

① QSC,[FRQ],[RSV],[MOD],[ATT],[DLY],[RSV],[CODE_SRCH],[BSC],[REP],[RSV] ,[AGC_ANALOG],[AGC_DIGITAL],[P25WAITING] [\r]

Radio → Controller

① QSC,[RSSI],[FRQ],[SQL][\r] or QSC,NG[\r]

[FRQ] : Frequency (The right frequency)
[MOD] : Modulation (AUTO/AM/FM/NFM/WFM/FMB)
[ATT] : Attenuation (0:OFF / 1:ON)
[DLY] : Delay Time (-10,-5,-2,0,1,2,5,10,30)
[CODE_SRCH] : CTCSS/DCS Search
(0:OFF / 1: CTCSS/DCS Search / 2: P25 NAC/Color Code Search)
[BSC] : Broadcast Screen (16digit: ########・・#)
(each # is 0 or 1)
0 means OFF
1 means ON

```
|||||||||・・+- Band10
|||||||||       :
||||||+------ Band 2
|||||+------- Band 1
||||+-------- Reserve
|||+--------- NOAA WX
||+---------- VHF TV
|+----------- UHF TV
+------------ FM
------------- Pager
```

[REP] : Repeater Find (0:OFF / 1:ON)
[RSSI] : RSSI A/D Value (0-1023)
[SQL] : Squelch Status (0:CLOSE / 1:OPEN)
[AGC_ANALOG] : AGC Setting for Analog Audio(0:OFF / 1:ON)
[AGC_DIGITAL] : AGC Setting for Digital Audio (0:OFF / 1:ON)
[P25WAITING] : Digital Waiting time
(0,100,200,300, ... , 900,1000)

0 : 0ms
100 : 100ms
200 : 200ms
300 : 300ms

400 : 400ms
500 : 500ms
600 : 600ms
700 : 700ms
800 : 800ms
900 : 900ms
1000 : 1000ms

[RSV] : Reserve Parameter * This is always only ",".

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

FUNCTION

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

<COMMAND CSC>
Go to Custom search and get reception status

Controller → Radio

① CSC,ON[\r]
② CSC,OFF[\r]

Radio → Controller

① CSC,[RSSI],[FRQ],[SQL][\r]
CSC,[RSSI],[FRQ],[SQL][\r]
CSC,[RSSI],[FRQ],[SQL][\r]
....
....
....
CSC,[RSSI],[FRQ],[SQL][\r]

② CSC,OK[\r]

[RSSI] : RSSI A/D Value (0-1023)
[FRQ] : Current Frequency
[SQL] : Squelch Status (0: CLOSE / 1: OPEN)

This command outputs custom search status of each frequency sequentially.
Use CSC, OFF command to stop the output.

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

<COMMAND PWR>
*Get RSSI Level

Controller → Radio
① PWR[\r]
Radio → Controller
① PWR,[RSSI],[FRQ][\r]

[RSSI] : RSSI A/D Value (0-1023)
[FRQ] : Current Frequency

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

<COMMAND STS>
Get Current Status

Controller → Radio
① STS[\r]
Radio → Controller
① STS,[DSP_FORM],[L1_CHAR],[L1_MODE],[L2_CHAR],[L2_MODE],[L3_CHAR],[L3_MODE],
[L4_CHAR],[L4_MODE],・・・・,[L8_CHAR],[L8_MODE],[SQL],[MUT],[BAT],[WAT],[RSV],
[RSV],[SIG_LVL],[BK_COLOR],[BK_DIMMER][\r]

[DSP_FORM]	: Display Form (each # is 0 or 1)	(4 - 8dight: ########) 0 means Small Font / 1 means Large Font.
[L1_CHAR]	: Line1 Characters 16char (fixed length)	
[L1_MODE]	: Line1 Display Mode 16char	
[L2_CHAR]	: Line2 Characters 16char (fixed length)	
[L2_MODE]	: Line2 Display Mode 16char	
[L3_CHAR]	: Line3 Characters 16char (fixed length)	
[L3_MODE]	: Line3 Display Mode 16char	
[L4_CHAR]	: Line4 Characters 16char (fixed length)	
[L4_MODE]	: Line4 Display Mode 16char	
	:	
[L8_CHAR]	: Line8 Characters 16char (fixed length)	
[L8_MODE]	: Line8 Display Mode 16char	
[SQL]	: Squelch Status	(0: CLOSE / 1: OPEN)
[MUT]	: Mute Status	(0: OFF / 1: ON)
[RSV]	: Reserve Parameter	*This is always only “0”.
[BAT]	: Battery Low Status	(0: No Alert / 1: Alert)
[WAT]	: Weather Alert Status	(0: No Alert / 1: Alert / $$$: Alert SAME CODE)
[SIG_LVL]	: Signal Level	(0 – 5)
[BK_COLOR]	: Backlight Color	(Always RED)
[BK_DIMMER]	: Backlight Dimmer	(0: OFF / 1: Low / 2: Middle / 3: High)

NOTE: Display Mode for Line1 – Line8
(space): NORMAL CHAR, *: REVERSE CHAR
_ (Under bar): Underline
If all 16chars are normal, only "," is sent.

The number of [Lx_CHAR] and [Lx_MODE] depend on Display Form.

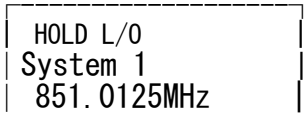
Ex. 1)

Squelch Status : OPEN
Mute Status : OFF
Battery Low Status : No Alert
Weather Alert Status : No Alert

→ STS[\r]
← 1111,
-- M E N U -- , ← [L1_CHAR]
_____, ← [L1_MODE]
Program System , ← [L2_CHAR]
**********, ← [L2_MODE]
Program Location, ← [L3_CHAR]
, ← [L3_MODE]
Srch/CloCall Opt, ← [L4_CHAR]
, ← [L4_MODE]
1,0,0,0,,,0,RED,,[\r]

Returns current scanner status.

Ex. 2)



Squelch Status : CLOSE
Mute Status : ON

```
┌──────────────────┐
│ P NFM ATT        │  Battery Low Status   : No Alert
│ S1:    5         │  Weather Alert Status : Alert
│ GRP 2         WX │
└──────────────────┘
```

```
→  STS[\r]
←  011000,
     HOLD L/O       ,     ← [L1_CHAR]
     ,                    ← [L1_MODE]
     SYSTEM 1       ,     ← [L2_CHAR]
     ,                    ← [L2_MODE]
     851.0125MHz    ,     ← [L3_CHAR]
     ,                    ← [L3_MODE]
     P NFM ATT      ,     ← [L4_CHAR]
     ,                    ← [L4_MODE]
     S1:    5       ,     ← [L5_CHAR]
     ,                    ← [L5_MODE]
     GRP 2        WX,     ← [L6_CHAR]
     ,                    ← [L6_MODE]
     0,1,0,0,,,1,RED,,[\r]
```

Returns current scanner status.

<COMMAND GLG>
Get Reception Status

Controller → Radio
① GLG[\r]
Radio → Controller
① GLG,[FRQ/TGID],[MOD],[ATT],[CTCSS/DCS],[NAME1],[NAME2],[NAME3],[SQL],[MUT],[SYS_TAG],[CHAN_TAG],[P25NAC][\r]
GLG,,,,,,,,,,[\r]

[FRQ/TGID]	: Frequency or TGID	
[MOD]	: Modulation	(AM/FM/NFM/WFM/FMB)
[ATT]	: Attenuation	(0: OFF / 1: ON)
[CTCSS/DCS]	: CTCSS/DCS Status (0-231)	
	*See *CTCSS/DCS* CODE LIST about the details of this code.	
[NAME1]	: System, Site or Search Name	
[NAME2]	: Group Name	
[NAME3]	: Channel Name	
[SQL]	: Squelch Status	(0: CLOSE / 1: OPEN)
[MUT]	: Mute Status	(0: OFF / 1: ON)
[SYS_TAG]	: Current system number tag	(0-999/NONE)
[CHAN_TAG]	: Current channel number tag	(0-999/NONE)
[P25NAC]	: P25 NAC/Color Code Status	
	(0-FFF:	NAC
	1000-100F:	Color Code
	NONE:	NAC/Color Code None)

Get reception status.
The Scanner returns GLG,,,,,,,,,[\r] until it detects a frequency or a TGID.

<COMMAND JPM>
Jump Mode

Controller → Radio
① JPM,[JUMP_MODE],[INDEX][\r]
Radio → Controller
① JPM,OK[\r]

[JUMP_MODE]	:	SCN_MODE	Scan mode
		SVC_MODE	Service Search mode
		CTM_MODE	Custom Search mode
		CC_MODE	Close Call Only mode

		WX_MODE	WX SCAN mode
		FTO_MODE	Tone-Out mode
[INDEX]	:	SCN_MODE	Channel Index
		SVC_MODE	PublicSafety
			News
			HAM
			Marine
			Railroad
			Air
			CB
			FRS/GMRS/MURS
			Racing
			FM
			Special
			Military
		CTM_MODE	RESERVE
		CC_MODE	RESERVE
		WX_MODE	NORMAL
			A_ONLY
			SAME_1
			SAME_2
			SAME_3
			SAME_4
			SAME_5
			ALL_FIPS
		FTO_MODE	RESERVE

Note) Scanner returns NG in the state that the mode switch cannot be done.

<COMMAND MNU>
Menu Mode

Controller → Radio
① MNU,[MENU_INDEX][\r]
Radio → Controller
① MNU,OK[\r]

[MENU_INDEX]	:	SVC_MENU	: Service Search Select Menu
		WX_MENU	: WX Select Menu
		CCBAND_MENU	: Close Call Band Filter Menu
		SCR_OPT_MENU	: Broadcast Screen Band Menu
		GL_LIST_MENU	: Search Global Lockout List Review Menu
		SETTING_MENU	: Setting Menu

Note) Scanner returns NG in the state that the mode switch cannot be done.

<COMMAND JNT>
Jump to Number Tag

Controller → Radio
① JNT,[SYS_TAG],[CHAN_TAG][\r]
Radio → Controller
① JNT,OK[\r]

[SYS_TAG]	:	System Number Tag	(0-999/NONE)
[CHAN_TAG]	:	Channel Number Tag	(0-999/NONE)

When both [SYS_TAG] and [CHAN_TAG] are set as blank, scanner returns error.
When [SYS_TAG] is set as blank, [CHAN_TAG] is set with a number tag, scanner jump to the channel number tag in current system.
When [SYS_TAG] is set with a number tag, [CHAN_TAG] is set as blank, scanner jump to the first channel of the system number tag.

<COMMAND MDL>
Get Model Info

Controller → Radio
① MDL[\r]
Radio → Controller
① MDL,BCD325P2[\r]

Returns Model Information.

<COMMAND VER>
Get Firmware Version

Controller → Radio
① VER[\r]
Radio → Controller
① VER,Version 1.00.00[\r]

Returns Firmware Version.

<COMMAND PRG>
Enter Program Mode

Controller → Radio
① PRG[\r]
Radio → Controller
① PRG,OK[\r]
② PRG,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 first line and "Keypad Lock" on second line in Program Mode.

<COMMAND EPG>
Exit Program Mode

Controller → Radio
① EPG[\r]
Radio → Controller
① EPG,OK[\r]

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

<COMMAND BLT>
Get/Set Backlight

Controller → Radio
① BLT[\r]
② BLT, [EVNT], [RSV], [DIMMER] [\r]
Radio → Controller
① BLT, [EVNT], [RSV], [DIMMER] [\r]
② BLT,OK[\r]

[EVENT]
IF: INFINITE
10: 10sec
30: 30sec
KY: KEYPRESS

SQ: SQUELCH
[DIMMER]: Backlight Dimmer (1: Low / 2: Middle / 3: High)

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

<COMMAND BSV >
Get/Set Battery Info

Controller → Radio
① BSV [\r]
② BSV,[BAT_SAVE],[CHARGE_TIME][\r]

Radio → Controller
① BSV, [BAT_SAVE],[CHARGE_TIME] [\r]
② BSV,OK[\r]
[BAT_SAVE] Battery Save (0: OFF / 1: ON)
[CHARGE_TIME] Battery Charge Time (1-16)

< COMMAND COM >
Get/Set COM port setting

Controller → Radio
① COM,[/r]
② COM,[BAUDRATE],[RSV][/r]

Radio → Controller
① COM,[BAUDRATE],[RSV][/r]
② COM,OK[/r]

[BAUDRATE] :
OFF : OFF
4800 : 4800bps
9600 : 9600bps
19200 : 19200bps
38400 : 38400bps
57600 : 57600bps
115200: 115200bps

Note:
When receive “COM,OK”, next command should not be send in 2 second.
Only PC Control (Baud Rate) does not become an initial-setting value.

<COMMAND CLR>
Clear All Memory

Controller → Radio
① CLR[\r]
Radio → Controller
① CLR,OK[\r]

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

Note:
It takes dozens of seconds.
Only PC Control (Baud Rate) does not become an initial-setting value.

<COMMAND KBP>
Get/Set Key Beep and setting

Controller → Radio
① KBP[\r]
② KBP,[LEVEL],[LOCK],[SAFE][\r]
Radio → Controller
① KBP,[LEVEL],[LOCK],[SAFE][\r]
② KBP,OK[\r]

[LEVEL] : Beep Level (0: Auto / 1-15 / 99: OFF)
[LOCK] : Key Lock status (0: OFF / 1: ON)
[SAFE] : Key Safe status (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
① OMS[\r]
② OMS,[L1_CHAR],[L2_CHAR],[L3_CHAR],[L4_CHAR][\r]
Radio → Controller
① OMS,[L1_CHAR],[L2_CHAR],[L3_CHAR],[L4_CHAR][\r]
② OMS,OK[\r]

[L1_CHAR] : Line1 Characters (max.16char)
[L2_CHAR] : Line2 Characters (max.16char)
[L3_CHAR] : Line3 Characters (max.16char)
[L4_CHAR] : Line4 Characters (max.16char)

If only space code is set in character area, the message returns default message.
This command is only acceptable in Programming Mode.

<COMMAND PRI>
Get/Set Priority Mode

Controller → Radio
① PRI[\r] : Get Priority Mode Setting
② PRI,[PRI_MODE],[MAX_CHAN],[INTERVAL][\r]
Radio → Controller
① PRI,[PRI_MODE],[MAX_CHAN],[INTERVAL][\r]
② PRI,OK[\r]

[PRI_MODE] : Priority Setting (0: OFF / 1: ON / 2: PLUS ON)
[MAX_CHAN] : Priority Scan max channels at once (1-100)
[INTERVAL] : Priority Scan Interval time (1-10)

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

<COMMAND AGV>
Get/Set Auto Gain Control

Controller → Radio
① AGV[\r]
② AGV,[RSV],[RSV],[A_RES],[A_REF],[A_GAIN],[D_RES],[A_GAIN] [\r]
Radio → Controller
① AGV,[RSV],[RSV],[A_RES],[A_REF],[A_GAIN],[D_RES],[A_GAIN] [\r]
② AGV,OK[\r]

[A_RES] : Analog Response Time (-4 - +6)
[A_REF] : Analog Reference Gain (-5 - +5)
[A_GAIN] : Analog Gain Range (0 - 15)
[D_RES] : Digital Response Time (-8 - +8)

[D_GAIN] : Digital Reference Gain (-5 - +5)
[RSV] : Reserve Parameter * This is always only ",".

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

<COMMAND SCT>
Get System Count

Controller → Radio
① SCT[\r]
Radio → Controller
① SCT,###[\r] : ### (0 - 500)

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

<COMMAND SIH>
Get System Index Head

Controller → Radio
① SIH[\r]
Radio → Controller
① SIH,[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
① SIT[\r]
Radio → Controller
① SIT,[SYS_INDEX][\r]

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

<COMMAND QSL>
Get/Set System/Site Quick Lockout

Controller → Radio
① QSL[\r]
② QSL,[PAGE0],[PAGE1],[PAGE2],[PAGE3],[PAGE4],[PAGE5],[PAGE6],[PAGE7],[PAGE8],
[PAGE9][\r]
Radio → Controller
① QSL,[PAGE0],[PAGE1],[PAGE2],[PAGE3],[PAGE4],[PAGE5],[PAGE6],[PAGE7],[PAGE8],
[PAGE9][\r]
② QSL,OK[\r]

[PAGE0] – [PAGE9] : ########## (each # is 0 - 2)
0: Not assigned (Displayed as "-" on the scanner.)
1: On (Displayed as each number on the scanner.)
2: Off (Displayed as "*" on the scanner.)
The Order of Quick Key is as same as LCD Icon.
[PAGE0] : Quick Key 1 - 9, 0
[PAGE1] : Quick Key11 - 19, 10
[PAGE2] : Quick Key21 - 29, 20
[PAGE3] : Quick Key31 - 39, 30
[PAGE4] : Quick Key41 - 49, 40
[PAGE5] : Quick Key51 - 59, 50
[PAGE6] : Quick Key61 - 69, 60

[PAGE7] : Quick Key71 - 79, 70
[PAGE8] : Quick Key81 - 89, 80
[PAGE9] : Quick Key91 - 99, 90

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

<COMMAND QGL>
Get/Set Group Quick Lockout

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

########## (each # is 0 - 2) : Group Quick Key status of [SYS_INDEX].
0: Not assigned (Displayed as "-" on the scanner.)
1: On (Displayed as each number on the scanner.)
2: Off (Displayed as "*" on the scanner.)

The Order of Quick Key is as same as LCD Icon (1 – 9, 0).
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
① CSY,[SYS_TYPE],[PROTECT][\r]
Radio → Controller
① CSY,[SYS_INDEX][\r]

[SYS_TYPE] : System Type
CNV : CONVENTIONAL
MOT : MOTOROLA TYPE
EDC : EDACS Narrow / Wide
EDS : EDACS SCAT
LTR : LTR
P25S : P25 STANDARD (Phase 1/Phase 2/X2-TDMA)
P25F : P25 One Frequency TRUNK
TRBO : MotoTRBO
DMR : DMR One Frequency Trunk

[SYS_INDEX] : The Index of Created System
[PROTECT] : Protect bit Status (0: OFF / 1: ON)

Creates a system and return 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
① DSY,[SYS_INDEX][\r]
Radio → Controller
① DSY,OK[\r]

[SYS_INDEX] : System Index

This command deletes a System.
This command is only acceptable in Programming Mode.

<COMMAND SIN>
Get/Set System Info

Controller → Radio
① SIN,[INDEX][\r]
② SIN,[INDEX],[NAME],[QUICK_KEY],[HLD],[LOUT],[DLY],[RSV],[RSV],[RSV],[RSV],
[RSV],[START_KEY],[RSV],[RSV],[RSV],[RSV],[RSV],[RSV],
[NUMBER_TAG],[AGC_ANALOG],[AGC_DIGITAL],[P25WAITING][\r]

Radio → Controller
① SIN,[SYS_TYPE],[NAME],[QUICK_KEY],[HLD],[LOUT],[DLY],[RSV],[RSV],[RSV],[RSV],
[RSV],[REV_INDEX],[FWD_INDEX],[CHN_GRP_HEAD],[CHN_GRP_TAIL],
[SEQ_NO],[START_KEY],[RSV],[RSV],[RSV],[RSV],[RSV], [NUMBER_TAG],
[AGC_ANALOG],[AGC_DIGITAL],[P25WAITING],[PROTECT],[RSV][\r]
② SIN,OK[\r]

[INDEX]	: System Index	
[SYS_TYPE]	: System Type	
	CNV	: CONVENTIONAL
	MOT	: MOTOROLA TYPE
	EDC	: EDACS Narrow / Wide
	EDS	: EDACS SCAT
	LTR	: LTR
	P25S	: P25 STANDARD (Phase 1/Phase 2/X2-TDMA)
	P25F	: P25 One Frequency TRUNK
	TRBO	: MotoTRBO
	DMR	: DMR One Frequency Trunk
[NAME]	: Name	(max.16char)
[QUICK_KEY]	: Quick Key	(0-99/.(dot) means none)
[HLD]	: System Hold Time	(0-255)
[LOUT]	: Lockout	(0: Unlocked / 1: Lockout)
[DLY]	: Delay Time	(-10,-5,-2,0,1,2,5,10,30)
[REV_INDEX]	: Reverse System Index of the Scan Setting	
[FWD_INDEX]	: Forward System Index of the Scan Setting	
[CHN_GRP_HEAD]	: Channel Group Index Head of the conventional system or Site Index Head of the Trunked System	
[CHN_GRP_TAIL]	: Channel Group Index Tail of the conventional system or Site Index Tail of the Trunked System	
[SEQ_NO]	: System Sequence Number	(1 - 500)
[START_KEY]	: Startup Configuration Key	(0-9/.(dot) means none)
[NUMBER_TAG]	: Number tag	(0-999 / NONE)
[AGC_ANALOG]	: AGC Setting for Analog Audio	(0: OFF / 1: ON)
[AGC_DIGITAL]	: AGC Setting for Digital Audio	(0: OFF / 1: ON)
[P25WAITING]	: Digital Waiting time	(0,100,200, ... , 900,1000)
[PROTECT]	: Protect bit Status	(0: OFF / 1: ON)
[RSV]	: Reserve Parameter	* This is always only ",".

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.
When the system protect bit is ON, except [SYS_TYPE], [NAME], [REV_INDEX], [FWD_INDEX], [CHN_GRP_HEAD], [CHN_GRP_TAIL], other parameters will be send as a reserve parameter in the Radio -> Controller command.

<COMMAND TRN>
Get/Set Trunk Info

Controller → Radio
① TRN,[INDEX][\r]
② TRN,[INDEX],[ID_SEARCH],[S_BIT],[END_CODE],[AFS],[RSV],[RSV],[EMG],[EMGL],
[FMAP],[CTM_FMAP],[RSV],[RSV],[RSV],[RSV],[RSV],[RSV],[RSV],[RSV],[RSV],[RSV],
[MOT_ID],[EMG_COLOR],[EMG_PATTERN],[P25NAC],[PRI_ID_SCAN][\r]

Radio → Controller
① TRN,[ID_SEARCH],[S_BIT],[END_CODE],[AFS],[RSV],[RSV],[EMG],[EMGL],[FMAP],
[CTM_FMAP],[RSV],[RSV],[RSV],[RSV],[RSV],[RSV],[RSV],[RSV],[RSV],[RSV],
[TGID_GRP_HEAD],[TGID_GRP_TAIL],[ID_LOUT_GRP_HEAD],[ID_LOUT_GRP_TAIL],
[MOT_ID],[EMG_COLOR],[EMG_PATTERN],[P25NAC],[PRI_ID_SCAN][\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:Analog, 2:Analog and Digital)
[AFS]	: EDACS ID Format (0: Decimal / 1: AFS)
[EMG]	: Emergency Alert (0: Ignore / 1-9: Alert)
[EMGL]	: Emergency Alert Level (0: OFF / 1 - 15)
[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 5: Size Code 5 A: Size Code 10 1: Size Code 1 6: Size Code 6 B: Size Code 11 2: Size Code 2 7: Size Code 7 C: Size Code 12 3: Size Code 3 8: Size Code 8 D: Size Code 13 4: Size Code 4 9: Size Code 9 E: Size Code 14
[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
[MOT_ID]	: Motorola/P25 ID Format (0: Decimal / 1: HEX)
[EMG_COLOR]	: Emergency Alert Light color (OFF, RED)
[EMG_PATTERN]	: Emergency Alert Light Pattern (0: ON / 1: Slow / 2: Fast)
[P25NAC]	: P25 NAC/Color Code Status (0-FFF: NAC 1000-100F: Color Code SRCH: NAC/Color Code Search)
[PRI_ID_SCAN]	: Priority ID Scan (0: OFF / 1: ON)
[RSV]	: Reserve Parameter * This is always only ",".

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.
When the system protect bit is ON, except [TGID_GRP_HEAD], [TGID_GRP_TAIL], [ID_LOUT_GRP_HEAD], [ID_LOUT_GRP_TAIL], other parameters will be send as a reserve parameter in the Radio -> Controller command.
This command is only acceptable in Programming Mode.

<COMMAND AST>
Append Site

Controller → Radio
① AST,[SYS_INDEX],[RSV][\r]

Radio → Controller
① AST,[SITE_INDEX][\r]

[SYS_INDEX]	: System Index
[SITE_INDEX]	: Appended Site Index

Append Site to the system.

Returns "-1" if the scanner failed to create because of no resource.
This command is only acceptable in Programming Mode.

<COMMAND SIF>
Get/Set Site Info

Controller → Radio
① SIF,[INDEX][\r]
② SIF,[INDEX],[NAME],[QUICK_KEY],[HLD],[LOUT],[MOD],[ATT],[C-CH],[RSV],[RSV],
[START_KEY],[LATITUDE],[LONGITUDE],[RANGE],[GPS_ENABLE],[RSV],
[MOT_TYPE],[EDACS_TYPE],[P25WAITING],[RSV][\r]

Radio → Controller
① SIF,[RSV],[NAME],[QUICK_KEY],[HLD],[LOUT],[MOD],[ATT],[C-CH],[RSV],
[RSV],[REV_INDEX],[FWD_INDEX],[SYS_INDEX],[CHN_HEAD],[CHN_TAIL],
[SEQ_NO],[START_KEY],[LATITUDE],[LONGITUDE],[RANGE],[GPS_ENABLE],[RSV],
[MOT_TYPE],[EDACS_TYPE],[P25WAITING],[RSV][\r]
② SIF,OK[\r]

[INDEX]	: Site Index	
[NAME]	: Name	(max.16char)
[QUICK_KEY]	: Quick Key	(0-99/.(dot) means none)
[HLD]	: Site Hold Time	(0-255)
[LOUT]	: Lockout	(0: Unlocked / 1: Lockout)
[MOD]	: Modulation	(AUTO/FM/NFM)
[ATT]	: Attenuation	(0: OFF / 1: ON)
[C-CH]	: Control Channel Only	* This is always only 1: ON
[REV_INDEX]	: Reverse Site Index of the Scan Setting	
[FWD_INDEX]	: Forward Site Index of the Scan Setting	
[SYS_INDEX]	: System Index	
[CHN_HEAD]	: Channel Index Head of the Group List	
[CHN_TAIL]	: Channel Index Tail of the Group List	
[SEQ_NO]	: Site Sequence Number	(1-256)
[START_KEY]	: Startup Configuration	(0-9/.(dot) means none)
[LATITUDE]	: North or South Latitude	
[LONGITUDE]	: West or East Longitude	
[RANGE]	: Range	(1-250: 1= 0.5 mile or km)
[GPS_ENABLE]	: GPS Location detection	(0: OFF / 1: ON)
[MOT_TYPE]	: Band type for MOT/EDACS	(STD/SPL/CUSTOM)
[EDACS_TYPE]	: EDACS	(WIDE/NARROW)
[P25WAITING]	: Digital Waiting time	(0,100,200,300, ... , 900,1000)
[RSV]	: Reserve Parameter	* This is always only ",".

Get/Set Site Information.
The scanner returns only "," to punctuate for parameters which are not appropriate the site 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.
When the system protect bit is ON, except [REV_INDEX], [FWD_INDEX], [SYS_INDEX], [CHN_HEAD], [CHN_TAIL], other parameters will be send as a reserve parameter in the Radio -> Controller command.
This command is only acceptable in Programming Mode.

<COMMAND MCP>
Get/Set Motorola Custom Band Plan

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]	: Site 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 800custom/VHF/UHFsite.

In set command, if only "," parameters are send the Band Plan setting of the site will not change.
The set command is aborted if any format error is detected.
When the system protect bit is ON, all the parameters will be send as a reserve parameter in the Radio -> Controller command.
Before using this command, user should set Band Plan type as "Custom" first by using SIF command.
This command is only acceptable in Programming Mode.

<COMMAND ABP>
Get/Set APCO-P25 Band Plan

Controller → Radio
① ABP,[INDEX][\r]
② ABP,[INDEX],[BASE_FREQ_0],[SPACING_FREQ_0],[BASE_FREQ_1],[SPACING_FREQ_1], . . .
[BASE_FREQ_E],[SPACING_FREQ_E],[BASE_FREQ_F],[SPACING_FREQ_F][\r]
Radio → Controller
① ABP,[BASE_FREQ_0],[SPACING_FREQ_0],[BASE_FREQ_1],[SPACING_FREQ_1], . . .
[BASE_FREQ_E],[SPACING_FREQ_E],[BASE_FREQ_F],[SPACING_FREQ_F][\r]
② ABP,OK[\r]

[INDEX]	: Site Index
[BASE_FREQ_n]	: Base frequency (MHz) (25.0000MHz to 960.0000MHz, 5.0Hz step) Base_FREQ_n = (base frequency * 10^6) / 5 (Hexadecimal number)
[SPACING_FREQ_n]	: Spacing frequency (kHz) (0.125kHz to 128.0kHz, 0.125kHz step) SPACING_FREQ_n = (spacing frequency *10^3)/125 (Hexadecimal number)

*n: Base Plan number

EX.) Base frequency = 851.00625MHz, Spacing frequency = 6.25kHz
[BASE_FREQ_n] = (851.00625*10^6)/5 = A2510A2(H)
[SPACING_FREQ_n] = (6.25*10^3)/125= 32 (H)

Band Plan that has no data returns "0".
When the system protect bit is ON, all the parameters will be send as a reserve parameter in the Radio -> Controller command.
This command is only acceptable in Programming Mode.

<COMMAND TFQ>
Get/Set Trunk Frequency Info

Controller → Radio
① TFQ,[CHN_INDEX][\r]
② TFQ,[CHN_INDEX],[FRQ],[LCN],[LOUT],[RSV],[NUMBER_TAG],[VOL_OFFSET],[RSV],[COLOR_CODE][\r]

Radio → Controller
① TFQ,[FRQ],[LCN],[LOUT],[REV_INDEX],[FWD_INDEX],[SYS_INDEX],[GRP_INDEX],[RSV],[NUMBER_TAG],[VOL_OFFSET],[RSV][COLOR_CODE][\r]
② TFQ,OK[\r]

[CHN_INDEX]	: Trunk Frequency Index	
[FRQ]	: Trunk Frequency	
[LCN]	: LCN	
	(EDACS WIDE/NARROW system:	1 to 30
	LTR system:	1 to 20
	DMR/MotoTRBO system:	0 to 4094)
[LOUT]	: Lockout	(0: Unlocked / 1: Lockout)
[REV_INDEX]	: Reverse Frequency Index of the Site	
[FWD_INDEX]	: Forward Frequency Index of the Site	
[SYS_INDEX]	: System Index of the Frequency	
[GRP_INDEX]	: Index of the Site	
[NUMBER_TAG]	: Number tag	(0-999 / NONE)
[VOL_OFFSET]	: Volume Offset	(-3 - +3)
[COLOR_CODE]	: Color Code Status	(0-15: 0-15 / SRCH: Color Code Search)

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.
When the system protect bit is ON, except [REV_INDEX], [FWD_INDEX], [SYS_INDEX], [GRP_INDEX], other parameters will be send as a reserve parameter in the Radio -> Controller command.
[NUMBER_TAG] and [VOL_OFFSET] are just used for SCAT system.

<COMMAND AGC>
Append Channel Group

Controller → Radio
① AGC,[SYS_INDEX][\r]
Radio → Controller
① AGC,[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
① AGT,[SYS_INDEX][\r]
Radio → Controller
① AGT,[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 / Site

Controller → Radio
① DGR,[INDEX][\r]
Radio → Controller
① DGR,OK[\r]

[INDEX] : Group / Site Index

This command deletes a Channel Group, TGID Group or Site.
This command is only acceptable in Programming Mode.

<COMMAND GIN>
Get/Set Group Info

Controller → Radio
① GIN,[GRP_INDEX][\r]
② GIN,[GRP_INDEX],[NAME],[QUICK_KEY],[LOUT],[LATITUDE],[LONGITUDE],[RANGE],
[GPS ENABLE][\r]
Radio → Controller
① GIN,[GRP_TYPE],[NAME],[QUICK_KEY],[LOUT],[REV_INDEX],[FWD_INDEX],[SYS_INDEX],
[CHN_HEAD],[CHN_TAIL],[SEQ_NO] ,[LATITUDE],[LONGITUDE],[RANGE],
[GPS ENABLE] [\r]
② GIN,OK[\r]

For Group Information

[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	
[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	
[LATITUDE]	: North or South Latitude	
[LONGITUDE]	: West or East Longitude	
[RANGE]	: Range	(1-250: 1= 0.5 mile or km)
[GPS ENABLE]	: GPS Location detection	(0: OFF / 1: ON)

Get/Set Group Information.
In set command, only "," parameters are not changed.
The set command is aborted if any format error is detected.
When the system protect bit is ON, except [NAME], [REV_INDEX], [FWD_INDEX], [SYS_INDEX], [CHN_HEAD], [CHN_TAIL], other parameters will be send as a reserve parameter in the Radio -> Controller command.
This command is only acceptable in Programming Mode.

<COMMAND ACC>
Append Channel / Trunk Frequency

Controller → Radio
① ACC,[GRP_INDEX][\r]
Radio → Controller
① ACC,[CHN_INDEX][\r]

[GRP_INDEX] : Channel Group Index

[CHN_INDEX] : Appended Channel Index

- or -

[GRP_INDEX] : Site Index
[CHN_INDEX] : Appended Trunk Frequency Index

Append Channel to the group. Or, append Trunk Frequency to the Site.
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
① ACT,[GRP_INDEX][\r]
Radio → Controller
① ACT,[INDEX][\r]

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

Append TGID 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
① DCH,[INDEX][\r]
Radio → Controller
① DCH,OK[\r]

[INDEX] : Channel Index, TGID Index or Frequency Index of Trunked System

This command deletes a Channel and TGID.
This command is also valid for deleting a Trunk Frequency.
This command is only acceptable in Programming Mode.

<COMMAND CIN>
Get/Set Channel Info

Controller → Radio
① CIN,[INDEX][\r]
② CIN,[INDEX],[NAME],[FRQ],[MOD],[CTCSS/DCS],[TLOCK],[LOUT],[PRI],[ATT],[ALT],[ALTL],
[RSV],[AUDIO_TYPE],[P25NAC],[NUMBER_TAG],[ALT_COLOR],[ALT_PATTERN],
[VOL_OFFSET] [\r]
Radio → Controller
① CIN,[NAME],[FRQ],[MOD],[CTCSS/DCS],[TLOCK],[LOUT],[PRI],[ATT],[ALT],[ALTL],
[REV_INDEX],[FWD_INDEX],[SYS_INDEX],[GRP_INDEX],[RSV],[AUDIO_TYPE],
[P25NAC],[NUMBER_TAG],[ALT_COLOR],[ALT_PATTERN],[VOL_OFFSET] [\r]
② CIN,OK[\r]

[INDEX] : Channel Index
[NAME] : Name (max.16char)
[FRQ] : Channel Frequency
[MOD] : Modulation (AUTO/AM/FM/NFM/WFM/FMB)
[ATT] : Attenuation (0: OFF / 1: ON)
[CTCSS/DCS] : CTCSS/DCS Status (0-231)
*See *CTCSS/DCS* CODE LIST about the details of this code.
[TLOCK] : CTCSS/DCS Tone Lockout (0: OFF / 1: ON)
[LOUT] : Lockout (0: Unlocked / 1: Lockout)
[PRI] : Priority (0: OFF / 1: ON)
[ALT] : Alert Tone (0: OFF / 1-9: Tone No)

[ALTL]	: Alert Tone Level	(0: AUTO / 1-15)
[REV_INDEX]	: Reverse Channel Index of the Chan0nel Group	
[FWD_INDEX]	: Forward Channel Index of the Channel Group	
[SYS_INDEX]	: System Index of the Channel	
[GRP_INDEX]	: Group Index of the Channel	
[AUDIO_TYPE]	: Audio Type	(0: All / 1: Analog Only / 2: Digital Only)
[P25NAC]	: P25 NAC/Color Code Status (0-FFF: NAC 1000-100F: Color Code SRCH: NAC/Color Code Search)	
[NUMBER_TAG]	: Number tag	(0-999 / NONE)
[ALT_COLOR]	: Alert Light color (OFF, RED)	
[ALT_PATTERN]	: Alert Light Pattern	(0: ON / 1: Slow / 2: Fast)
[VOL_OFFSET]	: Volume Offset	(-3 - +3)

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.
When the system protect bit is ON, except [REV_INDEX], [FWD_INDEX], [SYS_INDEX], [GRP_INDEX], other parameters will be send as a reserve parameter in the Radio -> Controller command.

<COMMAND TIN>
Get/Set TGID Info

Controller → Radio
① TIN,[INDEX][\r]
② TIN,[INDEX],[NAME],[TGID],[LOUT],[PRI],[ALT],[ALTL],[RSV],[AUDIO_TYPE], [NUMBER_TAG],[ALT_COLOR],[ALT_PATTERN],[VOL_OFFSET],[TDMA_SLOT][\r]

Radio → Controller
① TIN,[NAME],[TGID],[LOUT],[PRI]],[ALT],[ALTL],[REV_INDEX],[FWD_INDEX],[SYS_INDEX], [GRP_INDEX],[RSV],[AUDIO_TYPE], [NUMBER_TAG],[ALT_COLOR], [ALT_PATTERN],[VOL_OFFSET],[TDMA_SLOT][\r]
② TIN,OK[\r]

[INDEX]	: TGID Index	
[NAME]	: Name (max.16char)	
[TGID]	: TGID	
[LOUT]	: Lockout	(0: Unlocked / 1: Lockout)
[PRI]	: Priority	(0: OFF / 1: ON)
[ALT]	: Alert Tone	(0: OFF / 1-9: Tone No)
[ALTL]	: Alert Tone Level	(0: AUTO / 1-15)
[REV_INDEX]	: Reverse TGID Index of the Group	
[FWD_INDEX]	: Forward TGID Index of the Group	
[SYS_INDEX]	: System Index of the TGID	
[GRP_INDEX]	: Group Index of the TGID	
[AUDIO_TYPE]	: Audio Type	(0: All / 1: Analog Only / 2: Digital Only)
[NUMBER_TAG]	: Number tag	(0-999 / NONE)
[ALT_COLOR]	: Alert Light color (OFF, RED)	
[ALT_PATTERN]	: Alert Light Pattern	(0: ON / 1: Slow / 2: Fast)
[VOL_OFFSET]	: Volume Offset	(-3 - +3)
[TDMA_SLOT]	: TDMA Slot	(ANY: Any / 1: Slot 1 / 2: Slot 2)

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.
When the system protect bit is ON, except [REV_INDEX], [FWD_INDEX], [SYS_INDEX], [GRP_INDEX], other parameters will be send as a reserve parameter in the Radio -> Controller command.

<COMMAND GLI>
Get Lockout TGID (for Rvw L/O ID)

Controller → Radio
① GLI,[SYS_INDEX][\r]
Radio → Controller
① GLI,[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 TGID exists.
When the system protect bit is ON, only “-1” will be send in the Radio -> Controller command.
This command is only acceptable in Programming Mode.

<COMMAND SLI>
Get Search L/O TGID

Controller → Radio
① SLI,[SYS_INDEX][\r]
Radio → Controller
① SLI,[TGID][\r]
SLI,-1[\r] : No more lockout TGID

This command is used to get Search L/O TGID list of the system.
Search L/O TGID is the L/O TGID which doesn't belong to any group in the system as a TGID.
Compared with GLI command, this command doesn't return any L/O TGID which is belong to one of group in the 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 TGID exists.
This command is only acceptable in Programming Mode.

<COMMAND ULI>
Unlock TGID (for Rvw L/O ID)

Controller → Radio
① ULI,[SYS_INDEX],[TGID][\r]
Radio → Controller
① ULI,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>
Lockout ID (TGID)

Controller → Radio
① LOI,[SYS_INDEX],[TGID][\r]
Radio → Controller
① LOI,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
① REV,[INDEX][\r]
Radio → Controller
① REV,[INDEX][\r]

[INDEX] : Index of system, site, group, channel, TGID or Location Alert System.

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
① FWD,[INDEX][\r]
Radio → Controller
① FWD,[INDEX][\r]

[INDEX] : Index of system, site, group, channel, TGID or Location Alert System.

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
① RMB[\r]
Radio → Controller
① RMB,#####[\r]

Returns the number of idle (free) memory block.
: ##### (not zero-padding)
This command is only acceptable in Programming Mode.

<COMMAND MEM>
Get Memory Used

Controller → Radio
① MEM[\r]
Radio → Controller
① MEM,[MEMORY_USED],[SYS],[SITE],[CHN],[LOC][\r]

[MEMORY_USED]	: The percent of memory that is used	(0 - 100)
[SYS]	: The number of systems that is created	(0 - 500
[SITE]	: The number of sites that is created	(0 - 1000)
[CHN]	: The number of channels that is created	(0 – 25000)
[LOC]	: The number of location system that is created	(0 – 1000)

This command is only acceptable in Programming Mode.

<COMMAND LIH>
Get Location Alert System Index Head

Controller → Radio
① LIH,[LAS_TYPE][\r]
Radio → Controller
① LIH,[INDEX][\r]

[LAS_TYPE] : Location Alert Type

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

<COMMAND LIT>
Get Location Alert System Index Tail

Controller → Radio
① LIT,[LAS_TYPE][\r]
Radio → Controller
① LIT,[INDEX][\r]

[LAS_TYPE] : Location Alert Type
(POI: POI / DROAD: Dangerous Road / DXING: Dangerous Xing)

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

<COMMAND CLA>
Create Location Alert System

Controller → Radio
① CLA,[LAS_TYPE][\r]
Radio → Controller
① CLA,[INDEX][\r]

[LAS_TYPE] : Location Alert Type
(POI: POI / DROAD: Dangerous Road / DXING: Dangerous Xing)
[INDEX] : Location Alert System Index

Creates a system and return created location alert system index.
The index is a handle to get/set location alert system information.
Returns "-1" if the scanner failed to create because of no resource.
This command is only acceptable in Programming Mode.

<COMMAND DLA>
Delete Location Alert System

Controller → Radio
① DLA,[INDEX][\r]
Radio → Controller
① DLA,OK[\r]

[INDEX] : Location Alert System Index

This command deletes a location alert system.
This command is only acceptable in Programming Mode.

<COMMAND LIN>
Get/Set Location Alert System Info

Controller → Radio
① LIN,[INDEX][\r]
② LIN,[INDEX],[LAS_TYPE],[NAME],[LOUT],[ALT],[ALTL],[LATITUDE],[LONGITUDE],
[RANGE],[SPEED],[DIR],[ALT_COLOR],[ALT_PATTERN][\r]
Radio → Controller
① LIN,[LAS_TYPE],[NAME],[LOUT],[ALT],[ALTL],[REV_INDEX],[FWD_INDEX],[SEQ_NO],
[LATITUDE],[LONGITUDE],[RANGE],[SPEED],[DIR],[ALT_COLOR],[ALT_PATTERN] [\r]
② LIN,OK[\r]

[INDEX] : Location Alert System Index
[LAS_TYPE] : Location Alert Type

(POI: POI / DROAD: Dangerous Road / DXING: Dangerous Xing)

[NAME]	: Name	(max.16char)
[LOUT]	: Lockout	(0: Unlocked / 1: Lockout)
[ALT]	: Alert Tone	(0: OFF / 1 - 4: Tone No.)
[ALTL]	: Alert Tone Level	(0: AUTO / 1-15)
[REV_INDEX]	: Reverse System Index of Location Alert System	
[FWD_INDEX]	: Forward System Index of Location Alert System	
[SEQ_NO]	: Location Alert System Sequence Number	
[LATITUDE]	: North or South Latitude	
[LONGITUDE]	: West or East Longitude	
[RANGE]	: Range	(1-80: 1=0.05 mile or km)
[SPEED]	: Speed Limit	(0-200: 1 means 1 mile/hour or km/h)
[DIR]	: Heading	(360: All range 0: North 44: NE 90: East 134: SE 180: South 224: SW 270: West 314: NW)
[ALT_COLOR]	: Alert Light color (OFF, RED)	
[ALT_PATTERN]	: Alert Light Pattern	(0: ON / 1: Slow / 2: Fast)

Get/Set Location Alert System Information.
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 SCO>
Get/Set Search/Close Call Settings

Controller → Radio
① SCO[\r]
② SCO,[RSV],[MOD],[ATT],[DLY],[RSV],[CODE_SRCH],[BSC],[REP],[RSV],[RSV],
[MAX_STORE],[RSV],[AGC_ANALOG],[AGC_DIGITAL],[P25WAITING][\r]

Radio → Controller
① SCO,[RSV],[MOD],[ATT],[DLY],[RSV],[CODE_SRCH],[BSC],[REP],[RSV],[RSV],
[MAX_STORE],[RSV],[AGC_ANALOG],[AGC_DIGITAL],[P25WAITING] [\r]
② SCO,OK[\r]

[MOD]	: Modulation	(AUTO/AM/FM/NFM/WFM/FMB)
[ATT]	: Attenuation	(0: OFF / 1: ON)
[DLY]	: Delay Time	(-10,-5,-2,0,1,2,5,10,30)
[CODE_SRCH]	: CTCSS/DCS Search	(0: OFF / 1: CTCSS/DCS / 2: P25 NAC/Color Code Search)
[BSC]	: Broadcast Screen	(16digit: ########･･#) (each # is 0 or 1) 0 means OFF 1 means ON
[REP]	: Repeater Find	(0: OFF / 1: ON)
[MAX_STORE]	: Max Auto Store	(1-256)
[AGC_ANALOG]	: AGC Setting for Analog Audio	(0: OFF / 1: ON)
[AGC_DIGITAL]	: AGC Setting for Digital Audio	(0: OFF / 1: ON)
[P25WAITING]	: Digital Waiting time	(0,100,200,300, ... , 900,1000)

```
|||||||･･+- Band10
|||||||        :
||||||+---- Band 2
||||||+----- Band 1
|||||+------ Reserve
||||+------- NOAA WX
|||+-------- VHF TV
||+--------- UHF TV
|+---------- FM
+----------- Pager
```

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 BBS>
Get/Set Broadcast Screen Band Settings

Controller → Radio
① BBS,[INDEX][\r]
② BBS,[INDEX],[LIMIT_L],[LIMIT_H][\r]
Radio → Controller
① BBS,[LIMIT_L],[LIMIT_H][\r]
② BBS,OK[\r]

[INDEX]	: Index	(1-9, 0 means 10)
[LIMIT_L]	: Lower Limit Frequency	(00000000 –99999999)
[LIMIT_H]	: Upper Limit Frequency	(00000000 –99999999)

Get/Set Broadcast Screen Band Settings.
This command is only acceptable in Programming Mode.

<COMMAND SHK>
Get/Set Search Key Settings

Controller → Radio
① SHK[\r]
② SHK,[SRCH_KEY_1],[SRCH_KEY_2],[SRCH_KEY_3],[RSV],[RSV],[RSV][\r]
Radio → Controller
① SHK,[SRCH_KEY_1],[SRCH_KEY_2],[SRCH_KEY_3],[RSV],[RSV],[RSV][\r]
② SHK,OK[\r]

[SRCH_KEY_1] - [SRCH_KEY_3] : Search Range
.(dot) : Not assign

PublicSafety	: Public Safety range	CUSTOM_1	: Custom 1 range
News	: News range	CUSTOM_2	: Custom 2 range
HAM	: HAM Radio range	CUSTOM_3	: Custom 3 range
Marine	: Marine range	CUSTOM_4	: Custom 4 range
Railroad	: Railroad range	CUSTOM_5	: Custom 5 range
Air	: Air range	CUSTOM_6	: Custom 6 range
CB	: CB Radio range	CUSTOM_7	: Custom 7 range
FRS/GMRS/MURS	: FRS/GMRS/MURS range	CUSTOM_8	: Custom 8 range
Racing	: Racing range	CUSTOM_9	: Custom 9 range
FM	: FM Broadcast range	CUSTOM_10	: Custom 10 range
Special	: Special range	TONE_OUT	: Tone Out mode
Military	: Military Air range	B_SCOPE	: Band Scope

Get/Set Search Key Settings.
This command is only acceptable in Programming Mode.

<COMMAND GLF>
Get Global Lockout Freq

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

[FRQ] : Lockout Frequency (250000-9600000)

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
① ULF,[FRQ][\r]
Radio → Controller
① ULF,OK[\r]

[FRQ] : Lockout Frequency (250000-9600000)

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
① LOF,[FRQ][\r]
Radio → Controller
① LOF,OK[\r]

[FRQ] : Frequency (250000-9600000)

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
① CLC[\r]
② CLC,[CC_MODE],[CC_OVERRIDE],[RSV],[ALTB],[ALTL],[ALTP],[CC_BAND],[LOUT],[HLD],
[QUICK_KEY],[NUMBER_TAG],[ALT_COLOR],[ALT_PATTERN][\r]
Radio → Controller
① CLC,[CC_MODE],[CC_OVERRIDE],[RSV],[ALTB],[ALTL],[ALTP],[CC_BAND],[LOUT],[HLD],
[QUICK_KEY],[NUMBER_TAG],[ALT_COLOR],[ALT_PATTERN][\r]
② CLC,OK[\r]

[CC_MODE] : Mode (0: OFF / 1: CC PRI / 2: CC DND)
[CC_OVERRIDE] : Override (1: ON / 0: OFF)
[ALTB] : Alert Beep (0: OFF / 1-9: Tone No)
[ALTL] : Alert Tone Level (0: AUTO / 1-15)
[ALTP] : Close Call Pause

3	: 3 sec	5	: 5 sec
10	: 10 sec	15	: 15 sec
30	: 30 sec	45	: 45 sec
60	: 60 sec	INF	: Infinite

[CC_BAND] : Close Call Band (7digit #######)
(each # is 0 or 1)
0 means OFF
1 means ON

```
|||||+- 800MHz+
||||+-- UHF
|||+--- VHF HIGH2
||+---- VHF HIGH1
|+----- AIR BAND
+------ VHF LOW2
------- VHF LOW1
```

[LOUT] : Lockout for CC Hits with Scan (0: Unlocked / 1: Lockout)
[HLD] : System Hold Time for CC Hits with Scan (0-255)
[QUICK_KEY] : Quick Key for CC Hits with Scan (0 – 99 / .(dot))

*".(dot)" means that nothing is assigned.

[NUMBER_TAG] : Number tag (0-999 / NONE)
[ALT_COLOR] : Alert Light color (OFF, RED)
[ALT_PATTERN] : Alert Light Pattern (0: ON / 1: Slow / 2: Fast)
[RSV] : Reserve Parameter * This is always only ",".

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 SSP>
Get/Set Service Search Settings

Controller → Radio
① SSP,[SRCH_INDEX][\r]
② SSP,[SRCH_INDEX],[DLY],[ATT],[HLD],[LOUT],[QUICK_KEY],[START_KEY],[RSV], [NUMBER_TAG],[AGC_ANALOG],[AGC_DIGITAL],[P25WAITING] [\r]
Radio → Controller
① SSP,[SRCH_INDEX],[DLY],[ATT],[HLD],[LOUT],[QUICK_KEY],[START_KEY],[RSV], [NUMBER_TAG],[AGC_ANALOG],[AGC_DIGITAL],[P25WAITING] [\r]
② SSP,OK[\r]

[SRCH_INDEX] : Service Search Range
1: Public Safety 6: Air 12: Special
2: News 7: CB Radio 15: Military Air
3: HAM Radio 8: FRS/GMRS/MURS
4: Marine 9: Racing
5: Railroad 11: FM Broadcast
[DLY] : Delay Time (-10,-5,-2,0,1,2,5,10,30)
[ATT] : Attenuation (0: OFF / 1: ON)
[HLD] : System Hold Time for Search with Scan (0-255)
[LOUT] : Lockout for Search with Scan (0: Unlocked / 1: Lockout)
[QUICK_KEY] : Quick Key (0 – 99 / .(dot))
[START_KEY] : Startup Configuration Key (0 – 9 / .(dot))
[NUMBER_TAG] : Number tag (0-999 / NONE)
[AGC_ANALOG] : AGC Setting for Analog Audio (0: OFF / 1: ON)
[AGC_DIGITAL] : AGC Setting for Digital Audio (0: OFF / 1: ON)
[P25WAITING] : Digital Waiting time (0,100,200,300, ... , 900,1000)

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

########## (each # is 0 or 1) : 0: valid / 1: invalid

The Order of Range is as same as LCD Icon (1 – 10).
Get/Set current status of the custom search range.
This command is only acceptable in Programming Mode.
*It cannot set all Custom Search Ranges to "0".

<COMMAND CBP>

Get/Set C-Ch Only Custom Search MOT Band Plan Settings

Controller → Radio
① CBP,[SRCH_INDEX][\r]
② CBP,[SRCH_INDEX],[MOT_TYPE],[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 CBP,[MOT_TYPE],[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 CBP, OK[\r]

[SRCH_INDEX]	: Index	(1-9, 0 means 10)	
[MOT_TYPE]	: Band type for MOT	(STD/SPL/CUSTOM)	
[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 800custom/VHF/UHFsite when trunking control channel in custom search.

In set command, if only "," parameters are send the Band Plan setting will not change. The set command is aborted if any format error is detected.
If [MOT_TYPE] is not CUSTOM, any other setting will be ignored.

This command is only acceptable in Programming Mode.

<COMMAND CSP>
Get/Set Custom Search Settings

Controller → Radio
① CSP,[SRCH_INDEX][\r]
② CSP,[SRCH_INDEX],[NAME],[LIMIT_L],[LIMIT_H],[STP],[MOD],[ATT],[DLY],[RSV],[HLD],
[LOUT],[C-CH],[RSV],[RSV],[QUICK_KEY],[START_KEY],[RSV],
[NUMBER_TAG],[AGC_ANALOG],[AGC_DIGITAL],[P25WAITING][\r]

Radio → Controller
① CSP,[NAME],[LIMIT_L],[LIMIT_H],[STP],[MOD],[ATT],[DLY],[RSV],[HLD],[LOUT],[C-CH],
[RSV],[RSV],[QUICK_KEY],[START_KEY][RSV],
[NUMBER_TAG],[AGC_ANALOG],[AGC_DIGITAL],[P25WAITING][\r]
② CSP,OK[\r]

[SRCH_INDEX]	: Index	(1-9, 0 means 10)					
[NAME]	: Name	(max.16char)					
[LIMIT_L]	: Lower Limit Frequency	(250000-9600000)					
[LIMIT_H]	: Upper Limit Frequency	(250000-9600000)					
[STP]	: Search Step						
	AUTO: AUTO	833	: 8.33k	2000	: 20k		
	500 : 5k	1000	: 10k	2500	: 25k		

625 : 6.25k 1250 : 12.5k 5000 : 50k
750 : 7.5 k 1500 : 15k 10000 : 100k

[MOD]	: Modulation	(AUTO / AM / FM / NFM / WFM / FMB)
[ATT]	: Attenuation	(0: OFF / 1: ON)
[DLY]	: Delay Time	(-10,-5,-2,0,1,2,5,10,30)
[HLD]	: System Hold Time	(0-255)
[LOUT]	: Lockout	(0: Unlocked / 1: Lockout)
[C-CH]	: Control Channel Only	(0: OFF / 1: ON)
[QUICK_KEY]	: Quick Key	(0 – 99 / .(dot))
[START_KEY]	: Startup Configuration Key	(0 - 9/ .(dot))
[NUMBER_TAG]	: Number tag	(0-999 / NOE)
[AGC_ANALOG]	: AGC Setting for Analog Audio	(0: OFF / 1: ON)
[AGC_DIGITAL]	: AGC Setting for Digital Audio	(0: OFF / 1: ON)
[P25WAITING]	: Digital Waiting time	(0,100,200,300, ... , 900,1000)

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 WXS>
Get/Set Weather Settings

Controller → Radio
① WXS[\r]
② WXS,[DLY],[ATT],[ALT_PRI],[RSV],[AGC_ANALOG],[RSV][\r]
Radio → Controller
① WXS,[DLY],[ATT],[ALT_PRI],[RSV],[AGC_ANALOG],[RSV] [\r]
② WXS,OK[\r]

[DLY]	: Delay Time	(-10,-5,-2,0,1,2,5,10,30)
[ATT]	: Attenuation	(0: OFF / 1: ON)
[ALT_PRI]	: Weather Alert Priority	(0: OFF / 1: ON)
[AGC_ANALOG]	: AGC Setting for Analog Audio	(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
① SGP,[SAME_INDEX][\r]
② SGP,[SAME_INDEX],[NAME],[FIPS1],[FIPS2],[FIPS3],[FIPS4],[FIPS5],[FIPS6],[FIPS7], [FIPS8][\r]
Radio → Controller
① SGP,[NAME],[FIPS1],[FIPS2],[FIPS3],[FIPS4],[FIPS5],[FIPS6],[FIPS7],[FIPS8][\r]
② SGP,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 TON>
Get/Set Tone-Out Settings

Controller → Radio
① TON,[INDEX][\r]

② TON,[INDEX],[NAME],[FRQ],[MOD],[ATT],[DLY],[ALT],[ALTL],[TONE_A],[RSV],[TONE_B], [RSV],[RSV],[RSV] ,[ALT_COLOR],[ALT_PATTERN],[AGC_ANALOG],[RSV], [RSV] [\r]

Radio → Controller

① TON,[INDEX],[NAME],[FRQ],[MOD],[ATT],[DLY],[ALT],[ALTL],[TONE_A],[RSV],[TONE_B], [RSV],[RSV],[RSV] ,[ALT_COLOR],[ALT_PATTERN],[AGC_ANALOG],[RSV], [RSV] [\r]

② TON,OK[\r]

[INDEX]	: Index	(1-9, 0 means 10)
[NAME]	: Name	(max.16char)
[FRQ]	: Channel Frequency	
[MOD]	: Modulation	(AUTO / FM / NFM)
[ATT]	: Attenuation	(0: OFF / 1: ON)
[DLY]	: Delay Time	(0,1,2,5,10,30 / INF: Infinite)
[ALT]	: Alert Tone	(0: OFF / 1-9: Tone No.)
[ALTL]	: Alert Tone Level	(0: AUTO / 1-15)
[TONE_A]	: Tone A Frequency ex.) 10000 means 1000.0Hz 00000 means 0.0Hz	
[RSV]	: Reserve Parameter * This is always only ",".	
[TONE_B]	: Tone B Frequency	
[ALT_COLOR]	: Alert Light color (OFF, RED)	
[ALT_PATTERN]	: Alert Light Pattern	(0: ON / 1: Slow / 2: Fast)
[AGC_ANALOG]	: AGC Setting for Analog Audio	(0: OFF / 1: ON)

Get/Set Tone-Out Settings.
This command is only acceptable in Programming Mode.

<COMMAND CNT>
Get/Set LCD Contrast Settings

Controller → Radio

① CNT[\r]

② CNT,[CONTRAST][\r]

Radio → Controller

① CNT,[CONTRAST][\r]

② CNT,OK[\r]

[CONTRAST]	: LCD Contrast	(1 - 15)

Get/Set LCD Contrast Settings.
This command is only acceptable in Programming Mode.

<COMMAND SCN>
Get/Set Scanner Option Settings

Controller → Radio

① SCN[\r]

② SCN,[DISP_MODE],[RSV],[CH_LOG],[G_ATT],[RSV],[P25_LPF],[DISP_UID],[RSV],[RSV],[RSV],[RSV],[RSV],[RSV],[RSV],[RSV],[RSV],[RSV],[RSV],[RSV][\r]

Radio → Controller

① SCN,[DISP_MODE],[RSV],[CH_LOG],[G_ATT],[RSV],[P25_LPF],[DISP_UID],[RSV],[RSV],[RSV],[RSV],[RSV],[RSV],[RSV],[RSV],[RSV],[RSV],[RSV],[RSV][\r]

② SCN,OK[\r]

[DISP_MODE]	: DISPPALY MODE	(1: MODE1 / 2: MODE2 / 3: MODE3)
[CH_LOG]	: Control Channel Logging	(0: OFF / 1: ON / 2: Extend)
[G_ATT]	: Global attenuator	(0: OFF / 1: ON)
[P25_LPF]	: P25 Low Pass Filter	(0: OFF / 1: ON)
[DISP_UID]	: Display Unit ID	(0: OFF / 1: ON)
[RSV]	: Reserve Parameter	* This is always only ",".

Get/Set Scanner Option Settings
This command is only acceptable in Programming Mode.

<COMMAND VOL>
Get/Set Volume Level Settings

Controller → Radio
① VOL[\r]
② VOL,[LEVEL][\r]
Radio → Controller
① VOL,[LEVEL][\r]
② VOL,OK[\r]

[LEVEL] : Volume Level (0 - 15)

<COMMAND SQL>
Get/Set Squelch Level Settings

Controller → Radio
① SQL[\r]
② SQL,[LEVEL][\r]
Radio → Controller
① SQL,[LEVEL][\r]
② SQL,OK[\r]

[LEVEL] : Squelch Level (0: OPEN / 1-14 / 15: CLOSE)

<COMMAND P25>
Get/Set APCO Data Settings

Controller → Radio
① P25[\r]

Radio → Controller
① P25,[RSV],[RSV],[ERR_RATE][\r]

[ERR_RATE] : Error Rate (from 0 to 99)

<COMMAND DBC>
Get/Set Default Band Coverage Settings

Controller → Radio
① DBC,[BNAD_NO][\r]
② DBC,[BNAD_NO],[STEP],[MOD][\r]

Radio → Controller
① DBC, [STEP],[MOD] [\r]
② DBC,OK[\r]

[BNAD_NO] : Band No (1-31)
Band number of band coverage
[STP] : Search Step

500	: 5k	625	: 6.25k	750	: 7.5 k
833	: 8.33k	1000	: 10k	1250	: 12.5k
1500	: 15k	2000	: 20k	2500	: 25k
5000	: 50k	10000	: 100k		

[MOD] : Modulation (AM / NFM / FM / WFM / FMB)

This command is only acceptable in Programming Mode.

<COMMAND GDO>

Get/Set GPS Disp Option

Controller → Radio
① GDO[\r]
② GDO,[DISP_MODE],[UNIT],[TIME_FORMAT],[TIME_ZONE],[POS_FORMAT][\r]
Radio → Controller
① GDO,[DISP_MODE],[UNIT],[TIME_FORMAT],[TIME_ZONE],[POS_FORMAT][\r]
② GDO,OK[\r]

[DISP_MODE]	: Display GPS Mode	
	(0: ETA / 1: Clock / 2: Elevation / 3: Speed / 4: Location)	
[UNIT]	: Distance Unit	(0: mile / 1: km)
[TIME_FORMAT]	: Time Format	(0: 12 H / 1: 24H)
[TIME_ZONE]	: Time Zone	(-14.0/-13.5/.../-0.5/0.0/0.5/.../13.5/14.0)
	ex) “-14.0” means “- 14.0 H”.	
[POS_FORMAT]	: Position Format	(DMS / DEG)

This command is only acceptable in Programming Mode.

<COMMAND BSP>
Get/Set Band Scope System Settings

Controller → Radio
① BSP[\r]
② BSP,[FRQ],[STP],[SPN],[MAX_HOLD][\r]
Radio → Controller
① BSP,[FRQ],[STP],[SPN],[MAX_HOLD][\r]
② BSP,OK[\r]

[FRQ] : Center Frequency
[STP] : Search Step

500	: 5k	625	: 6.25k	750	: 7.5 k
833	: 8.33k	1000	: 10k	1250	: 12.5k
1500	: 15k	2000	: 20k	2500	: 25k
5000	: 50k	10000	: 100k		

[SPN] : Sweep Span

0.2M,	0.4M,	0.6M,
0.8M,	1M,	2M,
4M,	6M,	8M,
10M,	20M,	40M,
60M,	80M,	100M,
120M,	140M,	160M,
180M,	200M,	250M,
300M,	350M,	400M,
450M,	500M	

[MAX_HOLD] : Max Hold Display (0: OFF / 1: ON)

Get/Set Band Scope System 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 GIE>
Get Global IF exchange Frequency

Controller → Radio
① GIE [\r]
Radio → Controller
① GIE,[FRQ][\r]
GIE,-1[\r]

[FRQ] : IF Exchange Frequency (250000-9600000)

This command is used to get Global IF exchange frequency list.

You should call this command again and again to get all global IF exchange frequencies until the scanner returns "-1".
"-1" means that no more IF exchange frequency exists.
This command is only acceptable in Programming Mode.

<COMMAND CIE>
Clear IF exchange Frequency

Controller → Radio
① CIE,[FRQ][\r]
Radio → Controller
① CIE,OK[\r]

[FRQ] : IF Exchange Frequency (250000-9600000)

This command clear Frequency from Global IF exchange Frequency list.
This command is only acceptable in Programming Mode.

<COMMAND RIE>
Register IF exchange Frequency

Controller → Radio
① RIE,[FRQ][\r]
Radio → Controller
① RIE,OK[\r]

[FRQ] : IF Exchange Frequency (250000-9600000)

This command register Frequency to Global IF exchange Frequency list.
This command is only acceptable in Programming Mode.

<COMMAND BAV>
*Get Battery Voltage

Controller → Radio
① BAV[\r]
Radio → Controller
① BAV,####[\r] : A/D Value (0-1023)

Battery Level[V] = (3.2[V] * #### * 2)/1023

Returns current battery voltage.
This command is for test mode.

<COMMAND WIN>
*Get Window Voltage

Controller → Radio
① WIN[\r]
Radio → Controller
① WIN,###,[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.

CTCSS/DCS CODE LIST

NONE / SEARCH

MODE	CODE	MODE	CODE
NONE / All	0	SEARCH	127

CTCSS

MODE	CODE	CTCSS 114.8Hz	80	CTCSS 179.9Hz	97
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

DCS

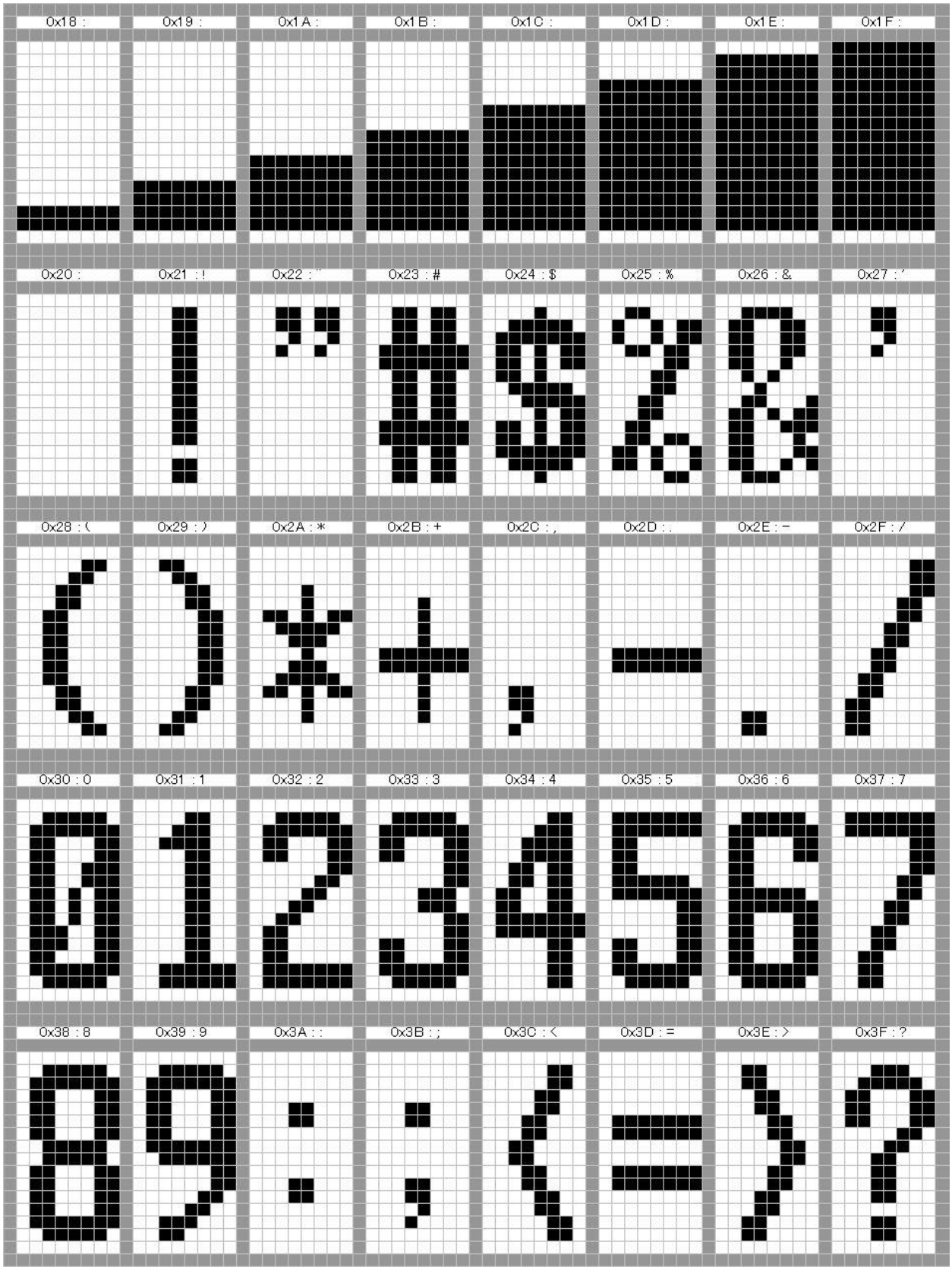
MODE	CODE	DCS 223	163	DCS 446	199
DCS 023	128	DCS 225	164	DCS 452	200
DCS 025	129	DCS 226	165	DCS 454	201
DCS 026	130	DCS 243	166	DCS 455	202
DCS 031	131	DCS 244	167	DCS 462	203
DCS 032	132	DCS 245	168	DCS 464	204
DCS 036	133	DCS 246	169	DCS 465	205
DCS 043	134	DCS 251	170	DCS 466	206
DCS 047	135	DCS 252	171	DCS 503	207
DCS 051	136	DCS 255	172	DCS 506	208
DCS 053	137	DCS 261	173	DCS 516	209
DCS 054	138	DCS 263	174	DCS 523	210
DCS 065	139	DCS 265	175	DCS 526	211
DCS 071	140	DCS 266	176	DCS 532	212
DCS 072	141	DCS 271	177	DCS 546	213
DCS 073	142	DCS 274	178	DCS 565	214
DCS 074	143	DCS 306	179	DCS 606	215
DCS 114	144	DCS 311	180	DCS 612	216
DCS 115	145	DCS 315	181	DCS 624	217
DCS 116	146	DCS 325	182	DCS 627	218
DCS 122	147	DCS 331	183	DCS 631	219
DCS 125	148	DCS 332	184	DCS 632	220
DCS 131	149	DCS 343	185	DCS 654	221
DCS 132	150	DCS 346	186	DCS 662	222
DCS 134	151	DCS 351	187	DCS 664	223
DCS 143	152	DCS 356	188	DCS 703	224
DCS 145	153	DCS 364	189	DCS 712	225
DCS 152	154	DCS 365	190	DCS 723	226
DCS 155	155	DCS 371	191	DCS 731	227
DCS 156	156	DCS 411	192	DCS 732	228
DCS 162	157	DCS 412	193	DCS 734	229
DCS 165	158	DCS 413	194	DCS 743	230
DCS 172	159	DCS 423	195	DCS 754	231
DCS 174	160	DCS 431	196	DCS 006	232
DCS 205	161	DCS 432	197	DCS 007	233
DCS 212	162	DCS 445	198	DCS 015	234

DCS 017	235	DCS 050	237	DCS 214	239
DCS 021	236	DCS 141	238		

7.14 FONT DATA

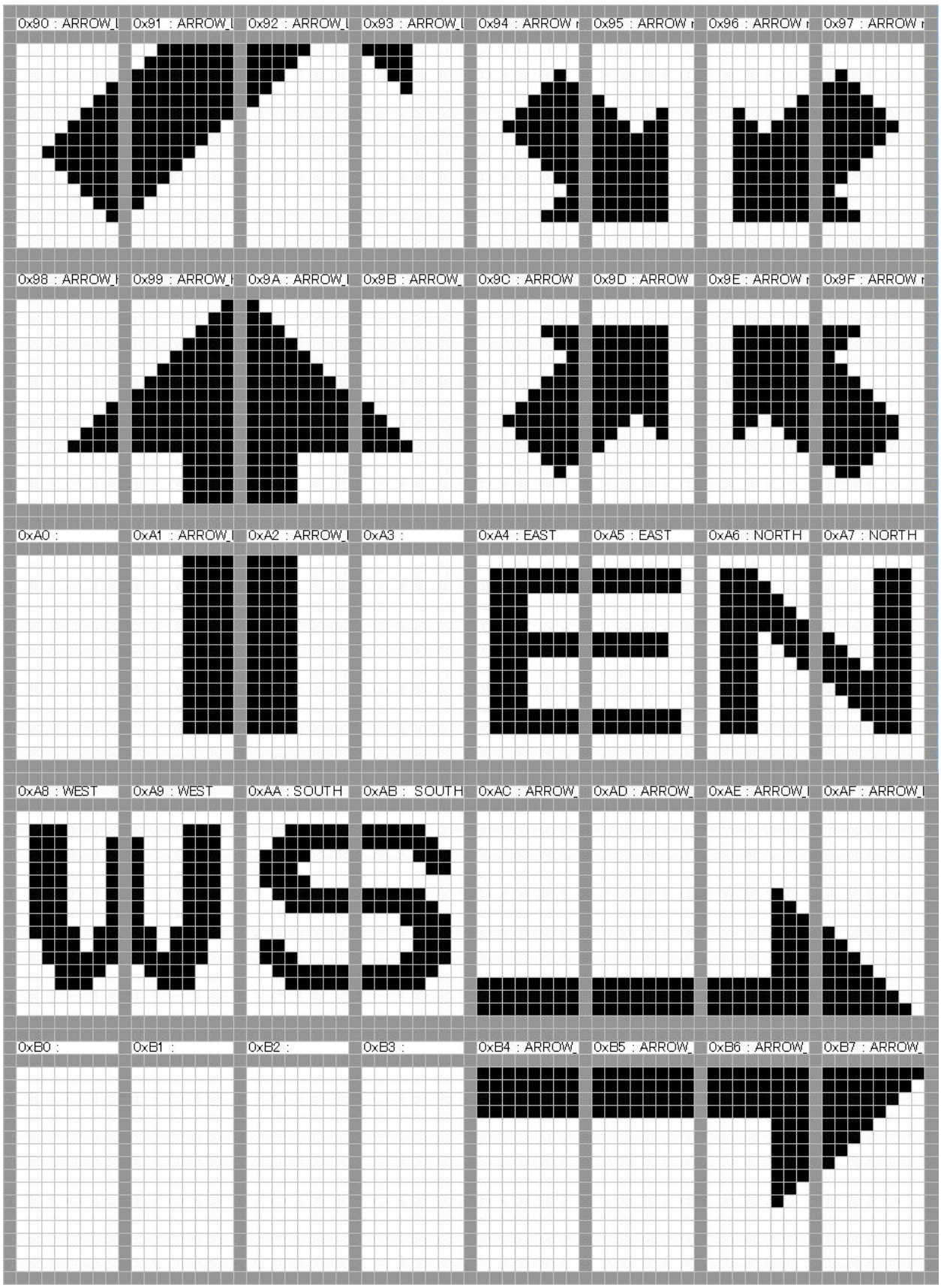
Character pattern of 8 x 16 dot

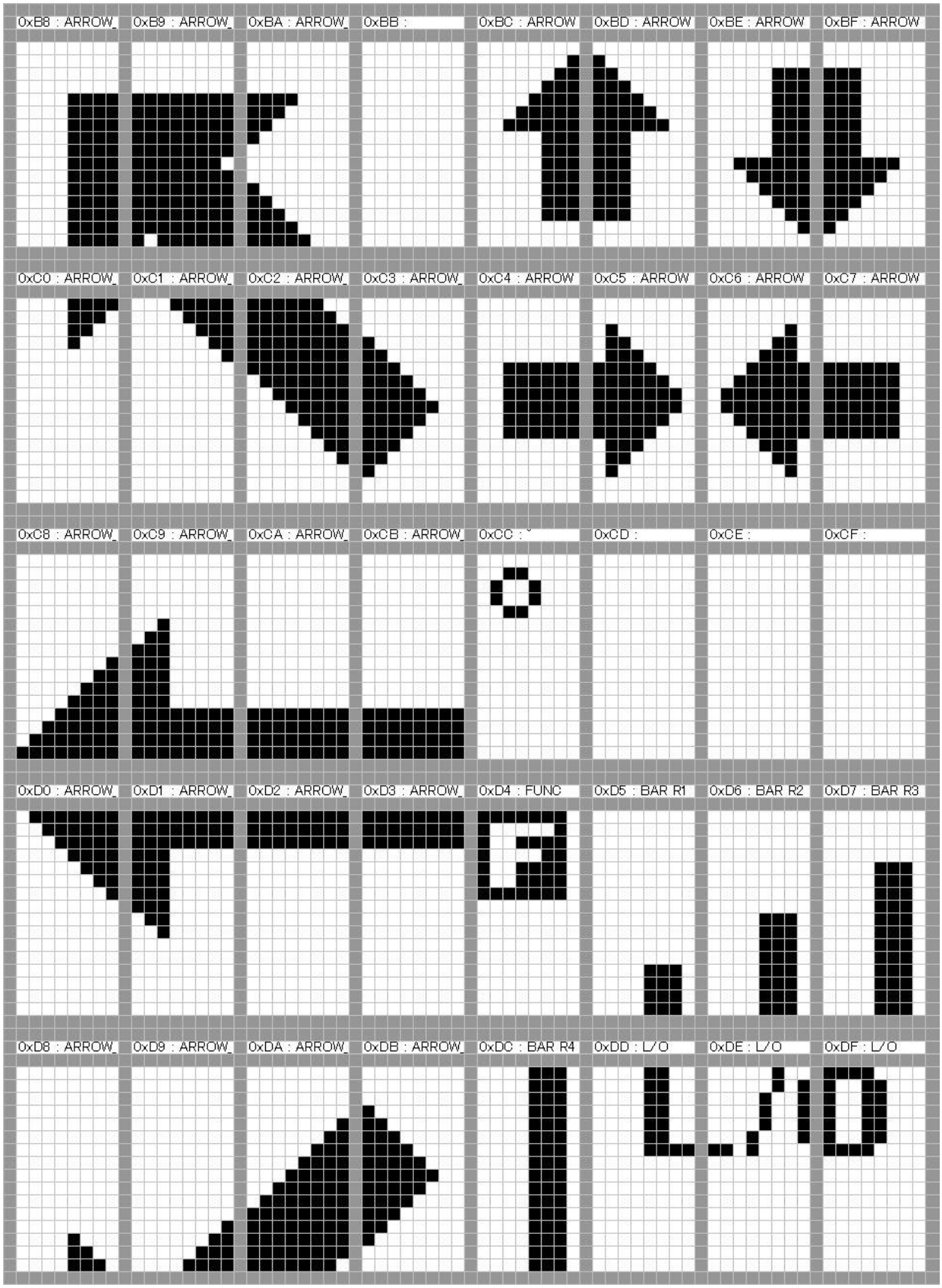
This character pattern is Large Font.
*In this document, characters of these areas are described as normal characters.

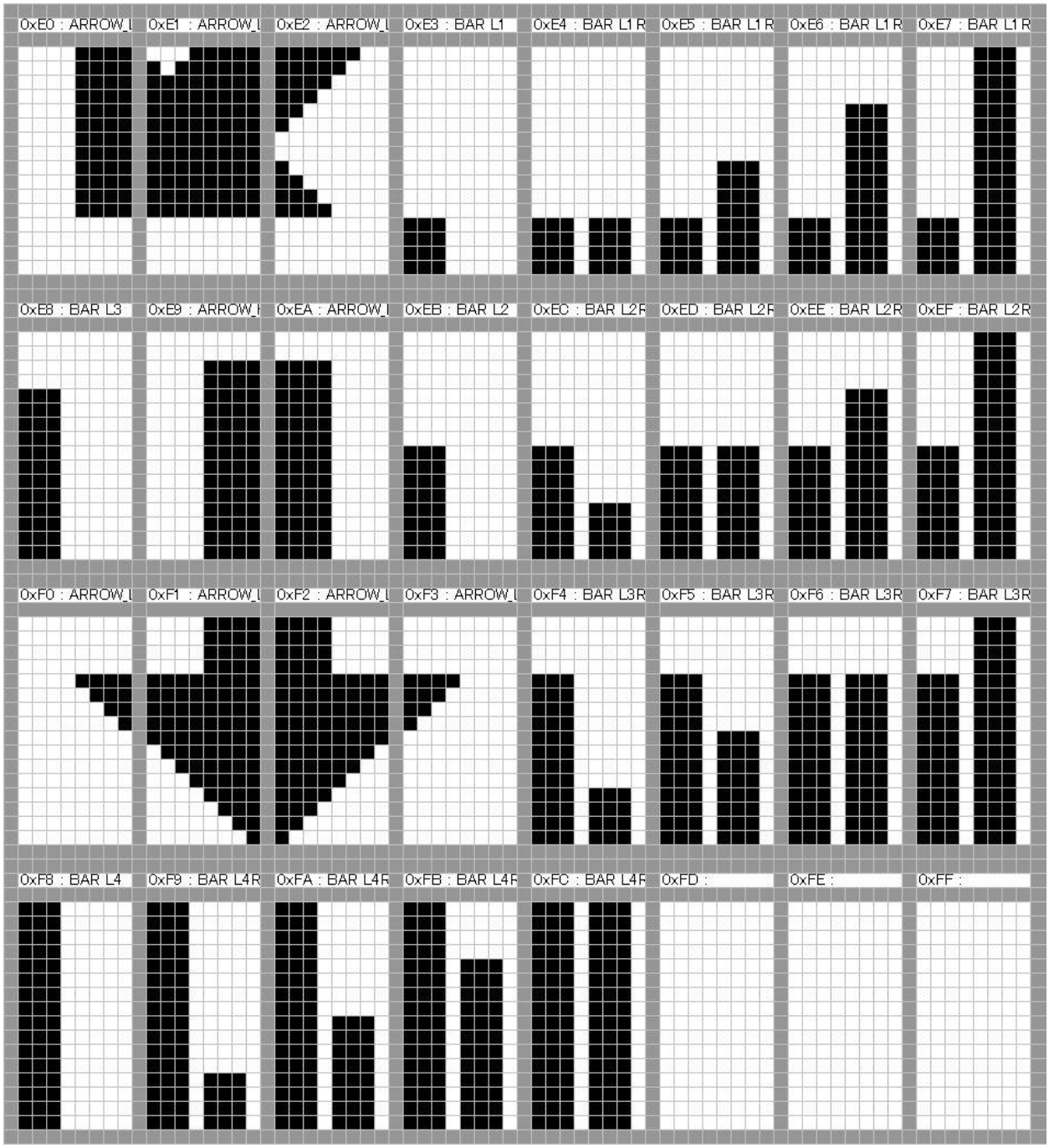



0x40 : @
0x41 : A
0x42 : B
0x43 : C
0x44 : D
0x45 : E
0x46 : F
0x47 : G
0x48 : H
0x49 : I
0x4A : J
0x4B : K
0x4C : L
0x4D : M
0x4E : N
0x4F : O
0x50 : P
0x51 : Q
0x52 : R
0x53 : S
0x54 : T
0x55 : U
0x56 : V
0x57 : W
0x58 : X
0x59 : Y
0x5A : Z
0x5B : [
0x5C : \
0x5D :]
0x5E : ^
0x5F : _
0x60 : `
0x61 : a
0x62 : b
0x63 : c
0X64 : d
0x65 : e
0x66 : f
0x67 : g


0x68 : h
0x69 : i
0x6A : j
0x6B : k
0x6C : l
0x6D : m
0x6E : n
0x6F : o
0x70 : p
0x71 : q
0x72 : r
0x73 : s
0x74 : t
0x75 : u
0x76 : v
0x77 : w
0x78 : x
0x79 : y
0x7A : z
0x7B : {
0x7C : |
0x7D : }
0x7E : ~
0x7F :
0x80 : ■
0x81 : ↑
0x82 : ↓
0x83 :
0x84 : ARROW_
0x85 : ARROW_
0x86 : ARROW_
0x87 : ARROW_
0x88 :
0x89 : ARROW_
0x8A : ARROW_
0x8B :
0x8C :
0x8D : ARROW_
0x8E : ARROW_
0x8F : ARROW_


0x90 : ARROW_L
0x91 : ARROW_L
0x92 : ARROW_L
0x93 : ARROW_L
0x94 : ARROW
0x95 : ARROW
0x96 : ARROW
0x97 : ARROW
0x98 : ARROW_
0x99 : ARROW_
0x9A : ARROW_
0x9B : ARROW_
0x9C : ARROW
0x9D : ARROW
0x9E : ARROW
0x9F : ARROW
0xA0 :
0xA1 : ARROW_
0xA2 : ARROW_
0xA3 :
0xA4 : EAST
0xA5 : EAST
0xA6 : NORTH
0xA7 : NORTH
0xA8 : WEST
0xA9 : WEST
0xAA : SOUTH
0xAB : SOUTH
0xAC : ARROW_
0xAD : ARROW_
0xAE : ARROW_
0xAF : ARROW_
0xB0 :
0xB1 :
0xB2 :
0xB3 :
0xB4 : ARROW_
0xB5 : ARROW_
0xB6 : ARROW_
0xB7 : ARROW_

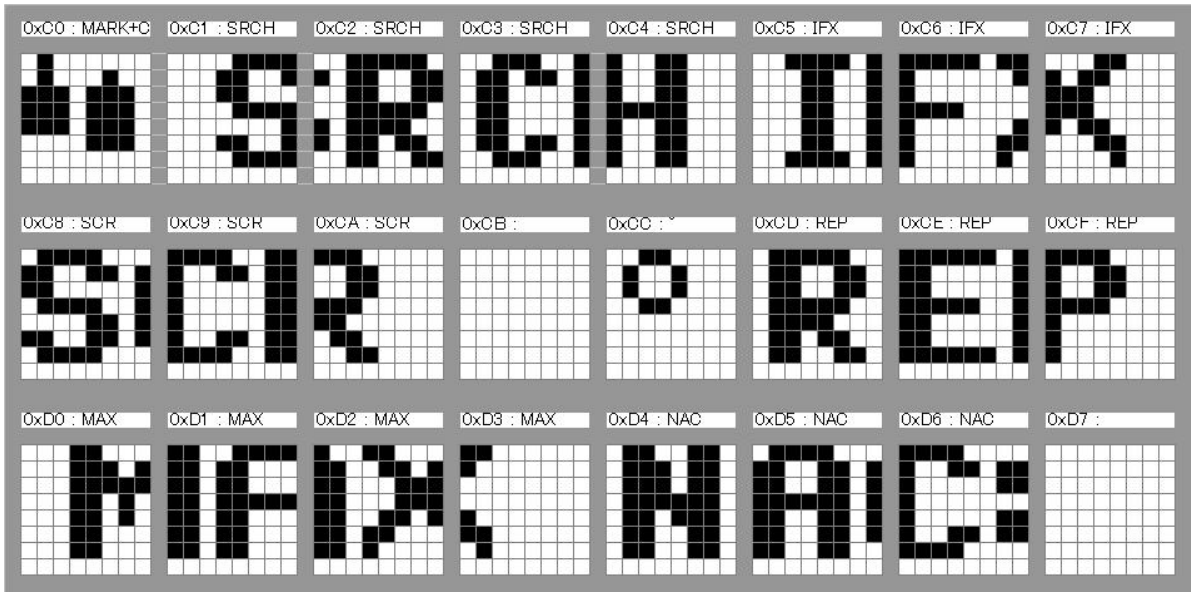

0xB8 : ARROW_
0xB9 : ARROW_
0xBA : ARROW_
0xBB :
0xBC : ARROW
0xBD : ARROW
0xBE : ARROW
0xBF : ARROW
0xC0 : ARROW_
0xC1 : ARROW_
0xC2 : ARROW_
0xC3 : ARROW_
0xC4 : ARROW
0xC5 : ARROW
0xC6 : ARROW
0xC7 : ARROW
0xC8 : ARROW_
0xC9 : ARROW_
0xCA : ARROW_
0xCB : ARROW_
0xCC :
0xCD :
0xCE :
0xCF :
0xD0 : ARROW_
0xD1 : ARROW_
0xD2 : ARROW_
0xD3 : ARROW_
0xD4 : FUNC
0xD5 : BAR R1
0xD6 : BAR R2
0xD7 : BAR R3
0xD8 : ARROW_
0xD9 : ARROW_
0xDA : ARROW_
0xDB : ARROW_
0xDC : BAR R4
0xDD : L/O
0xDE : L/O
0xDF : L/O


0xE0 : ARROW_L
0xE1 : ARROW_L
0xE2 : ARROW_L
0xE3 : BAR L1
0xE4 : BAR L1 R
0xE5 : BAR L1 R
0xE6 : BAR L1 R
0xE7 : BAR L1 R
0xE8 : BAR L3
0xE9 : ARROW_F
0xEA : ARROW_L
0xEB : BAR L2
0xEC : BAR L2 F
0xED : BAR L2 F
0xEE : BAR L2 R
0xEF : BAR L2 R
0xF0 : ARROW_L
0xF1 : ARROW_L
0xF2 : ARROW_L
0xF3 : ARROW_L
0xF4 : BAR L3 R
0xF5 : BAR L3 R
0xF6 : BAR L3 R
0xF7 : BAR L3 R
0xF8 : BAR L4
0xF9 : BAR L4 R
0xFA : BAR L4 R
0xFB : BAR L4 F
0xFC : BAR L4 F
0xFD :
0xFE :
0xFF :

Character pattern of 8 x 8 dot

This character pattern is Small Font.


0x70 : p
0x71 : q
0x72 : r
0x73 : s
0x74 : t
0x75 : u
0x76 : v
0x77 : w
0x78 : x
0x79 : y
0x7A : z
0x7B : {
0x7C : |
0x7D : }
0x7E : ~
0x7F :
0x80 : ■
0x81 : ↑
0x82 : ↓
0x83 : Battery L
0x84 : Battery L
0x85 : Key Pad
0x86 : Key Pad
0x87 : Close Ca
0x88 : Close Ca
0x89 : Close Ca
0x8A : Close Ca
0x8B : Function
0x8C : Priority C
0x8D : HOLD
0x8E : HOLD
0x8F : HOLD
0x90 : HOLD
0x91 : Data Skip
0x92 : Data Skip
0x93 : Data Skip
0x94 : Data Skip
0x95 : Lock Out
0x96 : Lock Out
0x97 : Lock Out
0x98 : AM
0x99 : AM
0x9A : AM
0x9B : FM
0x9C : FM
0x9D : NFM
0x9E : NFM
0x9F : WFM
0xA0 : WFM
0xA1 : Priority M
0xA2 : Priority M
0xA3 : Attenuat
0xA4 : Attenuat
0xA5 : Attenuat
0xA6 : Signal Le
0xA7 : Signal Le
0xA8 : Signal Le
0xA9 : Signal Le
0xAA : Signal Le
0xAB : Signal Le
0xAC : Signal Le
0xAD : Signal Le
0xAE : Active C
0xAF : Active C
0xB0 : Active C
0xB1 : Volume/
0xB2 : Volume/
0xB3 : Volume/
0xB4 : Active C
0xB5 : CC DND
0xB6 : CC DND
0xB7 : CC DND
0xB8 : CC DND
0xB9 : FMB
0xBA : FMB
0xBB : MUTE
0xBC : MUTE
0xBD :
0xBE :
0xBF :


0xC0 : MARK+C
0xC1 : SRCH
0xC2 : SRCH
0xC3 : SRCH
0xC4 : SRCH
0xC5 : IFX
0xC6 : IFX
0xC7 : IFX
0xC8 : SCR
0xC9 : SCR
0xCA : SCR
0xCB :
0xCC : °
0xCD : REP
0xCE : REP
0xCF : REP
0xD0 : MAX
0xD1 : MAX
0xD2 : MAX
0xD3 : MAX
0xD4 : NAC
0xD5 : NAC
0xD6 : NAC
0xD7 :