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10. Appendix C (PC programming Command)

【 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]

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

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

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

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Programming Command List

No.	Category	Command	Function	Program Mode Only
1.	Program Control Mode	PRG	Enter Program Mode	
2.		EPG	Exit Program Mode	
3.	System Information	MDL	Get Model Info	
4.		VER	Get Firmware Version	
5.	System Settings	BLT	Get/Set Backlight	O
6.		BSV	Get/Set Battery Info	O
7.		CLR	Clear All Memory	O
8.		KBP	Get/Set Key Beep and setting	O
9.		PRI	Get/Set Priority Mode	O
10.	Scan Settings	SCG	Get/Set Group Quick Lockout	O
11.		DCH	Delete Channel	O
12.		CIN	Get/Set Channel Info	O
13.	Search / Close Call Settings	SCO	Get/Set Search/Close Call Settings	O
14.		GLF	Get Global Lockout Freq	O
15.		ULF	Unlock Global L/O	O
16.		LOF	Lock Out Frequency	O
17.		CLC	Get/Set Close Call Settings	O
18.	Service Search Settings	SSG	Get/Set Service Search Settings	O
19.	Custom Search Settings	CSG	Get/Set Custom Search Group	O
20.		CSP	Get/Set Custom Search Settings	O
21.	Weather Settings	WXS	Get/Set Weather Settings	O
22.	LCD Contrast Settings	CNT	Get/Set LCD Contrast Settings	O
23.	Volume Level Settings	VOL	Get/Set Volume Level Settings	
24.	Squelch Level Settings	SQL	Get/Set Squelch Level Settings	

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<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 MDL>
  Get Model Info

Controller → Radio
  ①　　MDL[¥r]
Radio → Controller
  ①　　MDL,BC125AT[¥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 BLT>
  Get/Set Backlight

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

[EVENT]
AO :ALWAYS ON   AF :ALWAYS OFF
KY : KEYPRESS   SQ : SQUELCH
KS : KEY+SQL

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

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<COMMAND BSV >
  Get/Set Battery Info

Controller → Radio
  ①   BSV [¥r]
  ②   BSV,[CHARGE_TIME][¥r]

  Radio → Controller
  ①   BSV,[CHARGE_TIME] [¥r]
  ②   BSV,OK[¥r]
         [CHARGE_TIME]   Battery Charge Time (1-16)

<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.

<COMMAND KBP>
  Get/Set Key Beep and setting

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

      [LEVEL]   : Beep Level   (0:Auto / 99:OFF)
      [LOCK]   : Key Lock status   (0:OFF / 1:ON)

           Get/Set Key Beep Setting.
           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][¥r]
Radio → Controller
  ①   PRI,[PRI_MODE][¥r]
  ②   PRI,OK[¥r]

             [PRI_MODE]   : Priority Setting   (0:OFF / 1:ON / 2:PLUS ON / 3:DND)

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

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<COMMAND SCG>
Get/Set SCAN Channel Group

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

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

           The Order of Range is as same as LCD Icon (1 – 9,0).
           Get/Set current status of the channel starage bank select.
           This command is only acceptable in Programming Mode.
           *It can not set all channel strage banks to "1".

<COMMAND DCH>
Delete Channel

Controller → Radio
  ①   DCH,[INDEX][¥r]
Radio → Controller
  ①   DCH,OK[¥r]

      [INDEX]   : Channel Index(1-500)   ex)   CH1 = 1

           This command deletes a Channel.
           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],[DLY],[LOUT],[PRI][¥r]
Radio → Controller
      ①   CIN,[INDEX],[NAME],[FRQ],[MOD],[CTCSS/DCS],[DLY],[LOUT],[PRI][¥r]
  ②   CIN,OK[¥r]

           [INDEX]   : Channel Index(1-500)
           [NAME]   : Name (max.16char)
           [FRQ]   : Channel Frequency   ex) 290000
           [MOD]   : Modulation   (AUTO/AM/FM/NFM)
           [CTCSS/DCS] : CTCSS/DCS Status   (0-231)
                             *See ***CTCSS/DCS CODE*** LIST about the details of this code.
           [DLY]   : Delay Time   (-10,-5,0,1,2,3,4,5)
           [LOUT]   : Lockout   (0:Unlocked / 1:Lockout)
           [PRI]   : Priority   (0:OFF / 1:ON)

           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.

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<COMMAND SCO>
Get/Set Search/Close Call Settings

Controller → Radio
 ①   SCO[¥r]
 ②   SCO,[DLY],[CODE_SRCH][¥r]
Radio → Controller
 ①   SCO,[DLY],[CODE_SRCH][¥r]
 ②   SCO,OK[¥r]

 [DLY]   : Delay Time   (-10,-5,0,1,2,3,4,5)
 [CODE_SRCH] : CTCSS/DCS Search (0:OFF / 1: CTCSS/DCS)

  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
 ①   GLF[¥r]
 ②   GLF,[***][¥r]
Radio → Controller
 ①   GLF,[FRQ][¥r]
    GLF,-1[¥r]
 ②   GLF,OK[¥r]

 [FRQ]   : Lockout Frequency (250000-512000)
 [***]   : Don't care   (to retrieve 1'st L/O frequency)
  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 (250000-5120000)

  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   (250000-5120000)

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

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<COMMAND CLC>
Get/Set Close Call Settings

Controller → Radio
①　　CLC[¥r]
　　②　　CLC,[CC_MODE],[ALTB],[ALTL],[CC_BAND],[LOUT][¥r]
Radio → Controller
　　①　　CLC,[CC_MODE],[ALTB],[ALTL],[CC_BAND],[LOUT][¥r]
②　　CLC,OK[¥r]

        [CC_MODE]   : Mode   (0:OFF / 1:CC PRI / 2:CC DND)
        [ALTB]   : Alert Beep   (0:OFF / 1:ON)
        [ALTL]   : Alert Light   (0:OFF / 1:ON)
        [CC_BAND]   : Close Call Band   (5digit #####)

```
              (each # is 0 or 1)      |||||
              0 means OFF             |||||
              1 means ON              ||||+--- UHF
                                      |||+---- VHF HIGH2
                                      ||+----- VHF HIGH1
                                      |+------ AIR BAND
                                      +------- VHF LOW1
```

        [LOUT]   : Lockout for CC Hits with Scan   (0:Unlocked / 1:Lockout)

        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 SSG>
Get/Set Service Search Group

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

```
          ########## (each # is 0 or 1)      :      0 : valid   / 1 : invalid
          ||||||||||
          |||||||||+----- Racing
          ||||||||+------ FRS/GMRS/MURS
          |||||||+------- CB Radio
          ||||||+-------- Military Air
          |||||+--------- Civil Air
          ||||+---------- Railroad
          |||+----------- Marine
          ||+------------ Ham Radio
          |+------------- Fire/Emergency
          +-------------- Police
```

        The Order of Range is as same as LCD Icon (1 – 9,0).
        Get/Set current status of the Service Search Bank.
        This command is only acceptable in Programming Mode.
        *It can not set all Service Search Bangs to "0".

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<COMMAND CSG>
Get/Set Custom Search Group

Controller → Radio
③   CSG[¥r]
④   CSG,##########[¥r]   : Status of Each Search Range
Radio → Controller
③   CSG,##########[¥r]
④   CSG,OK[¥r]

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

            The Order of Range is as same as LCD Icon (1 – 9,0).
            Get/Set current status of the custom search range.
            This command is only acceptable in Programming Mode.
            *It can not set all Custom Search Ranges to "0".

<COMMAND CSP>
Get/Set Custom Search Settings

Controller → Radio
①   CSP,[SRCH_INDEX][¥r]
    ②   CSP,[SRCH_INDEX],[LIMIT_L],[LIMIT_H][¥r]
Radio → Controller
①   CSP,[SRCH_INDEX],[LIMIT_L],[LIMIT_H],[¥r]
②   CSP,OK[¥r]

        [SRCH_INDEX]   : Index   (1-10)
        [LIMIT_L]   : Lower Limit Frequency   (250000-5120000)
        [LIMIT_H]   : Upper Limit Frequency   (250000-5120000)

            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,[ALT_PRI][¥r]
Radio → Controller
①   WXS,[ALT_PRI][¥r]
②   WXS,OK[¥r]

        [ALT_PRI]   : Weather Alert Priority   (0:OFF / 1:ON)

            Get/Set Weather Priority 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)
            The default value is set when the set value is outside the range (1-15).
            Get/Set LCD Contrast Settings.
            This command is only acceptable in Programming Mode.

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<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)

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CTCSS/DCS CODE LIST

NONE / SEARCH

MODE	CODE	MODE	CODE	MODE	CODE
NONE / All	0	SEARCH	127	NO_TONE	240

CTCSS

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

DCS

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