UD7006
Universal Disc Player

RS-232C Control Specification

Notes:
When "Power Saving" mode is set to "Power Saving Stanby", the BD Player denies the command from RS-232C. It means the BD Player does not turn on via RS-232C control. Please set "Power Saving = Normal Standby" for the power on/off control via RS-232C. Please refer to "Power Saving" setup part in User Guide page.37 for the detail.

Category	:	**Universal(SA-CD/Blu-ray/DVD/CD) Player**
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Serial communication interface

1-1.   Physical interface

Arrangement of connector signals

	RS-232C	
Pin #	Signal	I /O
1	GND	-
2	TxD	O
3	RxD	I
4	NC	-
5	S.GROUND	-
6	NC	-
7	NC	-
8	NC	-
9	NC	-

1-2.   Transfer format of serial data

- Interface   : As per RS-232C or RS-422A
- Communication system   : Half-duplex communication
- Data transfer mode   : Start stop synchronization
- Transfer rate   : 9,600bps
- Start bit (ST)   : 1 bit
- Data bit (b0-b7)   : 8 bits
- Parity (P)   : Even number
- Stop bit (SP)   : 1 bit
- Transfer data   : ASCII Code   (Hex Code)
- Control characters   : STX   (02h)
                                      ETX   (03h)
                                      NAK   (15h)

| ST | b0 | b1 | b2 | b3 | b4 | b5 | b6 | b7 | P | SP |

11 / 9600 (sec)
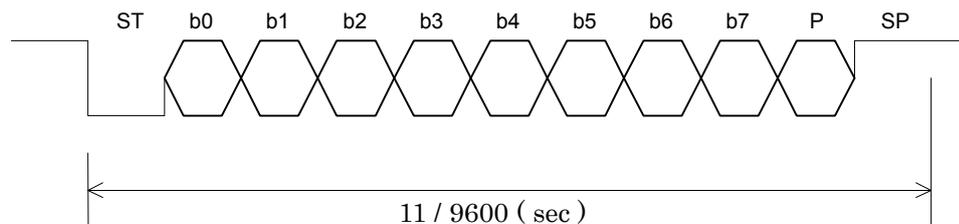
1-3. Command format and answer format

This unit shall be based on commands each of which consists of a data row (some commands are without a PC) composed of command codes (CC) and parameter codes (PC). The trans-mitting station shall be designed to send block check characters (BCC) following ETX, with the data row enclosed in STX (text start : 02h) and ETX (text termination : 03h). The receiving station shall regard receipt of BCC as the completion of command reception when it has received STX.

Here are the formats.

Commands : <STX> <CC> <PC0> <PC1> <PC2> <---------> <PCn> <ETX> <BCCH> <BCCL>

STX (Start of TeXt)	: 02h
CC (Command Code)	: Command code
PC (Parameter Code)	: Defined for each command
	(Contents and number of parameters)
ETX (End of TeXt)	: 03h
BCC (Block Check Character)	:

$$CC + PC0 + PC1 + PC2 + \text{--------------} + PCn + ETX = XYh$$

(Each of X and Y is 4 bit long)   X , Y=0,1,2,3,4,5,6,7,8,9,A,B,C,D,E,F

BCCH (high-level byte) = X as converted to an ASCII code

BCCL (low-level byte) = Y as converted to an ASCII code

Answers : <STX> <RC> <AC> <PC0> <PC1> <PC2> <--------> <PCn> <ETX> <BCCH> <BCCL>

STX (Start of TeXt)	: 02h
RC (Reply Code)	: Reply code (=Command code)
AC (Answer Code)	: Answer code
PC (Parameter Code)	: Defined for each command
	(contents and number of parameters)
ETX (End of TeXt)	: 03h
BCC (Block Check Character)	:

$$RC + AC + PC0 + PC1 + PC2 + \text{------------} + PCn + ETX = XYh$$

(Each of X and Y is 4 bit long)   X , Y=0,1,2,3,4,5,6,7,8,9,A,B,C,D,E,F

BCCH (high-level byte) = X as converted to an ASCII code

BCCL (low-level byte) = Y as converted to an ASCII code

1-4.   Protocol for data transmission and reception

This unit is based on half-duplex communication. The unit shall therefore transmit commands and receive answers according to the following procedure.

1-4-1. Basic procedure

1) The host shall select commands for this unit and transmit them to this unit. Command interval time is MIN 40µsec.

2) Having issued a command, the host shall receive an answer from this unit, then issue the next command.

3) The host shall analyze the RC, AC, and PC as answers given and decide whether the command has been normally executed.

4) The host shall give an answer to a command that gives operational instructions, then issue a status request command, and decide whether this unit has finished operating with regard to the command that gives operational instructions.

5) The time from the start of command transmission to the end of command transmission should be max 40 msec.

6) The time from the completion of command transmission to the start of answer-back is MAX. 5 sec.

7) This unit cannot receive any commands for about 5 seconds after the power switch is turnied on.

1-4-2. Communication errors

1) Having received a command, which results in a communication error（overrun, framing, or parity error）, this unit shall give NAK（15h）. （MAX 80ms from the start of command transmission）

2) If the host has received NAK from this unit, it shall retransmit the command that it has transmitted immediately beforehand.

3) Having received an answer, which results in a communication error (overrun, framing, or parity error), the host shall respond with NAK.

4) If it has received NAK from the host, this unit shall retransmit the answer it has transmitted immediately beforehand. (MAX 40ms)

5) When there is no answer from the unit within 6s, the host shall retransmit the command.

1-5.　　　Command / Answer sequence

Shown below are the command sequence and the answer sequence of this unit.

1) When a command is normally received (unit) and an answer is normally received (host) with an answer parameter

HOST　　　　　　　**UNIT**

Comand Transmitted

STX
CC
PC0
PC1
PC2

MIN
40 μs

MAX
40ms

PCn
ETX
BCC

Error Check OK

MAX
2s

STX
RC
AC
PC0
PC1

Answer Transmietted

PCn
ETX
BCC

Error Check OK

Next Command
Transmitted

STX
CC
PC0
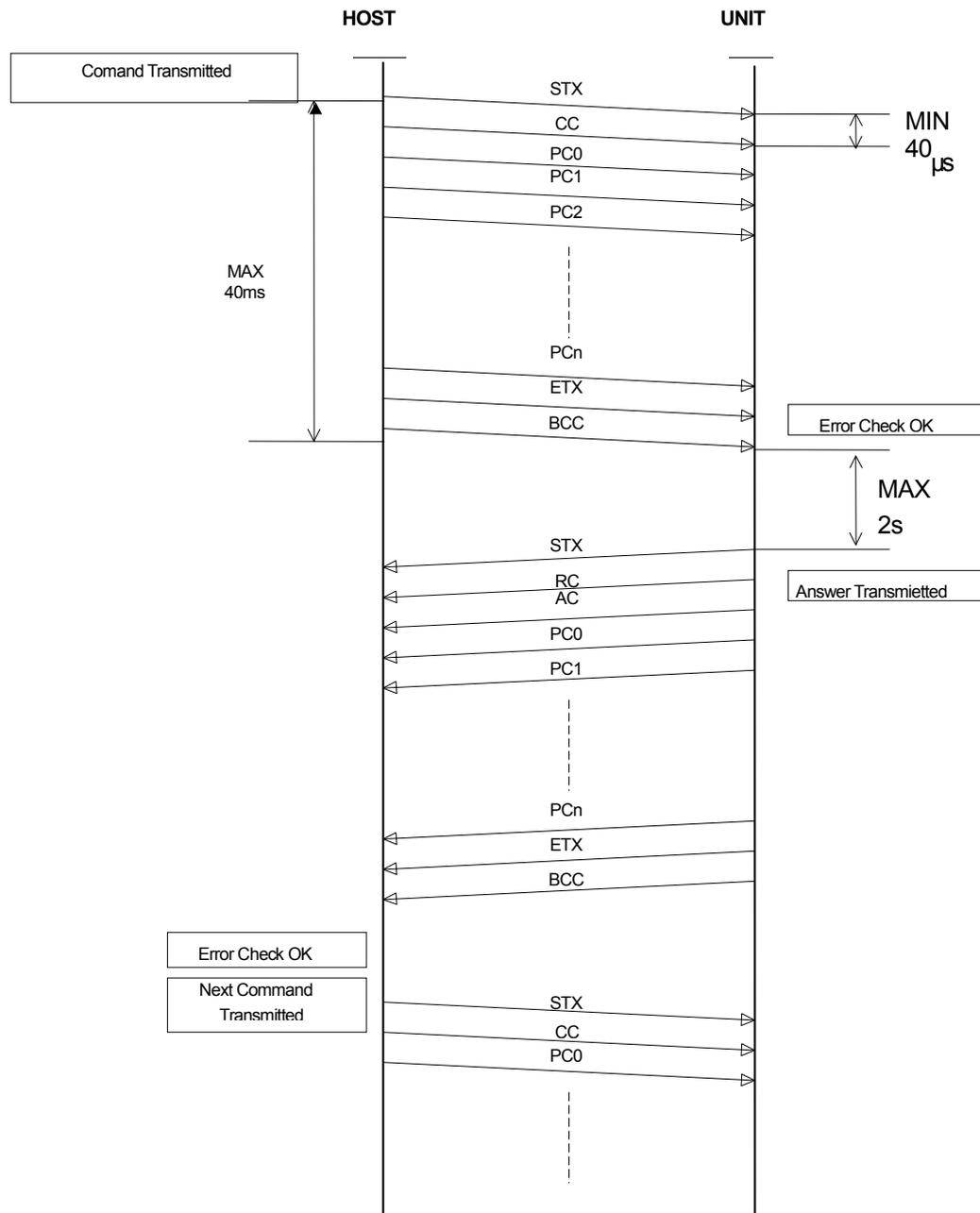
2) When a command is abnormally received（with or without an answer parameter）

```
                    HOST                          UNIT
 ┌──────────────────────┐
 │ Command Transmitted  │ │                       │
 └──────────────────────┘ │            STX        │
          ↑               ├──────────────────────→│            ↑
          │               │            CC         │            │
          │               ├──────────────────────→│            │
          │               │            PC0        │            │
          │               ├──────────────────────→│            │
          │               │            PC1        │            │
          │               ├──────────────────────→│            │
          │               │            PC2        │            │
          │               ├──────────────────────→│            │
        MAX               │             ┊         │          MAX
        40ms              │             ┊         │          100ms
          │               │             ┊         │            │
          │               │            PCn        │            │
          │               ├──────────────────────→│            │
          │               │            ETX        │  ┌──────────────────┐
          │               ├──────────────────────→│  │  Error Check NG  │
          ↓               │            BCC        │  └──────────────────┘
                          ├──────────────────────→│            │
                          │                       │            │
                          │            NAK        │            │
                          │←──────────────────────┤            ↓
 ┌──────────────────────┐ │                       │  ┌──────────────────┐
 │ Command Retransmitted│ │            STX        │  │    NAK return    │
 └──────────────────────┘ ├──────────────────────→│  └──────────────────┘
                          │            CC         │
                          ├──────────────────────→│
                          │            PC0        │
                          ├──────────────────────→│
                          │             ┊         │
                          │             ┊         │
                          │             ┊         │
```

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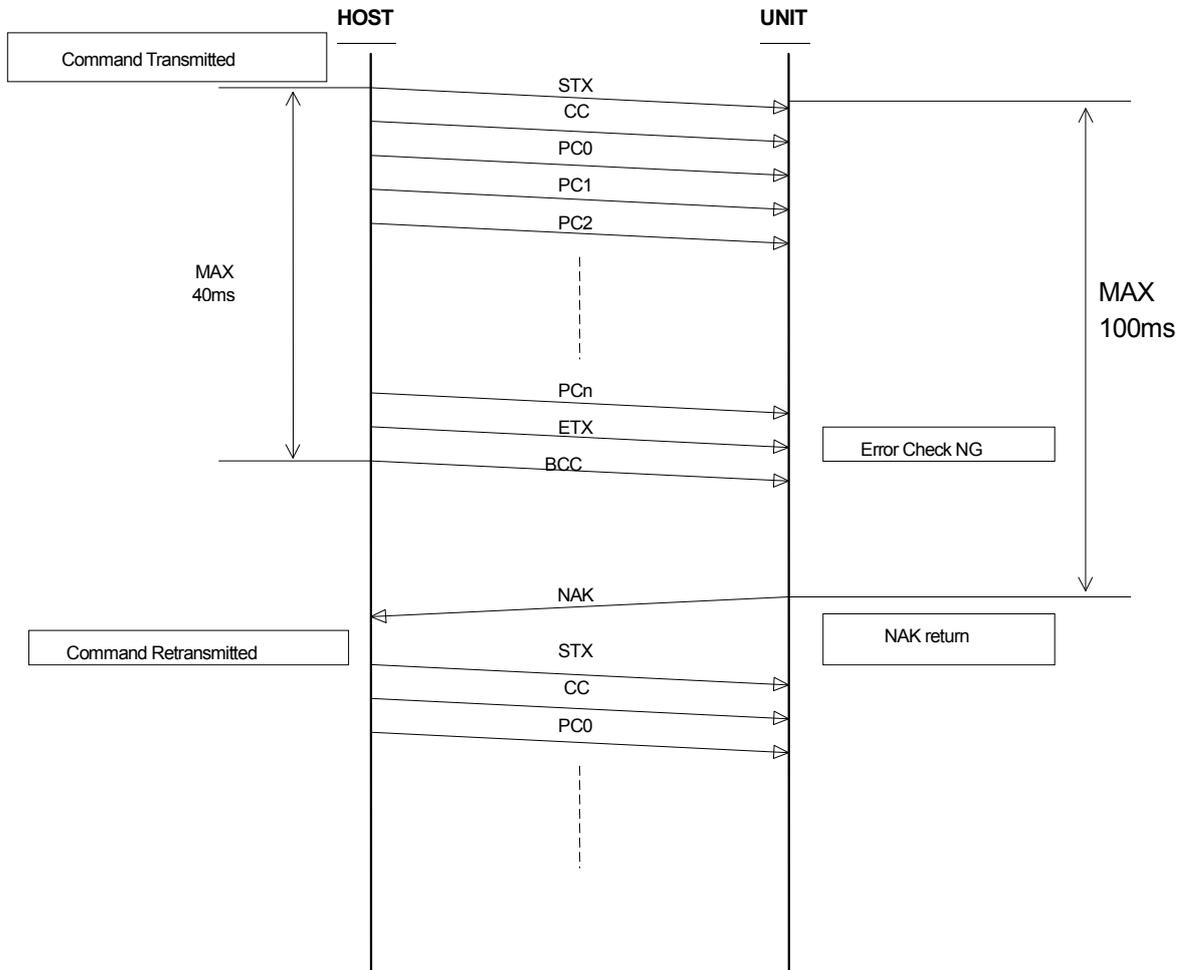
3) When a command with an answer parameter is normally received（unit）and an answer is abnormally received（host）

HOST   UNIT

Command Transmitted

STX
CC
PC0
PC1
PC2

MAX
40ms

PCn
ETX
BCC   Error Check OK

MAX
2s

STX
RC   Answer Transmitted
AC
PC0
PC1

PCn
ETX
Error Check NG   BCC

NAK
MAX
2s
STX
RC   Answer
AC   Retransmitted
PC0
PC1

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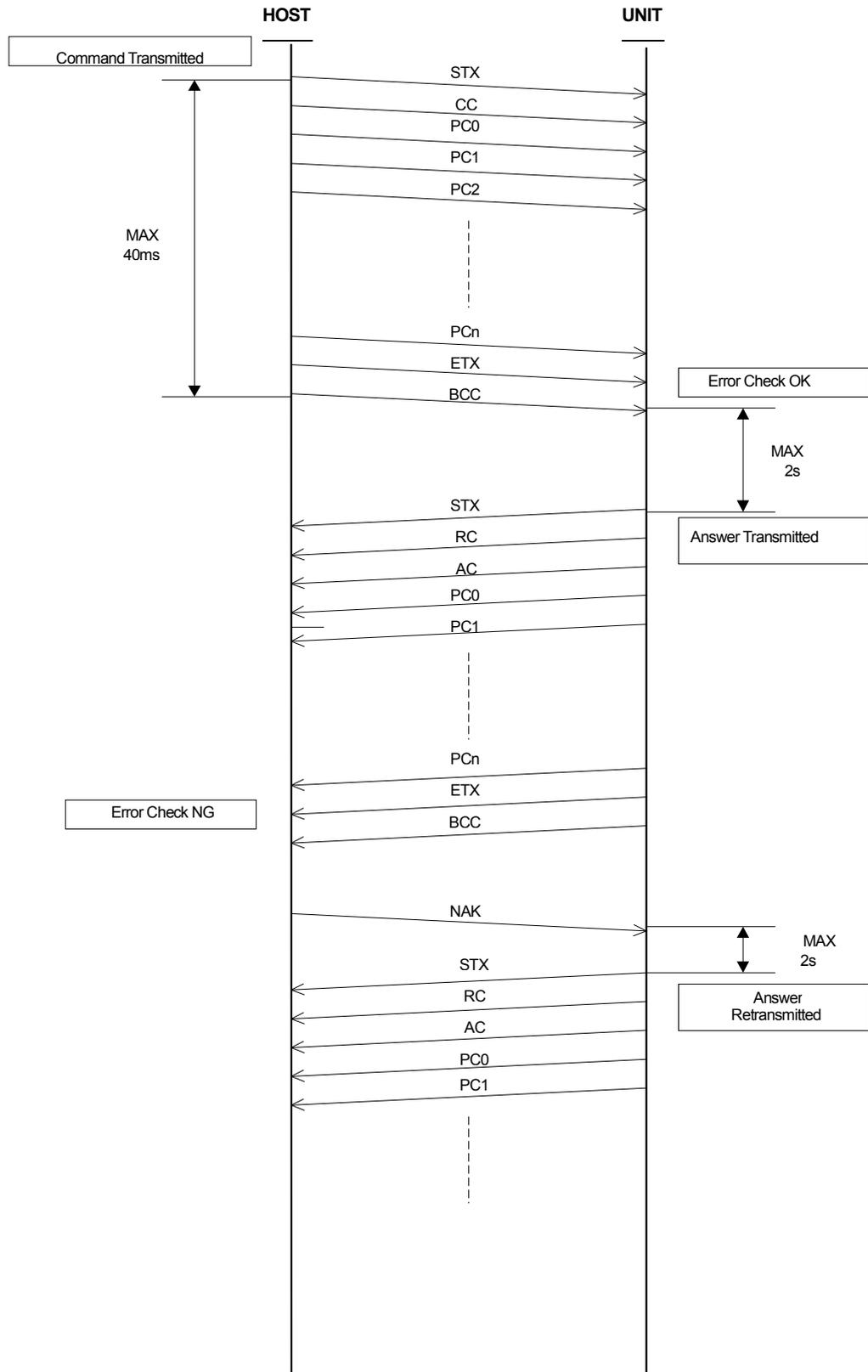
4) When a command with an answer parameter is normally received（unit）and an answer is normally received with ETB （host）
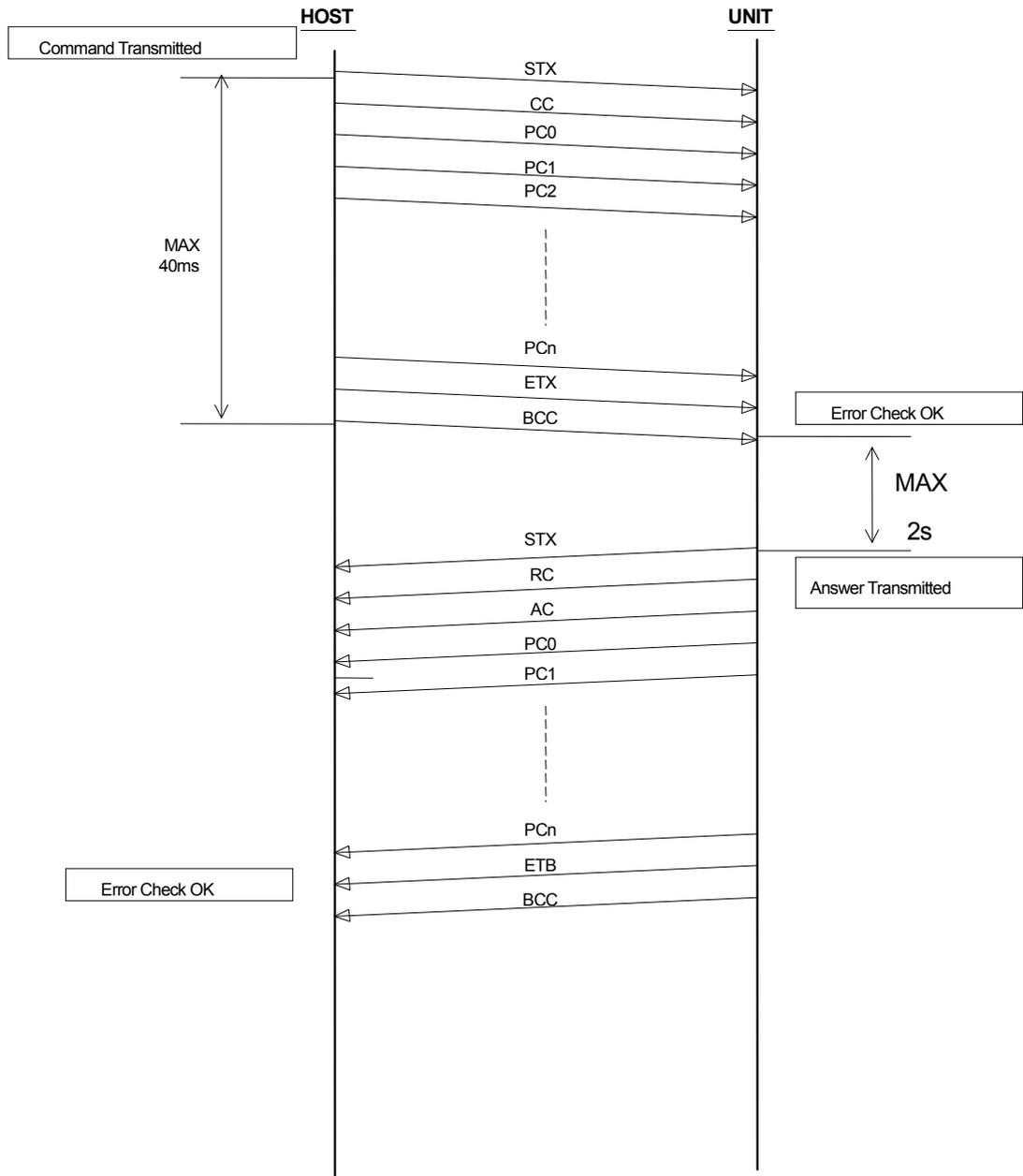
1-6. Classification of control codes

2Xh ：for POWER control
3Xh ：Command related to the acquisition of player information (like as status)
4Xh~5Xh：Basic operation command
61h~7Xh：Enhanced operation command

1-7. Control Code List

Please refer the attached code list (Marantz_RS-232C_Command_List-UD_BD_All.xls) for the details.

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1-8.   List of answer codes

No.	Status	Code (ASCII)	Description
1	Command OK	20h (SP)	Accepts the command.
2	Invalid	30h (0)	Invalid command.

1-9.   List of status codes

Here is a list of answer code types.
       3Xh : Status of the entire system
       4Xh : Status of each action mode

No.	Status	Code (ASCII)	Description
1	Stand-by	30h (0)	Stand-by
2	Disc Loading	31h (1)	Under disc loading.
3	Tray Opening	33h (3)	Disc tray open.
4	Tray Closing	34h (4)	Disc tray close.
5	No Disc	41h (A)	Disc not present
6	Stop	42h (B)	Stop
7	Play	43h (C)	Under disc playing.
8	Pause	44h (D)	Playback in process.
9	Scan Play	45h (E)	Scanning in process.
10	Slow Search Play	46h (F)	Slow scanning in process.
11	Setup	47h (G)	Setup mode
12	Resume Stop	49h (I)	Resume stop condition
13	Menu	4Ah (J)	Menu playback in process
14	Home Menu	4Bh (K)	Home Menu mode

1-10.　　　For reference: A detail of each command structure

- When this unit is set to be compatible with all commands and fails to accept a command (due to a communication error, for example), it returns NAK (15h) as an answer.

1-10-1.　　　Power ON

This command requests "Power on"(turn on the unit) from "Standby".
Same as the "POWER ON" button of Remote Controller

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Command code (' SP ')							
2	Reserve (00h)							
3	Reserve (00h)							
4	Reserve (00h)							
5	Reserve (00h)							
6	Reserve (00h)							
7	ETX (03h)							
8	BCCH (high-level)							
9	BCCL (low-level)							

1) Answers returned

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Reply code (' SP ')							
2	Answer code							
3~16	Master player type "＿＿UD7006＿＿" (ASCII CODE)							
17	ETX (03h)							
18	BCCH (high-level)							
19	BCCL (low-level)							

2) Special condition

- When power condition is "STANDBY", can accept "OPEN /CLOSE KEY", "PLAY KEY" and "POWER ON KEY" on the front panel and on the IR remote controler.
- There are two space before and after of the master player type.

1-10-2.　　　Power OFF

This command requests "Standby"(turn off the unit) from "Power On".
Same as the "Power Off" button of Remote Controller

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Command code ('!')							
2	Reserve (00h)							
3	Reserve (00h)							
4	Reserve (00h)							
5	Reserve (00h)							
6	Reserve (00h)							
7	ETX (03h)							
8	BCCH (high-level)							
9	BCCL (low-level)							

1) Answers returned

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Reply code ('!')							
2	Answer code							
3	ETX (03h)							
4	BCCH (high-level)							
5	BCCL (low-level)							

2) Special condition
   - None.

1-10-3.　　　Play

This command requests to play a disc. Same as the "PLAY" button of Remote Controller

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Command code ('@')							
2	Reserve (00h)							
3	Reserve (00h)							
4	Reserve (00h)							
5	Reserve (00h)							
6	Reserve (00h)							
7	ETX (03h)							
8	BCCH (high-level)							
9	BCCL (low-level)							

1) Answers returned

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Reply code ('@')							
2	Answer code							
3	ETX (03h)							
4	BCCH (high-level)							
5	BCCL (low-level)							

1-10-4. Stop

This command requests to stop a playback. Same as the "STOP" button of Remote Controller

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Command code ('A')							
2	Reserve (00h)							
3	Reserve (00h)							
4	Reserve (00h)							
5	Reserve (00h)							
6	Reserve (00h)							
7	ETX (03h)							
8	BCCH (high-level)							
9	BCCL (low-level)							

1) Answers returned

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Reply code ('A')							
2	Answer code							
3	ETX (03h)							
4	BCCH (high-level)							
5	BCCL (low-level)							

1-10-5. Pause

This commnd requests "Pause" of playback. Same as the "PAUSE" button of Remote Controller

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Command code ('B')							
2	Reserve (00h)							
3	Reserve (00h)							
4	Reserve (00h)							
5	Reserve (00h)							
6	Reserve (00h)							
7	ETX (03h)							
8	BCCH (high-level)							
9	BCCL (low-level)							

1) Answers returned

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Reply code ('B')							
2	Answer code							
3	ETX (03h)							
4	BCCH (high-level)							
5	BCCL (low-level)							

2) Special conditions
- This command is valid only when the status data is Play (E).
- This command is valid as step mode, when the status data is Pause (F).

1-10-6.   Skip

This command request to jump to previous or next track.

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Command code (' C ')							
2	Skip code (Forward : ' + ' or Reverse : ' - ')							
3	Reserve (00h)							
4	Reserve (00h)							
5	Reserve (00h)							
6	Reserve (00h)							
7	ETX (03h)							
8	BCCH (high-level)							
9	BCCL (low-level)							

1) Answers returned

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Reply code (' C ')							
2	Answer code							
3	Group number or title numbsr (100digit)							
4	Group number or title numbsr (10digit)							
5	Group number or title numbsr (1digit)							
6	Chapter or track number (1000digit)							
7	Chapter or track number (100digit)							
8	Chapter or track number (10digit)							
9	Chapter or track number (1digit)							
10	ETX (03h)							
11	BCCH (high-level)							
12	BCCL (low-level)							

2) Special conditions
- This command is valid only, when mode status data is Play (E) or Pause (F) .
- The unit can skip to a maximum track with Forward (+) and to a minimum track with Reverse (−) and when it goes to more than those track, the Order Track None (2) answer code is issued.

1-10-7.   Slow /Search

These commands request a search mode (Fast forward, Slow etc.)

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Command code (' D ')							
2	Skip code (Forward : ' + ' / Reverse : ' - ')							
3	Reserve (00h)							
4	Reserve (00h)							
5	Reserve (00h)							
6	Reserve (00h)							
7	ETX (03h)							
8	BCCH (high-level)							
9	BCCL (low-level)							

1) Answers returned

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Reply code (' D ')							
2	Answer code							
3	Search speed (*1)							
4	ETX (03h)							
5	BCCH (high-level)							
6	BCCL (low-level)							

(*1) Search speed

Code	Search Speed
31h (1)	SLOW x1 /8 (FWD)
32h (2)	SLOW x1 /6 (FWD)
33h (3)	SLOW x1 /4 (FWD)
34h (4)	SLOW x1 /2 (FWD)
35h (5)	SLOW x1 /8 (RVS)
36h (6)	SLOW x1 /6 (RVS)
37h (7)	SLOW x1 /4 (RVS)
38h (8)	SLOW x1 /2 (RVS)
3Bh (;)	FF 5
3Ch (<)	FF 4
3Dh (=)	FF 3
3Eh (>)	FF 2
3Fh (?)	FF 1
42h (B)	FR 5
43h (C)	FR 4
44h (D)	FR 3
45h (E)	FR 2
46h (F)	FR 1
47h (G)	NORMAL

2) Special conditions
   - This command is valid only when the mode status is Play (E) or Pause (F).
   - To make the search speed what you want, it needs to send some this command.
     Example: Now it's playing. If you make the search speed to FF X 6, it needs to send this command 3 times.
     Refer to next page for the operation matrix chart.

Operation matrix chart

Current condition			Slow /Search command	
			' + '	' - '
Fast Forward		1	FF 2	FR 1
		2	FF 3	
		3	FF 4	
		4	FF 5	
		5	Playing	
Normal Playback (x1 speed)			FF 1	FR 1
Fast Reverse		1	FF 1	FR 2
		2		FR 3
		3		FR 4
		4		FR 5
		5		Playing
During Pause			SLOW FWD 1/16	SLOW RVS 1/16
Slow	Forward	1/16	SLOW FWD 1/8	SLOW RVS 1/16
		1/8	SLOW FWD 1/4	
		1/4	SLOW FWD 1/2	
		1/2	Playing	
	Reverse	1/16	SLOW FWD 1/16	SLOW RVS 1/8
		1/8		SLOW RVS 1/4
		1/4		SLOW RVS 1/2
		1/2		Playing
Others			ignore	

1-10-8. Setup

This command is for the operation of initial setup. Same as the "SETUP" button of Remote Controller

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Command code (' E ')							
2	Reserve (00h)							
3	Reserve (00h)							
4	Reserve (00h)							
5	Reserve (00h)							
6	Reserve (00h)							
7	ETX (03h)							
8	BCCH (high-level)							
9	BCCL (low-level)							

1) Answers returned

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Reply code (' E ')							
2	Answer code							
3	ETX (03h)							
4	BCCH (high-level)							
5	BCCL (low-level)							

2) Special conditions
   - This command is valid only when the mode status is Stop (B) .

1-10-9.   Top Menu

This command requests to display the title menu of disc.

Same as the "TOP MENU" button of Remote Controller

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Command code (' F ')							
2	Reserve (00h)							
3	Reserve (00h)							
4	Reserve (00h)							
5	Reserve (00h)							
6	Reserve (00h)							
7	ETX (03h)							
8	BCCH (high-level)							
9	BCCL (low-level)							

1)   Answers returned

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Reply code (' F ')							
2	Answer code							
3	ETX (03h)							
4	BCCH (high-level)							
5	BCCL (low-level)							

1-10-10.   Menu

This command goes to the root menu in BD/DVD disc.

Same as the "POP UP MENU/MENU" button of Remote Controller

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Command code ('G ')							
2	Reserve (00h)							
3	Reserve (00h)							
4	Reserve (00h)							
5	Reserve (00h)							
6	Reserve (00h)							
7	ETX (03h)							
8	BCCH (high-level)							
9	BCCL (low-level)							

1)   Answers returned

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Reply code ('G ')							
2	Answer code							
3	ETX (03h)							
4	BCCH (high-level)							
5	BCCL (low-level)							

1-10-11.   Return

This command is for returning to a previous menu.

Same as the "RETURN" button of Remote Controller

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Command code ('H ')							
2	Reserve (00h)							
3	Reserve (00h)							
4	Reserve (00h)							
5	Reserve (00h)							
6	Reserve (00h)							
7	ETX (03h)							
8	BCCH (high-level)							
9	BCCL (low-level)							

1) Answers returned

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Reply code ('H ')							
2	Answer code							
3	ETX (03h)							
4	BCCH (high-level)							
5	BCCL (low-level)							

2) Special condition

   • This command is valid only when setup menu or display menu is displayed.

1-10-12.   Audio

This command is for selecting a dialog in the BD/DVD disc.

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Command code (' I ')							
2	Audio skip code (Forward : ' + ')							
3	Audio stream code(' + ':Primary /' - ' Secondary)							
4	Reserve (00h)							
5	Reserve (00h)							
6	Reserve (00h)							
7	ETX (03h)							
8	BCCH (high-level)							
9	BCCL (low-level)							

Please refer the attached code list (Marantz RS-232C Command List-UD BD All.xls) for the details.

1)   Answers returned

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Reply code (' I ')							
2	Answer code							
3	Current audio stream channel (digit 10)							
4	Current audio stream channel (digit 1)							
5	Total audio stream channel (digit 10)							
6	Total audio stream channel (digit 1)							
7	Audio format (*1)							
8	Audio channel (*2)							
9	Dialog (*3)							
10	ETX (03h)							
11	BCCH (high-level)							
12	BCCL (low-level)							

(*1) Audio format code

Code	Audio Format
31h (1)	Dolby Digital
32h (2)	DTS
33h (3)	MPEG
34h (4)	LPCM
35h (5)	PPCM
36h (6)	UNKNOWN
37h (7)	DSD
38h (8)	DD+
39h (9)	DTS-HD
3Ah (:)	DOLBY TrueHD
3Bh (;)	MP3
3Ch (<)	AAC
3Dh (=)	WMA

(*2) Audio channel code

Code	Audio Channel
31h (1)	1 ch
32h (2)	2 ch
33h (3)	2.1 ch
34h (4)	3 ch
35h (5)	3.1 ch
36h (6)	4 ch
37h (7)	4.1 ch
38h (8)	5 ch
39h (9)	5.1 ch
3Ah (:)	6 ch
3Bh (;)	L/R (CD /MP3)
3Ch (<)	R (CD)
3Dh (=)	L (CD)
3Eh (>)	UNKNOWN
3Fh (?)	6.1ch
40h (@)	7 ch
41h (A)	7.1ch
42h (B)	8ch

(*3) Dialog code

Code	Dialogl
31h (1)	JPN
32h (2)	ENG
33h (3)	FRA
34h (4)	DEU
35h (5)	ITA
36h (6)	ESP
37h (7)	NLD
38h (8)	CHI
39h (9)	RUS
3Ah (:)	KOR
3Bh (;)	OTHER

1-10-13.   Subtitle

This selects subtitle language in the BD/ DVD disc.

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Command code (' J ')							
2	Subtitle skip code (Forward : ' + ')							
3	Subtitle stream code (31h(1):Primary / 32h(2):Primary Style / 33h(3):Secondary)							
4	Reserve (00h)							
5	Reserve (00h)							
6	Reserve (00h)							
7	ETX (03h)							
8	BCCH (high-level)							
9	BCCL (low-level)							

Please refer the attached code list (Marantz RS-232C Command List-UD BD All.xls) for the details.

1) Answers returned

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Reply code (' J ')							
2	Answer code							
3	Current subtitle stream channel (digit 100)							
4	Current subtitle stream channel (digit 10)							
5	Current subtitle stream channel (digit 1)							
6	Total subtitle stream channel (digit 100)							
7	Total subtitle stream channel (digit 10)							
8	Total subtitle stream channel (digit 1)							
9	Subtitle language (*1)							
10	ETX (03h)							
11	BCCH (high-level)							
12	BCCL (low-level)							

(*1) Subtitle language code

Code	Dialogl
31h (1)	JPN
32h (2)	ENG
33h (3)	FRA
34h (4)	DEU
35h (5)	ITA
36h (6)	ESP
37h (7)	NLD
38h (8)	CHI
39h (9)	RUS
3Ah (:)	KOR
3Bh (;)	OTHER

2) Special condition
- When the value of the "current subtitle stream channel(both digit10 and digit1)" is zero, it   means the subtitle is OFF.

1-10-14.   Angle

This command is for selecting an angle position in DVD. Same as the "ANGLE" button of Remote Controller

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Command code (' K ')							
2	Angle skip code (Forward : ' + ')							
3	Reserve (00h)							
4	Reserve (00h)							
5	Reserve (00h)							
6	Reserve (00h)							
7	ETX (03h)							
8	BCCH (high-level)							
9	BCCL (low-level)							

1) Answers returned

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Reply code (' K ')							
2	Answer code							
3	Current angle stream channel							
4	Total angle stream channel							
5	ETX (03h)							
6	BCCH (high-level)							
7	BCCL (low-level)							

1-10-15.   Direct Select

This directly selects specify track in the disc.

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Command code (' L ')							
2	Search Mode code (*1)							
3	Track number (1000 digits) (*2)							
4	Track number (100 digits) (*3)							
5	Track number (10 digits) (*4)							
6	Track number (1 digit) (*5)							
7	ETX (03h)							
8	BCCH (high-level)							
9	BCCH (low-level)							

(*1) Search Mode code

Code	Search Mode
31h (1)	Select Group / Title number
32h (2)	Select Track / Chapter number

(*2) (*3) (*4) (*5) Direct Select Code (No.0001-9999)

Answers returned

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Reply code (' L ')							
2	Answer code							
3	Group number or title number (100 digit)							
4	Group number or title number (10 digit)							
5	Group number or title number (1 digit)							
6	Chapter number or track number (1000 digit)							
7	Chapter number or track number (100 digit)							
8	Chapter number or track number (10 digit)							
9	Chapter number or track number (1 digit)							
10	ETX (03h)							
11	BCCH (high-level)							
12	BCCH (low-level)							

1-10-16.   Cursor

These command are for controlling cursor of MSD menu.
Same as the each cursor button of Remote Controller

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Command code (' M ')							
2	Cursor code (*1)							
3	Reserve (00h)							
4	Reserve (00h)							
5	Reserve (00h)							
6	Reserve (00h)							
7	ETX (03h)							
8	BCCH (high-level)							
9	BCCH (low-level)							

(*1) Cusor code

Code	Cursor
31h (1)	LEFT
32h (2)	UP
33h (3)	RIGHT
34h (4)	DOWN

1) Answers returned

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Reply code (' M ')							
2	Answer code							
3	ETX (03h)							
4	BCCH (high-level)							
5	BCCH (low-level)							

1-10-17.   Enter

This command is for a determination which is selected item in OSD Menu etc.
Same as the "ENTER" button of Remote Controller

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Command code (' N ')							
2	Reserve (00h)							
3	Reserve (00h)							
4	Reserve (00h)							
5	Reserve (00h)							
6	Reserve (00h)							
7	ETX (03h)							
8	BCCH (high-level)							
9	BCCH (low-level)							

1) Answers returned

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Reply code ('N ')							
2	Answer code							
3	ETX (03h)							
4	BCCH (high-level)							
5	BCCH (low-level)							

1-10-18.　　Sound Mode (Direct)

These commands are for selecting a playback area (SA-CD(Stereo), SA-CD(Multi) or CD) of Hybrid disc directly.

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Command code (' O ')							
2	Function code (*1)							
3	Reserve (00h)							
4	Reserve (00h)							
5	Reserve (00h)							
6	Reserve (00h)							
7	ETX (03h)							
8	BCCH (high-level)							
9	BCCH (low-level)							

(*1) Layer code

Code	Layer Mode
31h (1)	Stereo Area of SA-CD Layer
32h (2)	Multi Ch Area of SA-CD Layer
33h (3)	CD Layer

1) Answers returned

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Reply code (' O ')							
2	Answer code							
3	ETX (03h)							
4	BCCH (high-level)							
5	BCCH (low-level)							

1-10-19.   OPEN／CLOSE

This command requests OPEN or CLOSE action of Disc tray.

Same as the "OPEN/CLOSE" button of Remote Controller

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Command code (' a ')							
2	Reserve (00h)							
3	Reserve (00h)							
4	Reserve (00h)							
5	Reserve (00h)							
6	Reserve (00h)							
7	ETX (03h)							
8	BCCH (high-level)							
9	BCCH (low-level)							

1) Answers returned

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Reply code (' a ')							
2	Answer code							
3	ETX (03h)							
4	BCCH (high-level)							
5	BCCH (low-level)							

1-10-20.   HDMI Mode

This command can control the Y/Cb/Cr or RGB format of HDMI output.

Same as the "HDMI MODE" button of Remote Controller

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Command code (' c ')							
2	Reserve (00h)							
3	Reserve (00h)							
4	Reserve (00h)							
5	Reserve (00h)							
6	Reserve (00h)							
7	ETX (03h)							
8	BCCH (high-level)							
9	BCCH (low-level)							

2) Answers returned

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Reply code (' c ')							
2	Answer code							
3	ETX (03h)							
4	BCCH (high-level)							
5	BCCH (low-level)							

1-10-21. HDMI Resolution

This command can change the resolution of HDMI output.
Same as the "HDMI MODE" button of Remote Controller

Byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Command code (' d ')							
2	Reserve (00h)							
3	Reserve (00h)							
4	Reserve (00h)							
5	Reserve (00h)							
6	Reserve (00h)							
7	ETX (03h)							
8	BCCH (high-level)							
9	BCCH (low-level)							

1) Answers returned

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Reply code (' d ')							
2	Answer code							
3	ETX (03h)							
4	BCCH (high-level)							
5	BCCH (low-level)							

1-10-22. PROGRAM / DIRECT

This command is for changing a Program Mode On /Off.

Same as the "PROG / DIRECT" button of Remote Controller

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Command code (' e ')							
2	Reserve (00h)							
3	Reserve (00h)							
4	Reserve (00h)							
5	Reserve (00h)							
6	Reserve (00h)							
7	ETX (03h)							
8	BCCH (high-level)							
9	BCCH (low-level)							

1) Answers returned

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Reply code (' e ')							
2	Answer code							
3	ETX (03h)							
4	BCCH (high-level)							
5	BCCH (low-level)							

1-10-23. CLEAR

This command allows to erase a programmed tracks.

Same as the "CLEAR" button of Remote Controller

Byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Command code (' f ')							
2	Reserve (00h)							
3	Reserve (00h)							
4	Reserve (00h)							
5	Reserve (00h)							
6	Reserve (00h)							
7	ETX (03h)							
8	BCCH (high-level)							
9	BCCH (low-level)							

1) Answers returned

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Reply code (' f ')							
2	Answer code							
3	ETX (03h)							
4	BCCH (high-level)							
5	BCCH (low-level)							

1-10-24.   CALL

This command can display Programmed tracks on FL Display/OSD.

Same as the "CALL" button of Remote Controller

Byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Command code (' g ')							
2	Reserve (00h)							
3	Reserve (00h)							
4	Reserve (00h)							
5	Reserve (00h)							
6	Reserve (00h)							
7	ETX (03h)							
8	BCCH (high-level)							
9	BCCH (low-level)							

2) Answers returned

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Reply code (' g')							
2	Answer code							
3	ETX (03h)							
4	BCCH (high-level)							
5	BCCH (low-level)							

1-10-25.   DISPLAY

This command requests to display the information on screen.

Same as the "DISPLAY" button of Remote Controller

Byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Command code (' h ')							
2	Reserve (00h)							
3	Reserve (00h)							
4	Reserve (00h)							
5	Reserve (00h)							
6	Reserve (00h)							
7	ETX (03h)							
8	BCCH (high-level)							
9	BCCH (low-level)							

1) Answers returned

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Reply code (' h ')							
2	Answer code							
3	ETX (03h)							
4	BCCH (high-level)							
5	BCCH (low-level)							

1-10-26.　　　REPEAT

This command is for selecting a Repeat Mode.

Same as the "REPEAT" and "REPEAT A-B" button of Remote Controller

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Command code ('i')							
2	Repeat code (*1)							
3	Reserve (00h)							
4	Reserve (00h)							
5	Reserve (00h)							
6	Reserve (00h)							
7	ETX (03h)							
8	BCCH (high-level)							
9	BCCH (low-level)							

(*1) Repeat code

Code	Repeat Mode
31h (1)	REPEAT
32h (2)	REPEAT A-B

1)　Answers returned

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Reply code ('i')							
2	Answer code							
3	ETX (03h)							
4	BCCH (high-level)							
5	BCCH (low-level)							

1-10-27.　　　PAGE

This command request to select a picture in DVD-Audio disc.

Same as the "PAGE " button of Remote Controller

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Command code ('j')							
2	Page code (*1)							
3	Reserve (00h)							
4	Reserve (00h)							
5	Reserve (00h)							
6	Reserve (00h)							
7	ETX (03h)							
8	BCCH (high-level)							
9	BCCH (low-level)							

(*1) Page code

Code	Repeat Mode
31h (1)	+ (Plus)

2)　Answers returned

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Reply code ('j')							
2	Answer code							
3	ETX (03h)							
4	BCCH (high-level)							
5	BCCH (low-level)							

1-10-28.　　RANDOM

This command is for selecting a Random play mode.

Same as the "RANDOM" button of Remote Controller

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Command code ('k')							
2	Reserve (00h)							
3	Reserve (00h)							
4	Reserve (00h)							
5	Reserve (00h)							
6	Reserve (00h)							
7	ETX (03h)							
8	BCCH (high-level)							
9	BCCH (low-level)							

1)　Answers returned

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Reply code ('k')							
2	Answer code							
3	ETX (03h)							
4	BCCH (high-level)							
5	BCCH (low-level)							

1-10-29.　　DIMMER

This command is for selecting a brightness mode of FL Display of front panel.

Same as the "DIMMER" button of Remote Controller

Byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Command code ('n')							
2	Reserve (00h)							
3	Reserve (00h)							
4	Reserve (00h)							
5	Reserve (00h)							
6	Reserve (00h)							
7	ETX (03h)							
8	BCCH (high-level)							
9	BCCH (low-level)							

1)　Answers returned

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Reply code ('n')							
2	Answer code							
3	ETX (03h)							
4	BCCH (high-level)							
5	BCCH (low-level)							

1-10-30.   PICTURE ADJUST

This command requests to enter Picture adjust mode.
Same as the "PICT. ADJUST" button of Remote Controller

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Command code (' o ')							
2	Reserve (00h)							
3	Reserve (00h)							
4	Reserve (00h)							
5	Reserve (00h)							
6	Reserve (00h)							
7	ETX (03h)							
8	BCCH (high-level)							
9	BCCH (low-level)							

1)   Answers returned

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Reply code (' o ')							
2	Answer code							
3	ETX (03h)							
4	BCCH (high-level)							
5	BCCH (low-level)							

1-10-31.   PURE DIRECT

This command is for selecting a pure direct playback mode.

Same as the "PURE DIRECT" button of Remote Controller

Byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Command code (' p ')							
2	Pure Direct Code (31h)							
3	Reserve (00h)							
4	Reserve (00h)							
5	Reserve (00h)							
6	Reserve (00h)							
7	ETX (03h)							
8	BCCH (high-level)							
9	BCCH (low-level)							

1) Answers returned

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Reply code (' p ')							
2	Answer code							
3	ETX (03h)							
4	BCCH (high-level)							
5	BCCH (low-level)							

1-10-32.   Color Key

This command is for selecting each color key.

Same as the each color button of Remote Controller

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Command code (' r ')							
2	Function code (*1)							
3	Reserve (00h)							
4	Reserve (00h)							
5	Reserve (00h)							
6	Reserve (00h)							
7	ETX (03h)							
8	BCCH (high-level)							
9	BCCH (low-level)							

(*1) Function code

Code	Transfer Mode
31h (1)	RED
32h (2)	GREEN
33h (3)	BULE
34h (4)	YELLOW

2) Answers returned

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Reply code (' r ')							
2	Answer code							
3	ETX (03h)							
4	BCCH (high-level)							
5	BCCH (low-level)							

1-10-33. Mode

To call various functions.

Same as the "MODE" button of Remote Controller

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Command code ('t')							
2	Direct Select Code 1st (*1)							
3	Direct Select Code 2nd (*2)							
4	Direct Select Code 3rd (*3)							
5	Direct Select Code 4th (*4)							
6	Reserve (00h)							
7	ETX (03h)							
8	BCCH (high-level)							
9	BCCH (low-level)							

(*1) (*2) (*3) (*4) Direct Select Code

Please refer the attached code list (Marantz_RS-232C_Command_List-UD_BD_All.xls) for the details.

1) Answers returned

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Reply code ('t')							
2	Answer code							
3	ETX (03h)							
4	BCCH (high-level)							
5	BCCH (low-level)							

1-10-34. USB / DISC

This command is for selecting a playback source from "USB or DISC".

Same as the "USB / DISC" button on the front panel

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Command code ('z')							
2	Reserve (00h)							
3	Reserve (00h)							
4	Reserve (00h)							
5	Reserve (00h)							
6	Reserve (00h)							
7	ETX (03h)							
8	BCCH (high-level)							
9	BCCH (low-level)							

2) Answers returned

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Reply code ('z')							
2	Answer code							
3	ETX (03h)							
4	BCCH (high-level)							
5	BCCH (low-level)							

1-10-35.   SEARCH Mode

This command is for changing a search mode "Title/Chapert/Time".
Same as the "SEARCH" button of Remote Controller

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Command code (' { ')							
2	Reserve (00h)							
3	Reserve (00h)							
4	Reserve (00h)							
5	Reserve (00h)							
6	Reserve (00h)							
7	ETX (03h)							
8	BCCH (high-level)							
9	BCCH (low-level)							

3)   Answers returned

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Reply code (' { ')							
2	Answer code							
3	ETX (03h)							
4	BCCH (high-level)							
5	BCCH (low-level)							

1-10-36.   Sound Mode (Toggle)

This command is for selecting a playback area of SA-CD (Stereo/Multi) / CD Hybrid disc.
Same as the "SOUND MODE" button of Remote Controller

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Command code (' | ')							
2	Reserve (00h)							
3	Reserve (00h)							
4	Reserve (00h)							
5	Reserve (00h)							
6	Reserve (00h)							
7	ETX (03h)							
8	BCCH (high-level)							
9	BCCH (low-level)							

4)   Answers returned

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Reply code (' | ')							
2	Answer code							
3	ETX (03h)							
4	BCCH (high-level)							
5	BCCH (low-level)							

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1-10-37.　　Aspect ratio

This command is for selecting a Aspect ratio mode.

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX　(　02h　)							
1	Command code ('x')							
2	Aspect (*1)							
3	Reserve　(00h)							
4	Reserve　(00h)							
5	Reserve　(00h)							
6	Reserve　(00h)							
7	ETX　(　03h　)							
8	BCCH　(　high-level　)							
9	BCCH　(　low-level　)							

(*1)　Aspect code

Code	Aspect
31h (1)	16：9 Squeeze
32h (2)	16：9 Wide
33h (3)	4：3 Pan Scan
34h (4)	4：3 Letter Box

2)　Answers　returned

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX　(02h)							
1	Reply　code　(　'x'　)							
2	Answer　code							
3	ETX　(　03h　)							
4	BCCH　(　high-level　)							
5	BCCH　(　low-level　)							

1-10-38.   Progressive Mode

This command can change the progressive mode

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Command code ('u')							
2	Progressive Mode code (*1)							
3	Reserve (00h)							
4	Reserve (00h)							
5	Reserve (00h)							
6	Reserve (00h)							
7	ETX (03h)							
8	BCCH (high-level)							
9	BCCH (low-level)							

(*1) Progressive Mode code

Code	Progressive Mode
31h (1)	AUTO
32h (2)	VIDEO
33h (3)	FILM

3) Answers returned

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Reply code ('u')							
2	Answer code							
3	ETX (03h)							
4	BCCH (high-level)							
5	BCCH (low-level)							

1-10-39.   Audio Output Channels

This command is for selecting Audio output channels.

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Command code ('w')							
2	Audio Out (*1)							
3	Reserve (00h)							
4	Reserve (00h)							
5	Reserve (00h)							
6	Reserve (00h)							
7	ETX (03h)							
8	BCCH (high-level)							
9	BCCH (low-level)							

(*1) Audio Out code

Code		Audio Out
31h	(1)	2.0ch(2.1ch/None/Stereo)
32h	(2)	5.1ch(5.1ch/LFE)
33h	(2)	7.1ch(7.1ch/LFE)

4) Answers returned

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Reply code ('w')							
2	Answer code							
3	ETX (03h)							
4	BCCH (high-level)							
5	BCCH (low-level)							

1-10-40. Home

This command is for displaying HOME menu on screen.

Same as the "HOME" button of Remote Controller

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Command code (' P ')							
2	Reserve (00h)							
3	Reserve (00h)							
4	Reserve (00h)							
5	Reserve (00h)							
6	Reserve (00h)							
7	ETX (03h)							
8	BCCH (high-level)							
9	BCCL (low-level)							

3) Answers returned

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Reply code (' P ')							
2	Answer code							
3	ETX (03h)							
4	BCCH (high-level)							
5	BCCL (low-level)							

1-10-41. Numeric Key

Numeric Keys

Same as the "10key" button of Remote Controller

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Command code (' Z ')							
2	Number Code (*1)							
3	Reserve (00h)							
4	Reserve (00h)							
5	Reserve (00h)							
6	Reserve (00h)							
7	ETX (03h)							
8	BCCH (high-level)							
9	BCCL (low-level)							

(*1) Number Code

Code	Number Data
30h (0)	0 Key
31h (1)	1 Key
32h (2)	2 Key
33h (3)	3 Key
34h (4)	4 Key
35h (5)	5 Key
36h (6)	6 Key
37h (7)	7 Key
38h (8)	8 Key
39h (9)	9 Key
3Ah (:)	+10 Key

4) Answers returned

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Reply code (' Z ')							
2	Answer code							
3	ETX (03h)							
4	BCCH (high-level)							
5	BCCL (low-level)							

1-11.   Appendix: Status Command specification

1-11-1.   Request System Status

This command requests a current status of disc on playback.

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Command code (' 0 ')							
2	Reserve (00h)							
3	Reserve (00h)							
4	Reserve (00h)							
5	Reserve (00h)							
6	Reserve (00h)							
7	ETX (03h)							
8	BCCH (high-level)							
9	BCCL (low-level)							

1) Answers returned

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Reply code (' 0 ')							
2	Answer code							
3	Disc type code (*1)							
4	Audio format code (*2)							
5	Audio channel code (*3)							
6	Dialog code (*4)							
7	Subtitle code (*5)							
8	Angle code (*6)							
9	Status code							
10	Play mode code (*7)							
11	Group or Title number information (100 digits)							
12	Group or Title number information (10 digits)							
13	Group or Title number information (1 digits)							
14	Track or Chapter number information (1000 digits)							
15	Track or Chapter number information (100 digits)							
16	Track or Chapter number information (10 digits)							
17	Track or Chapter number information (1 digits)							
18	Time mode (*8)							
19	Elapsed time (hour, 10 digits)							
20	Elapsed time (hour, 1 digits)							
21	Elapsed time (minutes, 10 digits)							
22	Elapsed time (minutes, 1 digits)							
23	Elapsed time (second, 10 digits)							
24	Elapsed time (second, 1 digits)							
25	ETX (03h)							
26	BCCH (high-level)							
27	BCCL (low-level)							

(*1) Disc type code

Code	Disc Type
31h (1)	DVD VIDEO
32h (2)	DVD AUDIO
33h (3)	Reserved
34h (4)	CD-DA
35h (5)	CD-ROM
36h (6)	UNKNOWN
37h (7)	SA-CD
38h (8)	DVD VR
39h (9)	BDMV
3Ah (:)	BDAV
3Bh (;)	AVCHD
3Ch (<)	Web stream
3Dh (=)	DLNA
3Eh (>)	AVCREC
3Fh (?)	External memory

(*2) Audio format code

Code	Audio Format
31h (1)	DOLBY DIGITAL
32h (2)	DTS
33h (3)	MPEG
34h (4)	LPCM
35h (5)	PPCM
36h (6)	UNKNOWN
37h (7)	DSD
38h (8)	DD+
39h (9)	DTS-HD
3Ah (:)	DOLBY TrueHD
3Bh (;)	MP3
3Ch (<)	AAC
3Dh (=)	WMA

(*3) Audio channel code

Code	Audio Channel
31h (1)	1 ch
32h (2)	2 ch
33h (3)	2.1 ch
34h (4)	3 ch
35h (5)	3.1 ch
36h (6)	4 ch
37h (7)	4.1 ch
38h (8)	5 ch
39h (9)	5.1 ch
3Ah (:)	6 ch
3Bh (;)	L/R (CD/MP3)
3Ch (<)	R (CD)
3Dh (=)	L (CD)
3Eh (>)	UNKNOWN
3Fh (?)	6.1ch
40h (@)	7 ch
41h (A)	7.1ch
42h (B)	8ch

(*4) Dialog code

Code	Dialog
31h (1)	JPN
32h (2)	ENG
33h (3)	FRA
34h (4)	DEU
35h (5)	ITA
36h (6)	ESP
37h (7)	NLD
38h (8)	CHI
39h (9)	RUS
3Ah (:)	KOR
3Bh (;)	OTHER

(*5) Subtitle code

Code	Subtitle
31h (1)	JPN
32h (2)	ENG
33h (3)	FRA
34h (4)	DEU
35h (5)	ITA
36h (6)	ESP
37h (7)	NLD
38h (8)	CHI
39h (9)	RUS
3Ah (:)	KOR
3Bh (;)	OTHER

(*6) Angle code

Code	Angle
31h (1)	1
32h (2)	2
33h (3)	3
34h (4)	4
35h (5)	5
36h (6)	6
37h (7)	7
38h (8)	8
39h (9)	9

(*7) Play mode code

Code	Play Mode
31h (1)	NORMAL
32h (2)	PROGRAM
33h (3)	RANDOM

(*8) Time Mode code

Code	Time Mode
31h (1)	SINGLE ELAPSED
32h (2)	SINGLE REMAIN
33h (3)	TOTAL ELAPSED
34h (4)	TOTAL REMAIN
35h (5)	CHAPTER ELAPSED
36h (6)	CHAPTER REMAIN
37h (7)	TITLE ELAPSED
38h (8)	TITLE REMAIN
39h (9)	TRACK ELAPSED
3Ah (:)	TRACK REMAIN
3Bh (;)	GROUP ELAPESD
3Ch (<)	GROUP REMAIN

2) Special conditions

- When the disc does not set to DVD mechanism and disc loading process does not finish, group number, title number, track number, and chapter number are set ('0').
- When the disc does not set to DVD mechanism and disc loading process does not finish, elapsed time information are set ('0').
- When power condition is "STANDBY", can accept "REQUEST SYSTEM STATUS", "POWER ON KEY", "REQUEST CPU VERSION", and "REQUEST ERROR STATUS". Incase of another command, returns "COMMAND FORMAT ERROR ('1') " in the "ANSWER CODE"

Note : When you need these data, you should send this command each time.

1-11-2.　　AUTO TRANSFER MODE

This command can select the Status Transfer Mode.

Byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Command code (' q ')							
2	Transfer Mode code (*1)							
3	Reserve (00h)							
4	Reserve (00h)							
5	Reserve (00h)							
6	Reserve (00h)							
7	ETX (03h)							
8	BCCH (high-level)							
9	BCCH (low-level)							

(*1) Transfer Mode code

Code	Transfer Mode
31h (1)	One Time
32h (2)	Auto

1) Answers returned

byte ¥ bit	7	6	5	4	3	2	1	0
0	STX (02h)							
1	Reply code (' q ')							
2	Answer code							
3	ETX (03h)							
4	BCCH (high-level)							
5	BCCH (low-level)							