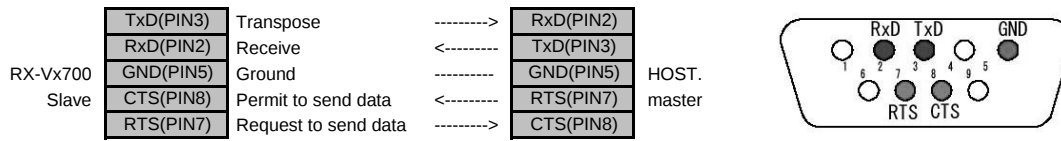


1. Outline

RX-Vx700 in this protocol refers to the RX-V1700 and RX-V2700.

1.1 Connection

5 wire system



*When not connected, data transmission to RX-Vx700 is prohibited (CTS port pull down).

1.2 RS-232C Settings

*Full duplex, start-stop synchronization communication

Baud rate 9600bps
 Data bits 8
 Parity No
 Stop bit 1bit
 Handshaking Hardware

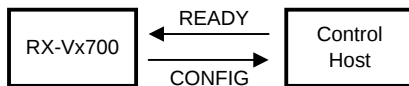
*The RX-Vx700 RTS port outputs at low level when the AC plug is disconnected.
 If RTS output stays low even when the AC plug is connected, a problem may occur.

1.3 Data block timeout

It takes the RX-Vx700 a maximum of 500msec to send one data block. If a complete data block is not received within 500msec, cancel the transaction. A problem may occur.

2. Start Commands

2.1 Starting Communication

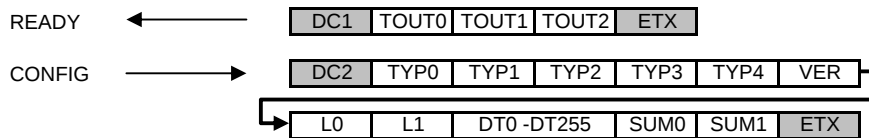


The Ready command is the first command to be sent to the RX-Vx700 at the start of communication. TOUT0 - 2 in the Ready Command sets communication timeout.

RX-Vx700 sends a Configuration command (Model ID, software version and setting data) to the host in reply to the Ready command.

The RX-Vx700 will send a Configuration command within 1 sec. after receiving a Ready command from the host. If not, send a Ready Command again (max 5 times).

If the RX-Vx700 won't send a Configuration command after the fifth retry, cancel the transaction because there may be a problem.



*TYPx Model ID = "R0210" (RX-V1700)

Model ID = "R0212" (RX-V2700)

*VER Software Version

*SUM The sum of all data except for the header and footer

function name	function	data (ASCII)	range (HEX)
TOUT0 - 2	communication timeout	0 - 9, A - F	0 - 0xFFFF

*timeout between the header and the footer

*timeout=0 means no timeout

function name	function	data (ASCII)	range (HEX)
TYP0 - 4	model ID	0 - 9, A - F	voluntary
VER	software version	A - Z	voluntary
L0 - 1	data length	0 - 9, A - F	0 - 0xFF
DT0 - 255	data	0 - 9, A - F	0 - 0xF
SUM0	upper 4 bit of SUM	0 - 9, A - F	0 - 0xF
SUM1	lower 4 bit of SUM	0 - 9, A - F	0 - 0xF

*Data Structure of Configuration Command

When the power is OFF, only DT0,1,...,9 are sent to the Host.

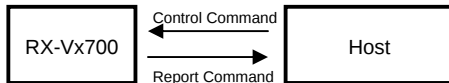
data	Report			
DT0	-	Fixed	Baud Rate	Don't care ('@')
DT1	-	Fixed	Receive Buffer	Don't care ('E')
DT2	-	Fixed	Receive Buffer	Don't care ('0')
DT3	-	Fixed	Command Timeout	Don't care ('1')
DT4	-	Fixed	Command Timeout	Don't care ('9')
DT5	-	Fixed	Command Timeout	Don't care ('0')
DT6	-	Fixed	Handshaking	Don't care ('0')
DT7	00	0 / 2	System	0: OK / 1: Busy / 2: Standby
DT8	20	0 - 7	Power	Main Room / Zone2 / Zone3 Power Status (All off , All on, Main on...)
DT9	21	0 - F	Input	Upper 4 bit
DT10		0 - F	Input	Lower 4 bit
DT11	22	0 - 8	Audio Select	0: Auto / 3: COAX/OPT / 4: Analog / 8:HDMI
DT12	23	0 - 1	Audio Mute	0: Off / 1: On
DT13	24	0 - E	Zone2 Input	0: PHONO / 1: CD / 2: TUNER / 3: CD-R / 4: MD/TAPE / 5: DVD / 6: DTV / 7: CBL/SAT / 9: VCR1 / A: DVR/VCR2 / C: V-AUX / D: NET/USB* / E:XM** *Only RX-V2700 **Only USA & Canada
DT14	25	0 / 1	Zone2 Mute	0: Off / 1: On
DT15	26	0 - F	Master Volume	Upper 4 bit
DT16		0 - F	Master Volume	Lower 4 bit
DT17	27	0 - F	Zone2 Volume	Upper 4 bit
DT18		0 - F	Zone2 Volume	Lower 4 bit
DT19	28	0 - F	Program	Upper 4 bit
DT20		0 - F	Program	Lower 4 bit
DT21	28	0 / 1	Effect	0: Off / 1: On
DT22	2D	0 - 6	Extended Surround	0: Off / 1: EX/ES / 3: Auto / 4: EX / 5: PLIIx Movie / 6: PLIIx Music
DT23	2B	1 - 2	Short Message	1: On / 2: Off
DT24	2C	0 - 4	Sleep	0: 120 / 1: 90 / 2: 60 / 4: 30 / 4: OFF
DT25	29	0 - 4	Tuner Preset Page	0: Page A / 1: Page B / 2: Page C / 3: Page D / 4: Page E
DT26	2A	0 - 7	Tuner Preset Number	0: No.1 / 1: No.2 / 2: No.3 / 3: No.4 / 4: No.5 / 5: No.6 / 6: No.7 / 7: No.8
DT27	8B	0 - 2	Night Mode	Upper 4 bit 0: OFF / 1: Cinema / 2: Music
DT28	8B	0 - 2	Night Mode Parameter	Lower 4 bit 0: Low / 1: Mid / 2: High
DT29	2E	0 / 1	Speaker Relay A	0: Off / 1: On
DT30	2F	0 / 1	Speaker Relay B	0: Off / 1: On
DT31	10	0 - F	Format	Upper 4 bit
DT32		0 - F	Format	Lower 4 bit
DT33	11	0 - F	Sampling	Upper 4 bit
DT34		0 - F	Sampling	Lower 4 bit
DT35	12	0 - F	Channel Front/Rear	0: 1+1 / 1: 1/0 / 2: 2/0 / 3: 3/0 / 4: 2/1 / 5: 3/1 / 6: 2/2 / 7: 3/2 / 8: 2/3 / 9: 3/3 A: 2/4 / B: 3/4 / C: MLT / F: ---
DT36	34	0 / 1	Head Phone	0: Off / 1: On
DT37	35	0 / 1	Tuner Band	0: FM / 1: AM
DT38	13	0 - F	Channel LFE	0: 0.1 / F: ---
DT39	36	0 / 1	Trigger1 Output	0: Low / 1: High
DT40	5E	0 - 2	Decoder Mode	0: Auto / 1: DTS / 2: AAC* *Only Japanese Model
DT41	39	0 - 2	Dual Mono	0: Main / 1: Sub / 2: All (Only Japanese Model)
DT42	3A	0 - 3	Trigger1 Control	0: All (Zone1-3) / 1: Main / 2: Zone2 / 3: Zone3
DT43			Don't care	
DT44	3B	0 - 3	Trigger2 Control	0: All (Zone1-3) / 1: Main / 2: Zone2 / 3: Zone3
DT45	3C	0 / 1	Trigger2 Output	0: Low / 1: High
DT46	3D	0 / 1	Speaker B set	0: Main / 1: Zone B
DT47	3E	0 - 3	Zone 2 Amplifier	0: EXT / 1: INT: Speaker[1] / 2: INT: Speaker[2] / 3: INT Both
DT48	40	0 - F	Level Front R	Upper 4 bit
DT49		0 - F	Level Front R	Lower 4 bit
DT50	41	0 - F	Level Front L	Upper 4 bit
DT51		0 - F	Level Front L	Lower 4 bit
DT52	42	0 - F	Level Center	Upper 4 bit
DT53		0 - F	Level Center	Lower 4 bit
DT54	43	0 - F	Level Surround R	Upper 4 bit
DT55		0 - F	Level Surround R	Lower 4 bit
DT56	44	0 - F	Level Surround L	Upper 4 bit
DT57		0 - F	Level Surround L	Lower 4 bit
DT58	45	0 - F	Level Surround Back R	Upper 4 bit
DT59		0 - F	Level Surround Back R	Lower 4 bit
DT60	46	0 - F	Level Surround Back L	Upper 4 bit
DT61		0 - F	Level Surround Back L	Lower 4 bit

DT62	47	0 - F	Level Presence R	Upper 4 bit
DT63		0 - F	Level Presence R	Lower 4 bit
DT64	48	0 - F	Level Presence L	Upper 4 bit
DT65		0 - F	Level Presence L	Lower 4 bit
DT66	49	0 - F	Level Subwoofer	Upper 4 bit
DT67		0 - F	Level Subwoofer	Lower 4 bit
DT68	90	0 - 4	XM Preset Page	0: Page A / 1: Page B / 2: Page C / 3: Page D / 4: Page E (Only USA & Canada)
DT69	91	0 - 7	XM Preset Number	(Only USA & Canada)
DT70	92	0 - 2	XM Search Mode	0: All CH / 1: Category / 2: Preset (Only USA & Canada)
DT71	93	1 - 3	On Screen	1: 10sec / 2: 30sec / 3: Always
DT72	94	0 - F	XM Channel Number	Upper 4 bit (Only USA & Canada)
DT73		0 - F	XM Channel Number	Lower 4 bit (Only USA & Canada)
DT74	51	0 - F	LFE Level SP	Upper 4 bit
DT75		0 - F	LFE Level SP	Lower 4 bit
DT76	52	0 - F	LFE Level HP	Upper 4 bit
DT77		0 - F	LFE Level HP	Lower 4 bit
DT78	53	0 - F	Audio Delay	Upper 4 bit
DT79		0 - F	Audio Delay	Lower 4 bit
DT80	5B	0 - F	Initial Volume	Upper 4 bit (Only RX-V2700)
DT81		0 - F	Initial Volume	Lower 4 bit (Only RX-V2700)
DT82	5A	0 - A	Max Volume	0: -30dB / 1: -25dB / 2: -20dB / 3: -15dB / 4: -10dB / 5: -5dB / 6: 0dB / 7: 5dB / 8: 10dB / 9: 15dB / A: 16.5dB (Only RX-V2700)
DT83	5F	0 / 1	Decoder Mode Set	0: Auto / 1: Last
DT84	60	0 / 1	Audio Select Set	0: Auto / 1: Last
DT85	61	0 - 4	Dimmer	0: -4 / 1: -3 / 2: -2 / 3: -1 / 4: 0
DT86		Don't care		
DT87	62	0 - A	OSD Shift / GUI position	Upper 4 bit
DT88		0 - A	OSD Shift / GUI position	Lower 4 bit
DT89	63	0 / 1	Gray back	0: Off / 1: Auto (Only RX-V1700)
DT90	69	0 / 1	Video conversion	0: Off / 1: On
DT91	64	0 - 2	D. Rang SP	0: MAX / 1: STD / 2: MIN
DT92	65	0 - 2	D. Rang HP	0: MAX / 1: STD / 2: MIN
DT93	66	0 / 1	Zone2 Volume Out	0: Variable / 1: Fixed
DT94	6B	0 / 1	Zone3 Volume Out	0: Variable / 1: Fixed
DT95	68	0 / 1	Memory guard	0: Off / 1: On
DT96	70	0 - 2	SP set Center	0: Large / 1: Small / 2: None
DT97	71	0 / 1	Front	0: Large / 1: Small
DT98	72	0 - 2	Sur. L/R	0: Large / 1: Small / 2: None
DT99	73	0 - 4	Sur. Back	0: Large x2 / 1: Large x1 / 2: Small x2 / 3: Small x1 / 4: None
DT100	3F	0 - 3	Zone3 Amplifier	0: EXT / 1: INT: Speaker[1] / 2: INT: Speaker[2] / 3: INT Both
DT101	74	0 / 1	SP set Presence	0: Yes / 1: None
DT102	75	0 - 2	LFE/BASS	0: SWFR / 1: Front / 2: Both
DT103	76	0 / 1	Subwoofer Phase	Upper 4 bit : Phase 0: Normal / 1: Reverse
DT104		Subwoofer Phase		
DT105	80	0 / 1	Test mode	0: OFF / 1: ON
DT106	A7	0 - 2	EQ Select	0: Auto PEQ / 1: GEQ / 2: Off (Only RX-V1700)
DT107	58	0 - F	Wall Paper	0: Yes / E: Gray / F: None (Only RX-V2700)
DT108		Don't care		
DT109		Don't care		
DT110		Don't care		
DT111	8F	0 / 1	HDMI Support Audio	0: RX-V2700 or RX-V1700 / 1: Other
DT112	85	0 / 1	Component I/P	0: Off / 1: On
DT113	86	0 / 1	HDMI IP	0: Off / 1: On (Only RX-V1700)
DT114	B6	0 - 5	GUI Language	0: English / 1: Japanese / 2: French / 3: German / 4: Spanish / 5: Russian (Only RX-V2700)
DT115	87	0 - 4	HDMI Up-Scaling	0: Through / 1: 480p(576p) / 2: 1080i / 3: 720p (Only RX-V2700)
DT116	88	0 - 2	HDMI Aspect	0: Through / 1: 16: 9 Normal / 2: Smart Zoom (Only RX-V2700)
DT117	8A	0 - 2	THX SB Speaker Distance	0: under 1ft(0.3m) / 1: 1-4ft(0.3-1.2m) / 2: over 4ft(1.2m)
DT118	6C	0 - 2	Zone OSD	0: Off / 1: Zone2 / 2: Zone2 & Zone3 (Only RX-V2700)
DT119	6E	0 - 9	Decoder Select	0: Pro Logic / 1: PLIIx Movie / 2: PLIIx Music / 3: PLIIx Game / 4: Neo: 6 Cinema / 5: Neo: 6 Music / 6: CSII Cinema* / 7: CSII Music* / 9: Neural Sur. *Only Japanese Model
DT120	B5	0 / 1	Remote ID Tuner	0: ID1 / 1: ID2
DT121	B0	0 / 1	Advanced Setup	0: Off / 1: On
DT122	B1	0 / 1	Remote ID AMP	0: ID1 / 1: ID2
DT123	B2	0 / 1	Fan Control Mode	0: Auto / 1: Cont
DT124	B3	0 / 1	Speaker Impedance	0: 8 ohm / 1: 6 ohm (Except Japanese Model)
DT125	B4	0 / 1	Tuner Setup	0: AM10/FM100 / 1: AM9/FM50 (Only Destination R & L)
DT126	8C	0 / 1	Pure Direct	0: Off / 1: On
DT127	A0	0 - E	Zone3 Input	0: PHONO / 1: CD / 2: TUNER / 3: CD-R / 4: MD/TAPE / 5: DVD / 6: DTV / 7: CBL/SAT / 9: VCR1 / A: DVR/VCR2 / C: V-AUX / D: NET/USB* / E: XM** *Only RX-V2700 **Only USA & Canada

DT128	A1	0 / 1	Zone3 Mute	0: Off / 1: On
DT129	A2	0 - F	Zone3 Volume	Upper 4 bit
DT130		0 - F		Lower 4 bit
DT131	B9	0 / 1	Remote Sensor	0: On / 1: Off
DT132	7B	0 - C	Multi CH Select	0: 6ch / 2: 8ch CD / 3: 8ch CD-R / 4: 8ch MD/TAPE / 5: 8ch DVD / 6: 8ch DTV / 7: 8ch CBL/SAT / 9: 8ch VCR1 / A: 8ch DVR/VCR2 / C: 8ch V-AUX
DT133	BA	0 / 1	Remote ID XM	0: ID1 / 1: ID2 (Only USA & Canada)
DT134	BB	0 / 1	Bi - AMP	0: On / 1: Off
DT135	7E	0 - 8	Subwoofer Crossover	0: 40Hz / 1: 60Hz / 2: 80Hz / 3: 90Hz / 4: 100Hz / 5: 110Hz / 6: 120Hz / 7: 160Hz / 8: 200Hz
DT136	BC	0 / 1	TV Format	0: PAL / 1: NTSC (Only RX-V2700)
DT137	7D	0 / 1	PR/SB Priority	0: Presence / 1: Surround Back
DT138		Don't care		
DT139	4B	0 - F	Zone2 Tone Control Bass	Upper 4 bit
DT140		0 - F		Lower 4 bit
DT141	4C	0 - F	Zone2 Tone Control Treble	Upper 4 bit
DT142		0 - F		Lower 4 bit
DT143	A8	0 / 1	Tone Bypass	0: Auto / 1: Off
DT144	BD	0 / 1	Wake on RS-232C Access	0: No / 1: Yes
DT145	14	0 - F	Bit Rate	Upper 4 bit
DT146		0 - F	Bit Rate	Lower 4 bit
DT147	15	0 - F	Dialog	Upper 4 bit
DT148		0 - F	Dialog	Lower 4 bit
DT149	67	0 - 1	FL Scroll	0: Continue / 1: Once
DT150	6F	0 - C	Multi CH BGV	0: Off / 1: Last / 5: DVD / 6: DTV / 7: CBL/SAT / 9: VCR1 / A: DVR/VCR2 / C: V-AUX
DT151	96	0 - 1	iPod Charge on Standby	0: Off / 1: Auto
DT152	97	0 - 2	iPod Repeat	0: Off / 1: One / 2: All
DT153	98	0 - 2	iPod Shuffle	0: Off / 1: Songs / 2: Albums
DT154	99	0 - 2	NET/USB Repeat	0: Off / 1: Single / 2: All (Only RX-V2700)
DT155	9A	0 - 1	NET/USB Shuffle	0: Off / 1: On (Only RX-V2700)
DT156	A9	0 - A	Zone2 Max Volume	0: -30dB / 1: -25dB / 2: -20dB / 3: -15dB / 4: -10dB / 5: -5dB / 6: 0dB / 7: 5dB / 8: 10dB / 9: 15dB / A: 16.5dB (Only RX-V2700)
DT157	AB	0 - F	Zone2 Initial Volume	Upper 4 bit (Only RX-V2700)
DT158		0 - F	Zone2 Initial Volume	Lower 4 bit (Only RX-V2700)
DT159	AD	0 - F	Zone2 Balance	Upper 4 bit
DT160		0 - F	Zone2 Balance	Lower 4 bit
DT161	AA	0 - A	Zone3 Max Volume	0: -30dB / 1: -25dB / 2: -20dB / 3: -15dB / 4: -10dB / 5: -5dB / 6: 0dB / 7: 5dB / 8: 10dB / 9: 15dB / A: 16.5dB (Only RX-V2700)
DT162	AC	0 - F	Zone3 Initial Volume	Upper 4 bit (Only RX-V2700)
DT163		0 - F	Zone3 Initial Volume	Lower 4 bit (Only RX-V2700)
DT164	AE	0 - F	Zone3 Balance	Upper 4 bit
DT165		0 - F	Zone3 Balance	Lower 4 bit
DT166	9B	0 - 2	NET/USB Source Select	0: PC/MCX / 1: NET Radio / 2: USB (Only RX-V2700)
DT167	BF	0 - 1	Monitor Check	0: Skip / 1: Yes (Only RX-V2700)
DT168	4D	0 - F	Zone3 Tone Control Bass	Upper 4 bit
DT169		0 - F		Lower 4 bit
DT170	4E	0 - F	Zone3 Tone Control Treble	Upper 4 bit
DT171		0 - F		Lower 4 bit
DT172	16	0 - F	Flag	Upper 4 bit
DT173		0 - F		Lower 4 bit

*OSD = On Screen Display

3. Control Commands



* The RX-Vx700 can receive control commands only when the power is on (except Power commands and System commands*).

* Do not send any control commands when the system status is Wait. No commands are permitted until the RX-Vx700 reports OK.

* The RX-Vx700 will send a Report Command** within 1 sec of receiving the Control Command. If no Report Command is received, resend control command (max 5 times).

If the RX-Vx700 doesn't send a Report Command after the fifth retry, cancel the transaction because there may be a problem.

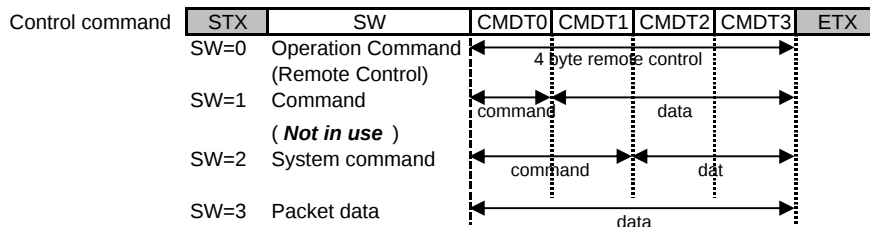
* 'SW' switches the type of the control command. When the 'SW' is set to '0', you can control the RX-Vx700 remotely via RS-232C.

* The RX-Vx700 will only send one report command for each type of control. The Report Command will report only the final status of all settings in strings of commands (may not report all steps in a status, only final status).

For example, if the user sets the input selector on the unit to DTV just after the host sends a command to change the input to CD, the RX-Vx700 may report only the final status that the input was changed to DTV by the system operation.

*System command, **Report command --> described in later

- Command Switch (changing the type of control command)



function name	function	data (ASCII)	range (HEX)
SW	command switch	0 - 9	0 - 9
CMDT0 - 3	command & data	0 - 9, A - F	variable

* 'SW' switches the command type of the Control Command.

SW=0 : 4 byte command for remote control code (CMDT0 = '7')

SW=1 : 1 byte command 0 - F (HEX expression in ASCII)

SW=2 : 2 byte command 10 - FF (HEX expression in ASCII)

SW=3 : 4 byte packet data for test data transmission

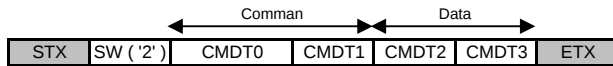


function name	function	data (ASCII)	range (HEX)
SW	command switch	0	0
CMDT0	command	F	F
CMDT1 - 8	command	0 - 9, A - F	variable

* 'SW' switches the command type of the Control Command.

SW=0 : 9 byte command for remote control code (CMDT0 = 'F')

3.1 System Commands (SW = '2')



System Commands can be made by setting the 'SW' byte in the Control Command to '2'. With System commands you can control the RX-Vx700's system settings (Report Command Enable / Disable, Report Command delay, etc...)

With a System Command you can also...

- set absolute master volume value.
- send text strings to the On Screen Display (OSD).
- request RX-Vx700 text data regarding tuner freq., master volume, input name, zone 2 input name.

SW	Command			Data			Report command			Note
	CMDT0	CMDT1	Function	CMDT2	CMDT3	Parameter	Type	RCMD1,2	RDAT1,2	
2	0	0	Report Command Code	0	0	Enable	0	00	00(OK)	
				0	1	Disable				
2	0	1	Time between two report commands (Report Command Delay)	0	0	real time	0	00	00(OK)	
				0	1	50ms				
				0	2	100ms				
				0	3	150ms				
				0	4	200ms				
				0	5	250ms				
				0	6	300ms				
				0	7	350ms				
				0	8	400ms				
2	1	0	OSD message start command	0	0	Start	0	00	00(OK)	
2	2	0	Tuning frequency text request	0	0		Refer to the following section			
			Main volume value text request	0	1					
			Zone2 volume value text request	0	2					
			Main Input name text request	0	3					
			Zone2 input name text request	0	4					
			Zone3 volume value text request	0	5					
			Zone3 input name text request	0	6					
2	2	F	Firmware version request	0	0		0	00		
2	3	0	Main volume direct setting	X	X		0	26		
2	3	1	Zone2 volume direct setting	X	X		0	27		
2	3	4	Zone3 volume direct setting	X	X		0	A2		
2	3	8	Mute Type	0	0	Full	0	A5		
				0	1	-20dB				
2	3	E	Zone2 Amplifier	0	0	EXT	0	3E		
				0	1	INT: Speaker[1]				
				0	2	INT: Speaker[2]				
				0	3	INT: Both				
2	3	F	Zone3 Amplifier	0	0	EXT	0	3F		
				0	1	INT: Speaker[1]				
				0	2	INT: Speaker[2]				
				0	3	INT: Both				
2	4	0	Level Front R	X	X		0	40		
2	4	1	Level Front L	X	X		0	41		
2	4	2	Level Center	X	X		0	42		
2	4	3	Level Surround R	X	X		0	43		
2	4	4	Level Surround L	X	X		0	44		
2	4	5	Level Presence R	X	X		0	47		
2	4	6	Level Presence L	X	X		0	48		
2	4	7	Level Surround Back R	X	X		0	45		
2	4	8	Level Surround Back L	X	X		0	46		
2	4	9	Level Subwoofer (1)	X	X		0	49		
2	4	A	Level Subwoofer (2)	X	X		0	4A		
2	4	B	Zone2 Tone Control Bass	X	X		0	4B		
2	4	C	Zone2 Tone Control Treble	X	X		0	4C		
2	4	D	Zone3 Tone Control Bass	X	X		0	4D		
2	4	E	Zone3 Tone Control Treble	X	X		0	4E		
2	5	1	LFE Level for Speaker	X	X		0	51		
2	5	2	LFE Level for Headphone	X	X		0	52		
2	5	3	Audio Delay	X	X		0	53		
2	5	8	Wall Paper	0	0	Yes	0	58		Only RX-V2700
				0	E	Gray				
				0	F	None				

SW	Command			Data			Report command			Note
	CMDT0	CMDT1	Function	CMDT2	CMDT3	Parameter	Type	RCMD1,2	RDAT1,2	
2	5	A	MAX Volume	X	X		0	5A		Only RX-V2700
2	5	B	Initial Volume	X	X		0	5B		Only RX-V2700
2	5	E	Decoder Mode	X	X		0	5E		
2	5	F	Decoder Mode Set	0	0	Auto	0	5F		
				0	1	Last				
2	6	0	Audio Select Set	0	0	Auto	0	60		
				0	1	Last				
2	6	1	Dimmer	0	0	-4	0	61		
				0	1	-3				
				0	2	-2				
				0	3	-1				
				0	4	0				
2	6	2	OSD Shift* / GUI Position**	X	X		0	62		*RX-V1700 **RX-V2700
2	6	3	Gray Back	0	0	Off	0	63		Only RX-V1700
				0	1	Auto				
2	6	4	Dynamic Range for Speaker	0	0	MAX	0	64		
				0	1	STD				
				0	2	MIN				
2	6	5	Dynamic Range for Headphone	0	0	MAX	0	65		
				0	1	STD				
				0	2	MIN				
2	6	6	Zone2 Volume Out	0	0	Variable	0	66		
				0	1	Fixed				
2	6	7	FL Scroll	0	0	Continue	0	67		
				0	1	Once				
2	6	8	Memory Guard	0	0	Off	0	68		
				0	1	On				
2	6	9	Video Conversion	0	0	Off	0	69		
				0	1	On				
2	6	B	Zone3 Volume Out	0	0	Variable	0	6B		
				0	1	Fixed				
2	6	C	Zone OSD	0	0	Off	0	6C		Only RX-V2700
				0	1	Zone2				
				0	2	Zone2 & 3				
2	6	F	Multi CH BGV	0	0	Off				
				0	1	Last				
				0	5	DVD				
				0	6	DTV				
				0	7	CBL/SAT				
				0	9	VCR1				
				0	A	DVR/VCR2				
				0	C	V-AUX				
2	7	0	Speaker Set Center	0	0	Large	0	70		
				0	1	Small				
				0	2	None				
2	7	1	Speaker Set Front	0	0	Large	0	71		
				0	1	Small				
2	7	2	Speaker Set Surround	0	0	Large	0	72		
				0	1	Small				
				0	2	None				
2	7	3	Speaker Set Surround Back	0	0	Large x2	0	73		
				0	1	Large x1				
				0	2	Small x2				
				0	3	Small x1				
				0	4	None				
2	7	4	Speaker Set Presence	0	0	Yes	0	74		
				0	1	None				
2	7	5	Speaker Set Bass Out	0	0	Subwoofer	0	75		
				0	1	Front				
				0	2	Both				
2	7	6	Speaker Set Subwoofer Phase	0	X	Normal	0	76		Lower 4 bit: Don't care
				1	X	Reverse				

SW	Command			Data			Report command			Note
	CMDT0	CMDT1	Function	CMDT2	CMDT3	Parameter	Type	RCMD1,2	RDAT1,2	
2	7	B	Multi CH Select	0	0	6ch	0	7B		
				0	2	8ch CD				
				0	3	8ch CD-R				
				0	4	8ch MD/TAPE				
				0	5	8ch DVD				
				0	6	8ch DTV				
				0	7	8ch CBL/SAT				
				0	9	8ch VCR1				
				0	A	8ch VCR2				
2	7	D	PR/SB Priority	0	0	Presence	0	7D		
				0	1	Sur. Back				
2	7	E	Subwoofer Crossover	0	0	40Hz	0	7E		
				0	1	60Hz				
				0	2	80Hz				
				0	3	90Hz				
				0	4	100Hz				
				0	5	110Hz				
				0	6	120Hz				
				0	7	160Hz				
				0	8	200Hz				
2	8	0	Test Tone	0	0	Off	0	80		
				0	1	On				
2	8	5	Component I/P	0	0	Off	0	85		
				0	1	On				
2	8	6	HDMI I/P	0	0	Off	0	86		Only RX-V1700
				0	1	On				
2	8	7	HDMI Up-Scaling	0	0	Through	0	87		Only RX-V2700
				0	1	480p(576p)				
				0	2	1080i				
				0	3	720p				
2	8	8	HDMI Aspect	0	0	Through	0	88		Only RX-V2700
				0	1	16:9 Normal				
				0	2	Smart Zoom				
2	8	A	THX/SB Speaker Dist.	0	0	under 1ft (0.3m)	0	8A		
				0	1	1-4ft (0.3-1.2m)				
				0	2	over 4ft (1.2m)				
2	8	B	Night Mode	0	0	Off	0	8B		
				1	0	Cinema Low				
				1	1	Cinema Mid				
				1	2	Cinema High				
				2	0	Music Low				
				2	1	Music Mid				
				2	2	Music High				
2	8	F	HDMI Support Audio	0	0	RX-V1700	0	8F		
				0	1	RX-V2700				
				0	1	Other				
2	9	3	On Screen	0	0	Off	0	93		
				0	1	10sec				
				0	2	30sec				
				0	3	Always				
2	9	4	XM Channel Number	X	X		0	94		Only USA & Canada
2	9	5	Hold / Release XM Display	0	0	Release	0	95		Only USA & Canada
				0	1	Hold				
2	9	6	iPod Charge on Standby	0	0	Off	0	96		
				0	1	Auto				
2	9	7	iPod Repeat	0	0	Off	0	97		
				0	1	One				
				0	2	All				
2	9	8	iPod Shuffle	0	0	Off	0	98		
				0	1	Songs				
				0	2	Albums				
2	9	9	NET/USB Repeat	0	0	Off	0	99		Only RX-V2700
				0	1	Single				
				0	2	All				
2	9	A	NET/USB Shuffle	0	0	Off	0	9A		Only RX-V2700
				0	1	On				

SW	Command			Data			Report command			Note
	CMDT0	CMDT1	Function	CMDT2	CMDT3	Parameter	Type	RCMD1,2	RDAT1,2	
2	9	C	NET/USB Preset Recall	X	X		0	9C		Only RX-V2700
2	9	D	NET/USB Preset Memory	X	X		0	9D		Only RX-V2700
2	A	7	EQ (Equalizer) Select	0	0	Auto PEQ	0	A7		Only RX-V1700
				0	1	GEQ				
				0	2	EQ Off				
2	A	8	Tone Control Auto Bypass	0	0	Auto	0	A8		
				0	1	Off				
2	A	9	Zone2 MAX Volume	X	X		0	A9		Only RX-V2700
2	A	A	Zone3 MAX Volume	X	X		0	AA		Only RX-V2700
2	A	B	Zone2 Initial Volume	X	X		0	AB		Only RX-V2700
2	A	C	Zone3 Initial Volume	X	X		0	AC		Only RX-V2700
2	A	D	Zone2 Balance	X	X		0	AD		
2	A	E	Zone3 Balance	X	X		0	AE		
2	A	F	Music Enhancer	0	0	Off	0	28		
				0	1	2ch Low				
				0	2	2ch High				
				0	3	7ch Low				
				0	4	7ch High				
2	B	0	Advanced Setup	0	0	Off	0	B0		Effective in STANDBY
				0	1	On				
2	B	1	Remote ID for AMP	0	0	ID1	0	B1		
				0	1	ID2				
2	B	2	Fan Control Mode	0	0	Auto	0	B2		
				0	1	Cont.				
2	B	3	Speaker Impedance	0	0	8 ohm	0	B3		except Japanese Model
				0	1	6 ohm				
2	B	4	Tuner Frequency Step	0	0	10k/100kHz	0	B4		Only Destination R & L
				0	1	9k/50kHz				
2	B	5	Remote ID for Tuner	0	0	ID1	0	B5		
				0	1	ID2				
2	B	6	Language	0	0	English	0	B6		Only RX-V2700
				0	1	Japanese				
				0	2	French				
				0	3	German				
				0	4	Spanish				
				0	5	Russian				
2	B	7	User Preset	0	0	Cancel	0	B7		
				0	1	Preset				
2	B	8	Video Reset	0	0	Cancel	0	B8		
				0	1	Yes				
2	B	9	Remote Sensor	0	0	On	0	B9		
				0	1	Off				
2	B	A	Remote ID for XM	0	0	ID1	0	BA		Only USA & Canada
				0	1	ID2				
2	B	B	Bi-Amplifier	0	0	On	0	BB		
				0	1	Off				
2	B	C	TV Format	0	0	PAL	0	BC		Only RX-V2700
				0	1	NTSC				
2	B	D	Wake on RS-232C Access	0	0	No	0	BD		
				0	1	Yes				
2	B	E	Network Reset	0	0	Cancel	0	BE		Only RX-V2700
				0	1	Yes				
2	B	F	Monitor Check	0	0	Skip	0	BF		Only RX-V2700
				0	1	Yes				

***OSD message function**

The OSD Message function can display a message of 16 characters to the RX-Vx700's OSD for a few seconds.

The command sequence block will start by sending "start command" as mentioned above, followed by four bytes of packet data (SW:3) repeated four times. Then a message of sixteen characters (ASCII) will display and the command block will finish automatically.

(ex.) Want to display " Test message ! " characters to OSD.

1. Send the start command.

STX	2	1	0	0	0	ETX
-----	---	---	---	---	---	-----

2. Send SW:3 commands four times as follows.

STX	3	' '	'T'	'e'	's'	ETX
STX	3	't'	' '	'm'	'e'	ETX
STX	3	's'	's'	'a'	'g'	ETX
STX	3	'e'	' '	'l'	' '	ETX

3. The command block will be finished automatically.

Characters available for displaying the message are as follows:

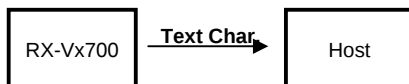
" (SPACE) "!" " #" "%" "&" "(" ")" "*" "+" ", " "-." ". " "0" "1" "2" "3" "4" "5" "6" "7" "8" "9" ":" "<" "=" ">" "?" "A" "B" "C" "D" "E" "F" "G" "H" "I" "J" "K" "L" "M" "N" "O" "P" "Q" "R" "S" "T" "U" "V" "W" "X" "Y" "Z" "[" "]" "_" "a" "b" "c" "d" "e" "f" "g" "h" "i" "j" "k" "l" "m" "n" "o" "p" "q" "r" "s" "t" "u" "v" "w" "x" "y" "z"

***Commands to get the display characters as text data (ASCII)**

This command can get certain text data (ASCII) from the RX-Vx700 to be used by a host device as follows.

- Tuner frequency characters : " 1 07.9 "(MHz)
- Master volume value characters : " -40.0dB" / " MUTE"
- Input name : " MY PC " (Even renamed by "SET MENU:INPUT RENAME")
- Zone2 input name : " PS 2 " (Even renamed by "SET MENU:INPUT RENAME")

The response protocol for the text request commands are as follows.

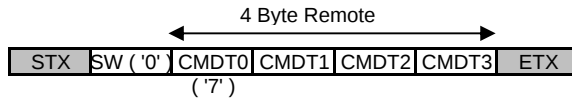


RCMD0,1	COMMAND	0 - 9, A - F	0...0xFF
DDAT 0 - 7	DATA	0 - 9, A - Z SP	ASCII char. Space char.

Report Command

	DC1	RCMD0	RCMD1	DDAT 0	DDAT 1	DDAT 2	DDAT 3	DDAT 4	DDAT 5	DDAT 6	DDAT 7	ETX
Tuner Frequency	DC1	0	0	SP	SP	X	X	X	X	X	X	ETX
Main Volume Value	DC1	0	1	SP	X	X	X	X	X	X	X	ETX
Zone2 Volume Value	DC1	0	2	SP	X	X	X	X	X	X	X	ETX
Input Name	DC1	0	3	X	X	X	X	X	X	X	X	ETX
Zone2 Input Name	DC1	0	4	X	X	X	X	X	X	X	X	ETX
Zone3 Volume Value	DC1	0	5	SP	X	X	X	X	X	X	X	ETX
Zone3 Input Name	DC1	0	6	X	X	X	X	X	X	X	X	ETX

3.2 Operation Commands (SW = '0', CMDT0 = '7')



SW	CMDT				Function	Setting	Report Command		Note
	0	1	2	3			Type	RCMD1,2	
0	7	A	1	A	Main Volume	Up	0	26	
0	7	A	1	B		Down			
0	7	E	A	2	Audio Mute	On (Full)	0	23	
0	7	E	D	F		On (-20dB)			
0	7	E	A	3		Off			
0	7	A	1	4	Input	PHONO	0	21	
0	7	A	1	5		CD			
0	7	A	1	6		TUNER			
0	7	A	1	9		CD-R			
0	7	A	1	8		MD/TAPE			
0	7	A	C	1		DVD			
0	7	A	5	4		DTV			
0	7	A	C	0		CBL/SAT			
0	7	A	0	F		VCR1			
0	7	A	1	3		DVR/VCR2			
0	7	A	5	5		V-AUX/DOCK			
0	7	A	8	7		Multi CH			
0	7	A	B	4		XM			Only USA & Canada
0	7	E	A	4	Multi CH Input	On	0	21	
0	7	E	A	5		Off			
0	7	E	8	0	Pure Direct	On	0	8C	
0	7	E	8	2		Off			
0	7	E	A	6	Audio Select	Auto	0	22	
0	7	E	A	9		COAX/OPT			
0	7	E	A	A		Analog			
0	7	E	D	A		HDMI			
0	7	E	D	B	Decoder Mode	AUTO	0	5E	
0	7	E	A	8		DTS			
0	7	E	3	B		AAC			Only Japanese Model
0	7	A	D	A	Zone2 Volume	Up	0	27	
0	7	A	D	B		Down			
0	7	E	A	0	Zone2 Mute	On	0	25	
0	7	E	A	1		Off			
0	7	A	D	0	Zone2 Input	PHONO	0	24	
0	7	A	D	1		CD			
0	7	A	D	2		TUNER			
0	7	A	D	4		CD-R			
0	7	A	D	3		MD/TAPE			
0	7	A	C	D		DVD			
0	7	A	D	9		DTV			
0	7	A	C	C		CBL/SAT			
0	7	A	D	6		VCR1			
0	7	A	D	7		DVR/VCR2			
0	7	A	D	8		V-AUX/DOCK			
0	7	A	B	8		XM			Only USA & Canada
0	7	A	1	D	All Zone Power	On	0	20	
0	7	A	1	E		Standby			
0	7	E	7	E	Main Zone Power	On	0	20	
0	7	E	7	F		Standby			
0	7	E	B	A	Zone2 Power	On	0	20	
0	7	E	B	B		Standby			
0	7	A	E	D	Zone3 Power	On	0	20	
0	7	A	E	E		STANDBY			
0	7	E	2	6	Zone3 Mute	On	0	A1	
0	7	E	6	6		Off			
0	7	A	F	D	Zone3 Volume	Up	0	A2	
0	7	A	F	E		Down			

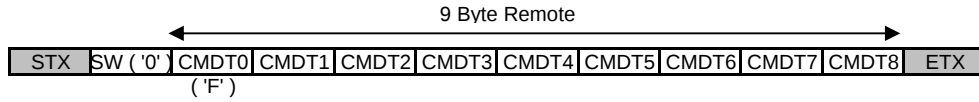
SW	CMDT_				Function	Setting	Report Command		Note
	0	1	2	3			Type	RCMD1,2	
0	7	A	F	1	Zone3 Input	PHONO	0	A0	
0	7	A	F	2		CD			
0	7	A	F	3		TUNER			
0	7	A	F	5		CD-R			
0	7	A	F	4		MD/TAPE			
0	7	A	F	C		DVD			
0	7	A	F	6		DTV			
0	7	A	F	7		CBL/SAT			
0	7	A	F	9		VCR1			
0	7	A	F	A		DVR/VCR2			
0	7	A	F	0		V-AUX/DOCK			
0	7	A	B	9		XM			Only USA & Canada
0	7	E	B	0	Short Message	Off	0	2B	
0	7	E	B	1		On			
0	7	E	B	2		Full			Only RX-V1700
0	7	E	B	3	Sleep Timer	Off	0	2C	
0	7	E	B	4		120			
0	7	E	B	5		90			
0	7	E	B	6		60			
0	7	E	B	7		30			
0	7	E	B	8	EXTD SUR.	EX/ES	0	2D	
0	7	E	B	9		Off			
0	7	E	7	C		Auto			
0	7	E	D	C		EX			
0	7	E	D	D		PLIIX Movie			
0	7	E	D	E		PLIIX Music			
0	7	E	9	C	Night Listening Mode	Off	0	8B	
0	7	E	9	B		Cinema			
0	7	E	C	F		Music			
0	7	E	2	7	EFFECT	ON	0	28	
0	7	E	E	0	STRAIGHT		0	28	
0	7	E	D	8	Music Enhancer	On		28	
0	7	E	D	9		Off		28	
0	7	E	E	1	DSP / Surround	Munich	0	28	
0	7	E	E	5		Vienna			
0	7	E	E	6		Amsterdam			
0	7	E	E	8		Freiburg			
0	7	E	A	F		Chamber			
0	7	E	E	B		Village Vanguard			
0	7	E	E	E		Warehouse Loft			
0	7	E	C	D		Cellar Club			
0	7	E	E	C		The Bottom Line			
0	7	E	E	D		The Roxy Theatre			
0	7	E	F	0		Disco			
0	7	E	F	2		Game			
0	7	E	F	F		7ch Stereo			
0	7	E	C	0		2ch Stereo			
0	7	E	F	8		Sports			
0	7	E	F	2		Action Game			
0	7	E	C	E		Roleplaying Game			
0	7	E	F	3		Music Video			
0	7	E	F	5		Recital/Opera			
0	7	E	F	E		Standard			
0	7	E	F	9		Spectacle			
0	7	E	F	A		Sci-Fi			
0	7	E	F	B		Adventure			
0	7	E	F	C		Drama			
0	7	E	F	7		Mono Movie			
0	7	E	F	D		Surround Decode			
0	7	E	C	2		THX Cinema			
0	7	E	C	3		THX Music			
0	7	E	C	8		THX Game			
0	7	A	E	0	Tuner Preset Page	A	0	29	
0	7	A	E	1		B			
0	7	A	E	2		C			
0	7	A	E	3		D			
0	7	A	E	4		E			

SW	CMDT_				Function	Setting	Report Command		Note
	0	1	2	3			Type	RCMD1,2	
0	7	A	E	5	Tuner Preset Number	1	0	2A	
0	7	A	E	6		2			
0	7	A	E	7		3			
0	7	A	E	8		4			
0	7	A	E	9		5			
0	7	A	E	A		6			
0	7	A	E	B		7			
0	7	A	E	C		8			
0	7	E	B	C	Tuner Band	FM	0	35	
0	7	E	B	D		AM			
0	7	E	B	E	Tuner Auto Tuning	Up	0	15	
0	7	E	B	F		Down			
0	7	E	A	B	Speaker Relay A	On	0	2E	
0	7	E	A	C		Off			
0	7	E	A	D	Speaker Relay B	On	0	2F	
0	7	E	A	E		Off			
0	7	E	2	B	System Memory Save	1	0	31	
0	7	E	2	C		2			
0	7	E	2	D		3			
0	7	E	2	E		4			
0	7	E	2	F		5			
0	7	E	3	0		6			
0	7	E	3	5	System Memory Load	1	0	30	
0	7	E	3	6		2			
0	7	E	3	7		3			
0	7	E	3	8		4			
0	7	E	3	9		5			
0	7	E	3	A		6			
0	7	E	6	B	Main Volume Memory Save	1	0	33	
0	7	E	6	C		2			
0	7	E	6	D		3			
0	7	E	6	E		4			
0	7	E	6	F		5			
0	7	E	7	0		6			
0	7	E	7	5	Main Volume Memory Load	1	0	32	
0	7	E	7	6		2			
0	7	E	7	7		3			
0	7	E	7	8		4			
0	7	E	7	9		5			
0	7	E	7	A		6			
0	7	E	8	7	Zone2 Volume Memory Save	1	0	38	
0	7	E	8	8		2			
0	7	E	8	9		3			
0	7	E	8	A		4			
0	7	E	8	B		5			
0	7	E	8	C		6			
0	7	E	8	D	Zone2 Volume Memory Load	1	0	37	
0	7	E	8	E		2			
0	7	E	8	F		3			
0	7	E	9	0		4			
0	7	E	9	1		5			
0	7	E	9	2		6			
0	7	E	2	0	Zone3 Volume Memory Save	1	0	A4	
0	7	E	2	1		2			
0	7	E	2	2		3			
0	7	E	2	3		4			
0	7	E	2	4		5			
0	7	E	2	5		6			
0	7	E	6	0	Zone3 Volume Memory Load	1	0	A3	
0	7	E	6	1		2			
0	7	E	6	2		3			
0	7	E	6	3		4			
0	7	E	6	4		5			
0	7	E	6	5		6			
0	7	E	D	4	Zone2 Balance	Left	0	AD	
0	7	E	D	5		Right			

SW	CMDT_				Function	Setting	Report Command		Note
	0	1	2	3			Type	RCMD1,2	
0	7	E	D	6	Zone3 Balance	Left	0	AE	
0	7	E	D	7		Right			
0	7	E	3	2	Trigger1 Control	Main	0	3A	
0	7	E	3	3		Zone2			
0	7	E	3	1		Zone3			
0	7	E	3	4		All (Zone1-3)			
0	7	E	7	3	Trigger1 Main	High	0	36	
0	7	E	7	4		Low			
0	7	E	7	1	Trigger1 Zone2	High	0	36	
0	7	E	7	2		Low			
0	7	E	8	3	Trigger1 Zone3	High	0	36	
0	7	E	8	4		Low			
0	7	E	9	3	Dual Mono Mode	Main	0	39	Only Japanese Model
0	7	E	9	4		Sub			
0	7	E	9	5		All			
0	7	E	9	6	Trigger2 Control	Main	0	3B	
0	7	E	9	7		Zone2			
0	7	E	9	F		Zone3			
0	7	E	9	8		All (Zone1-3)			
0	7	E	3	E	Trigger2 Main	High	0	3C	
0	7	E	3	F		Low			
0	7	E	3	C	Trigger2 Zone2	High	0	3C	
0	7	E	3	D		Low			
0	7	E	8	5	Trigger2 Zone3	High	0	3C	
0	7	E	8	6		Low			
0	7	E	2	8	Speaker B SET	Main	0	3D	
0	7	E	2	9		Zone B			
0	7	E	9	9	ZONE2 Amp	INT: Presence	0	3E	
0	7	E	9	A		EXT			
0	7	E	6	7	2ch Decoder	PLIIX Movie	0	6E	
0	7	E	6	8		PLIIX Music			
0	7	E	6	9		Neo:6 Cinema			
0	7	E	6	A		Neo:6 Music			
0	7	E	C	7		PLIIX Game			
0	7	E	C	9		Pro Logic			
0	7	E	C	A		CSII Cinema			Only Japanese Model
0	7	E	C	B		CSII Music			Only Japanese Model
0	7	E	C	C		Neural Sur.			
0	7	A	6	0	XM CH Number	0	0		
0	7	A	6	1	XM CH/Preset Number	1	0	91*	*Preset Number
0	7	A	6	2	XM CH/Preset Number	2	0	91*	
0	7	A	6	3	XM CH/Preset Number	3	0	91*	
0	7	A	6	4	XM CH/Preset Number	4	0	91*	
0	7	A	6	5	XM CH/Preset Number	5	0	91*	
0	7	A	6	6	XM CH/Preset Number	6	0	91*	
0	7	A	6	7	XM CH/Preset Number	7	0	91*	
0	7	A	6	8	XM CH/Preset Number	8	0	91*	
0	7	A	6	9	XM CH Number	9	0		
0	7	A	6	A	XM CH/Preset Number	Up	0	91 / 94	91:Preset Number
0	7	A	6	B		Down			94:Channel Number
0	7	A	6	C	XM Category / Preset Page	Up	0	90	90:Preset Page
0	7	A	6	E		Down			
0	7	A	6	F	XM Hold/Release Display	Toggle	0	95	
0	7	A	7	0	XM History Next	Toggle			
0	7	A	7	1	XM Preset Memory				
0	7	A	B	5	XM Search Mode	All CH	0	92	
0	7	A	B	6		Category			
0	7	A	B	7		Preset			
0	7	A	B	A	XM Preset Page	A	0	90	
0	7	A	B	B		B			
0	7	A	B	C		C			
0	7	A	B	D		D			
0	7	A	B	E		E			
0	7	A	B	F	XM ENT.				Decide CH Number

SW	CMDT_				Function	Setting	Report Command		Note
	0	1	2	3			Type	RCMD1,2	
0	7	A	7	3	Zone2 Tone Control	Bass +	0	4B	
0	7	A	7	4		Bass -			
0	7	A	7	5		Treble +	0	4C	
0	7	A	7	6		Treble -			
0	7	A	7	7	Zone3 Tone Control	Bass +	0	4D	
0	7	A	7	8		Bass -			
0	7	A	7	9		Treble +	0	4E	
0	7	A	7	A		Treble -			
0	7	A	A	0	GUI Operation	Top Menu		No Report	
0	7	A	D	E		Enter			
0	7	A	A	1		Exit			
0	7	A	9	D		Cursor Up			
0	7	A	9	C		Cursor Down			
0	7	A	9	E		Cursor Right			
0	7	A	9	F		Cursor Left			
0	7	E	D	0	Main Source	On	0	No Report	
0	7	E	D	1	Display	Off			
0	7	E	D	2	Zone2 Source	On	0	No Report	Only RX-V2700
0	7	E	D	3	Display	Off			

3.3 Extended Operation Command (SW = '0', CMDT0 = 'F')

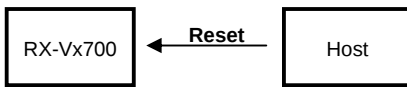


SW	CMDT_									Function	Setting	Report Command		Note
	0	1	2	3	4	5	6	7	8			Type	RCMD1,2	
0	F	7	F	0	1	0	F	F	0	iPod OSD (GUI) Operation	Menu		No Report	
0	F	7	F	0	1	1	1	E	E		Enter			
0	F	7	F	0	1	1	5	E	A		Display			
0	F	7	F	0	1	0	E	F	1		Cursor Up			
0	F	7	F	0	1	1	4	E	B		Cursor Down			
0	F	7	F	0	1	1	2	E	D		Cursor Right			
0	F	7	F	0	1	1	0	E	F		Cursor Left			
0	F	7	F	0	1	1	E	E	1		Play			
0	F	7	F	0	1	1	D	E	2	Stop				
0	F	7	F	0	1	1	A	E	5	Pause				
0	F	7	F	0	1	1	C	E	3	Skip +				
0	F	7	F	0	1	1	B	E	4	Skip -				
0	F	7	F	0	1	3	F	C	0	Input	NET/USB	0	21	Only RX-V2700
0	F	7	F	0	1	4	0	B	F	Zone2 Input	NET/USB	0	24	Only RX-V2700
0	F	7	F	0	1	4	1	B	E	Zone3 Input	NET/USB	0	A0	Only RX-V2700
0	F	7	F	0	1	3	6	C	9	NET/USB	PC/MCX	0	9B	Only RX-V2700
0	F	7	F	0	1	3	7	C	8	Source Select	NET Radio			
0	F	7	F	0	1	3	8	C	7	USB				
0	F	7	F	0	1	2	F	D	0	NET/USB OSD (GUI) Operation	Menu		No Report	Only RX-V2700
0	F	7	F	0	1	3	1	C	E		Enter			
0	F	7	F	0	1	3	5	C	A		Display			
0	F	7	F	0	1	2	E	D	1		Cursor Up			
0	F	7	F	0	1	3	4	C	B		Cursor Down			
0	F	7	F	0	1	3	2	C	D		Cursor Right			
0	F	7	F	0	1	3	0	C	F		Cursor Left			
0	F	7	F	0	1	3	E	C	1	NET/USB Operation	Play		No Report	Only RX-V2700
0	F	7	F	0	1	3	D	C	2		Stop			
0	F	7	F	0	1	3	C	C	3		Skip +			
0	F	7	F	0	1	3	B	C	4		SKip -			

4. Reset Command

The Reset Command recalls factory preset data. Once the factory presets are recalled, all user controllable setting / parameter data will be deleted and replaced with original factory settings.

Do not use this command unless you have been experiencing problems with the system or if you just want to clean up the system.

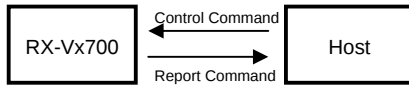


After the system is reset, request the Configuration Command using the Ready Command (see section 2) in order to get accurate feedback of RX-Vx700 status to your touch panel system.



5. Report Command

The RX-Vx700 will send a Report Command in response to Control Commands from the host controller. From the Report Command you can receive the current status of the RX-Vx700.



There are three types of Report Commands classified by their information type.

- System Status Report RX-Vx700 reports a System Status Report when the system status has changed.
- Playback Status Report RX-Vx700 reports a Playback Status Report when the internal playback status has changed.
- Operation Report When the RX-Vx700 is controlled by remote controller, front panel, RS-232C or system controller, the RX-Vx700 sends an Operation Report, which includes the latest setting status of the controlled function.

*The RX-Vx700 reports a System State Report with system guard to inform its power status (power off) if it receives a control command while it is turned off.

*The guard status is included in the Report Command (GRD). If the control command the host sent was accepted, the guard status in the Report Command is '0' (No Guard).

On the contrary the guard status will be 'System Guard' or 'Setting Guard' if the command was guarded for some reason.

(e.g. If you send a 'Speaker A ON' command while you are using a headphone, the guard status will be 'System Guard' because the speaker controls are prohibited when a headphone is being used).

*If a status changes multiple times in a certain time, the RX-Vx700 reports only one report command.



function name	function	data (ASCII)	range (HEX)
TYP	control type	0 - 9	0 - 9
GRD	guard status	0 - 9	0 - 9
RCMD0, 1	command	0 - 9, A - F	0 - 0xFF
RDAT0, 1	data	0 - 9, A - F	0 - 0xFF

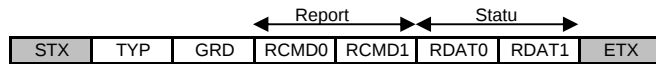
<Control type> This indicates for which type of control the report command is.

TYP	control type
0	controlled by RS-232C
1	controlled by remote controller (IR)
2	controlled by keys in the unit
3	controlled by system
4	controlled by encoder

<Guard status> This indicates guard status against all control commands

GRD	Guard status*
0	no guard
1	system guard
2	setting guard

5.1 System Status Reports



RCMD0, 1	Report Item	RDAT0, 1	Status
00	system	00	OK
		01	Busy
		02	Standby

Ready to accept control commands
 Start of the term prohibits sending commands
 Report against commands which cannot be accepted when Power is on Standby

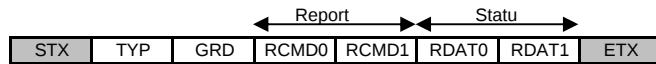
*RX-Vx700 sends this report when the system is reset or the power turns off.
 It can be used for observation of the system revival.

RCMD0, 1	Report Item	RDAT0, 1	Status
01	warning	00	Over Current
		01	DC Detect
		02	Power Trouble
		03	Over Heat

Report of abnormal states
 (Only when it's possible to report)

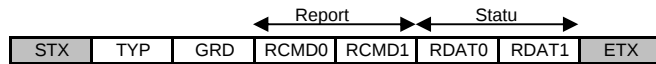
RCMD0, 1	Report Item	RDAT0, 1	Status
06	XM Message	00	Check Antenna
		01	Updating
		02	No Signal
		03	Loading
		04	Off Air
		05	Unavailable
07	iPod Message	00	Loading
		01	Connect Error
		02	Unknown iPod
		03	iPod connected
		04	Disconnected
		05	Unable to play
08	NET/USB Message	00	Please wait
		01	Connected
		02	Disconnected
		03	Access error
		04	List updated
		05	Startup server
		06	Unable to play
		07	Connect error
		08	Bookmark ON
		09	Bookmark OFF
		0A	Not found

5.2 Playback Status Reports



RCMD0, 1	Report Item	RDAT0, 1	Status	RCMD0, 1	Report Item	RDAT0, 1	Status
10	Format	00 01 02 03 04 05 06 07 08 09 0A 0B 0C FE FF	Analog PCM DSD Digital Dolby Digital DTS AAC DTS-HD DTS-HD MSTR DD Plus TrueHD WMA MP3 ??? ---	14	Bit Rate	00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F	32kbps 40kbps 48kbps 56kbps 64kbps 72kbps 80kbps 96kbps 112kbps 128kbps 144kbps 160kbps 192kbps 224kbps 256kbps 288kbps
11	Sampling	00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F 10 FE FF	Analog 8kHz 11.025kHz 12kHz 16kHz 22.05kHz 24kHz 32kHz 44.1kHz 48kHz 64kHz 88.2kHz 96kHz 128kHz 176.4kHz 192kHz 2.8MHz (DSD) ??? ---			10 11 12 13 14 15 16 17 18 19 1A 1B 1C 1D 1E 1F 20 21 22 23 24 25 26 FF	320kbps 384kbps 448kbps 512kbps 576kbps 640kbps 768kbps 960kbps 1024kbps 1152kbps 1280kbps 1344kbps 1408kbps 1411.2kbps 1472kbps 1536kbps 1920kbps 2048kbps 3072kbps 3840kbps Open Variable Loss less ---
12	Channel Front/Rear	00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0F	1+1 1/0 2/0 3/0 2/1 3/1 2/2 3/2 2/3 3/3 2/4 3/4 MLT ---	15	Dialog	00 01 ... 1E 1F FF	-31dB -30dB ... -1dB +0dB ---
13	Channel LFE	00 FF	0.1 ---	16	Flag	xx bit0 bit1 bit2 bit3 bit4 bit5 bit6 bit7	DD Karaoke DD 6.1 dts ES Matrix 6.1 dts ES Discrete 6.1 dts 96kHz/24bit Pre Emphasis DPL Encoded Don't Care

5.3 Operation Reports



RCMD0, 1	Report Item	RDAT0, 1	Status	RCMD0, 1	Report Item	RDAT0, 1	Status
20	Power	00 01 02 03 04 05 06 07	ALL (Main/Zone2/3) OFF ALL (Main/Zone2/3) ON Main On / Zone2 Off / Zone3 Off Main On / Zone2 On / Zone3 On Main On / Zone2 Off / Zone3 Off Main On / Zone2 Off / Zone3 On Main Off / Zone2 On / Zone3 Off Main Off / Zone2 Off / Zone3 On	27	Zone 2 Vol.	00 27 ... C7 ... E8	-∞ (Infinite Attenuation) -80dB 0dB (Max Value of V1700) 16.5dB (Max Value of V2700)
21	Input	00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 10 0/1, x	PHONO CD TUNER CD-R MD/TAPE DVD DTV CBL/SAT SAT VCR1 DVR /VCR2 VCR3/DVR V-AUX/DOCK NET/USB XM Multi CH Multi CH input OFF/ON	28	Program	00 01 02 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F 10 11 12 14 15 16 17 18 19 1C 1E 1F 1D 20 21 24 25 28 29 2C 2D 30 31 32 33 34 35 36 37 3C 40 41 42 43 80	Munich Hall B Hall C Hall D Vienna Live Concert Hall in Amsterdam Tokyo Freiburg Royaumont Chamber Village Gate Village Vanguard The Bottom Line Cellar Club The Roxy Theater Warehouse Loft Arena Disco Party Game 7ch Stereo Music Video DJ Recital/Opera Action Game Roleplaying Game Pavilion Mono Movie Sports Spectacle Sci-Fi Adventure Drama Surround Decode Standard PLII Movie PLII Music Neo: 6 Movie Neo: 6 Music 2ch Stereo Stereo B / 2ch Direct Stereo THX Cinema THX Music THX Game Enhancer 2ch Low Enhancer 2ch High Enhancer 7ch Low Enhancer 7ch High STRAIGHT
22	Audio Select	x, 0 x, 3 x, 4 x, 5 x, 8	AUTO COAX / OPT ANALOG ANALOG ONLY HDMI				
	Decoder Mode	0, x 1, x 2, x	AUTO DTS AAC				
23	Audio Mute	00 01	Off On				
24	Zone2 Input	00 01 02 03 04 05 06 07 08 09 0A 0C 0D 0E	PHONO CD TUNER CD-R MD/TAPE DVD DTV CBL/SAT SAT VCR1 DVR/VCR2 V-AUX/DOCK NET/USB XM				
25	Zone2 Mute	00 01	Off On				
26	Main Volume	00 27 ... C7 ... E8	-∞ (Infinite Attenuation) -80dB 0dB 16.5dB				

RCMD0, 1	Report Item	RDAT0, 1	Status	RCMD0, 1	Report Item	RDAT0, 1	Status
29	Tuner Page	00 01 02 03 04	A B C D E	2C	Sleep	00 01 02 03 04	120 90 60 30 Off
2A	Preset No.	00 01 02 03 04 05 06 07	1 2 3 4 5 6 7 8	2D	EXTD SUR	00 01 02 03 04 05 06	Off EX/ES Discrete On Auto EX PLIIX Movie PLIIX Music
2B	Short Message	00 01 02	Full On Off	2E	SP Relay A	00 01	Off On
				2F	SP Relay B	00 01	Off On

RCMD0, 1	Report Item	RDAT0, 1	Status	RCMD0, 1	Report Item	RDAT0, 1	Status
30	System Memory	01 02 03 04 05 06	Load 1 2 3 4 5 6	37	Zone 2 Vol. Memory	01 02 03 04 05 06	Load 1 2 3 4 5 6
31	System Memory	01 02 03 04 05 06	Save 1 2 3 4 5 6	38	Zone 2 Vol. Memory	01 02 03 04 05 06	Save 1 2 3 4 5 6
32	Volume Memory	01 02 03 04 05 06	Load 1 2 3 4 5 6	39	Dual Mono	00 01 02	Main Sub All
33	Volume Memory	01 02 03 04 05 06	Save 1 2 3 4 5 6	3A	Trigger1 Control	00 01 02 03	All (Zone1-3) Main Zone 2 Zone 3
34	Headphone	00 01	Off On	3B	Trigger2 Control	00 01 02 03	All (Zone1-3) Main Zone2 Zone3
35	Tuner Band	00 01	FM AM	3C	Trigger2 Output	00 01	Low (Due to the delay) High (Due to the delay)
36	Trigger1 Output	00 01	Low (Due to the delay) High (Due to the delay)	3D	SP B SET	00 01	Main Zone B
				3E	Zone 2 Amp	00 01 02 03	EXT INT: Speaker[1] INT: Speaker[2] INT: Both
				3F	Zone 3 Amp	00 01 02 03	EXT INT: Speaker[1] INT: Speaker[2] INT: Both

RCMD0, 1	Report Item	RDATA0, 1	Status	RCMD0, 1	Report Item	RDATA0, 1	Status
40	Level Front R	14 15 ... 3C	-10dB -9.5dB +10dB	47	Level Presence R	14 15 ... 3C	-10dB -9.5dB +10dB
41	Level Front L	14 15 ... 3C	-10dB -9.5dB +10dB	48	Level Presence L	14 15 ... 3C	-10dB -9.5dB +10dB
42	Level Center	14 15 ... 3C	-10dB -9.5dB +10dB	49	Level Subwoofer	14 15 ... 3C	-10dB -9.5dB +10dB
43	Level Surround R	14 15 ... 3C	-10dB -9.5dB +10dB	4B	Zone2 Tone Control Bass	00 01 ... 14	-10dB -9dB +10dB
44	Level Surround L	14 15 ... 3C	-10dB -9.5dB +10dB	4C	Zone2 Tone Control Treble	00 01 ... 14	-10dB -9dB +10dB
45	Level Surround Back R	14 15 ... 3C	-10dB -9.5dB +10dB	4D	Zone3 Tone Control Bass	00 01 ... 14	-10dB -9dB +10dB
46	Level Surround Back L	14 15 ... 3C	-10dB -9.5dB +10dB	4E	Zone3 Tone Control Treble	00 01 ... 14	-10dB -9dB +10dB

RCMD0, 1	Report Item	RDATA0, 1	Status	RCMD0, 1	Report Item	RDATA0, 1	Status
50	Main L/R Balance	00 ... 14 ... 28	Lch Max Mid Rch Max	5B	Initial Volume	00 27 ... C7 ... E8	Off -80dB 0dB 16.5dB
51	LFE Level SP	00 01 ... 14	-20dB -19dB 0dB	5E	Decoder Mode	0, x 1, x 2, x x, 0 x, 1 x, 2 x, 3 x, 4 x, 5 x, 6 x, 7 x, 9 x, A x, C x, E	Auto DTS AAC PHONO CD TUNER CD-R MD/TAPE DVD DTV CBL/SAT VCR1 DVR / VCR2 V-AUX XM
52	LFE Level HP	00 01 ... 14	-20dB -19dB 0dB	5F	Decoder Mode Set	00 01	Auto Last
53	Audio Delay	00 01 ... F0	0ms 1ms 240ms				
58	Wall Paper	00 0E 0F	YES Gray NONE				
5A	MAX Volume	00 01 02 ... 08 09 0A	-30dB -25dB -20dB 10dB 15dB 16.5dB				

RCMD0, 1	Report Item	RDATA0, 1	Status	RCMD0, 1	Report Item	RDATA0, 1	Status
60	Audio Select Set	00 01	Auto Last	68	Memory Guard	00 01	Off On
61	Dimmer	00 01 02 03 04	-4 -3 -2 -1 0	69	Video Conversion	00 01	Off On
62	OSD Shift (RX-V1700)	00 ... 0A	-5 5	6B	Zone3 Volume Out	00 01	Variable Fixed
	GUI Position (RX-V2700)	x, 0 ... x, A 0, x ... A, x	Horizontal -5 5 Vertical -5 5	6C	Zone OSD	00 01 02	Off Zone2 Zone2 & Zone3
63	Gray Back	00 01	Off Auto	6E	2ch Decoder	00 01 02 03 04 05 06 07 09	Pro Logic PLIIX Movie PLIIX Music PLIIX Game Neo:6 Cinema Neo:6 Music CSII Cinema CSII Music Neural Sur.
64	Dynamic Range SP	00 01 02	Max. Std. Min.	6F	Multi CH BGV	00 01 05 06 07 09 0A 0C	Off Last DVD DTV CBL/SAT VCR1 DVR/VCR2 V-AUX
65	Dynamic Range HP	00 01 02	Max. Std. Min.				
66	Zone2 Volume Out	00 01	Variable Fixed				
67	FL Scroll	00 01	Continue Once				

RCMD0, 1	Report Item	RDATA0, 1	Status	RCMD0, 1	Report Item	RDATA0, 1	Status
70	Center SP	00 01 02	Large Small None	7B	Multi CH Select	00 02 03 04 05 06 07 09 0A 0C	6ch 8ch CD 8ch CD-R 8ch MD/TAPE 8ch DVD 8ch DTV 8ch CBL/SAT 8ch VCR1 8ch DVR/VCR2 8ch V-AUX
71	Front	00 01	Large Small	7D	PR/SB Priority	00 01	Presence Surround Back
72	Surround SP	00 01 02	Large Small None	7E	Subwoofer Crossover	00 01 02 03 04 05 06 07 08	40 Hz 60 Hz 80 Hz 90 Hz 100 Hz 110 Hz 120 Hz 160 Hz 200 Hz
73	Surround Back	00 01 02 03 04	Large x2 Large x1 Small x2 Small x1 None				
74	Presence	00 01	Yes None				
75	LFE Bass Out	00 01 02	SWFR Main Both				
76	Subwoofer Phase	0, x 1, x	Normal Reverse				

RCMD0, 1	Report Item	RDATA0, 1	Status	RCMD0, 1	Report Item	RDATA0, 1	Status
80	Test	00 01	Off On	8A	THX SB Dist	00 01 02	Under 1ft (0.3m) 1 ~ 4ft (0.3 ~ 1.2m) Over 4ft (1.2m)
85	Component I/P	00 01	Off On	8B	Night Mode Parameter	00 10 11 12 20 21 22	Off Cinema level Low Middle High Music Level Low Middle High
86	HDMI I/P	00 01	Off On	8C	Pure Direct	00 01	Off On
87	HDMI Up-Scaling	00 01 02 03	Through 480p / 576p (NTSC / PAL) (*2) 1080i 720p	8F	HDMI Support Audio	00 01	RX-V2700 / RX-V1700 Other
88	HDMI Aspect	00 01 02	Through 16:9 Normal Smart Zoom				

RCMD0, 1	Report Item	RDATA, 1	Status	RCMD0, 1	Report Item	RDATA, 1	Status
90	XM Preset Page	00	A	96	iPod Charge on Standby	00	Off
		01	B			01	Auto
		02	C	97	iPod Repeat	00	Off
		03	D			01	One
		04	E			02	All
91	XM Preset Num	00	1	98	iPod Shuffle	00	Off
		01	2			01	Songs
		02	3			02	Albums
		03	4	99	NET/USB Repeat	00	Off
		04	5			01	Single
		05	6	9A	NET/USB Shuffle	00	Off
		06	7			01	On
92	XM Search Mode	00	All CH	9B	NET/USB Source Select	00	PC/MCX
		01	Category			01	NET Radio
93	On Screen	02	Preset			02	USB
		00	Off	9C	NET/USB Preset Recall	00	Parameter Error
		01	10sec			01	1
		02	30sec			02	2
94	XM CH Number	03	Always			...	...
		00	CH #0			08	8
		01	CH #1	9D	NET/USB Preset Memory	00	Parameter Error
		...	...			01	1
95	XM Display Hold / Release	FF	CH #255			02	2
		00	Release			...	...
		01	Hold			08	8

RCMD0, 1	Report Item	RDATA, 1	Status	RCMD0, 1	Report Item	RDATA, 1	Status
A0	Zone 3 Input	00	PHONO	A9	Zone2 MAX Volume	00	-30dB
		01	CD			01	-25dB
		02	TUNER			02	-20dB
		03	CD-R			...	...
		04	MD/TAPE			08	10dB
		05	DVD			09	15dB
		06	DTV			0A	16.5dB
		07	CBL/SAT	AA	Zone3 MAX Volume	00	-30dB
		09	VCR1			01	-25dB
		0A	DVR/VCR2			02	-20dB
		0C	V-AUX/DOCK			...	...
		0D	NET/USB			08	10dB
		0E	XM			09	15dB
A1	Zone 3 Mute	00	Off			0A	16.5dB
		01	On	AB	Zone2 Initial Volume	00	Off
A2	Zone 3 Volume	00	-∞ (Infinite Attenuation)			27	-80dB
		27	-80dB			...	...
		...	...			C7	0dB
		C7	0dB (Max Value of V1700)			...	...
A3	Zone 3 Volume Memory	...	...	AC	Zone3 Initial Volume	E8	16.5dB
		E8	16.5dB (Max Value of V2700)			00	Off
		01	Load 1			27	-80dB
		02	2			...	...
		03	3			C7	0dB
		04	4			...	...
A4	Zone 3 Volume Memory	05	5	AD	Zone2 Balance	E8	16.5dB
		06	6			00	L20
		01	Save 1			01	L19
		02	2			...	...
		03	3			14	Mid
		04	4			...	...
A5	Mute Type	05	5	AE	Zone3 Balance	27	R19
		06	6			28	R20
A7	EQ Select Type	00	Full			00	L20
		01	-20dB			01	L19
		02	Auto PEQ			...	...
A8	Tone Bypass	00	Auto			14	Mid
		01	off			...	...
		02	EQ Off			27	R19

RCMD0, 1	Report Item	RDAT0, 1	Status	RCMD0, 1	Report Item	RDAT0, 1	Status
B0	Advanced Setup	00 01	Off On	B7	User Preset	00 01	Cancel Reset
B1	Remote ID for AMP	00 01	ID1 ID2	B8	Video Reset	00 01	Cancel Yes
B2	Fan Control Mode	00 01	Auto Cont.	B9	Remote Sensor	00 01	On Off
B3	Speaker Impedance	00 01	8 ohm 6 ohm	BA	Remote ID for XM	00 01	ID1 ID2
B4	Tuner Step	00 01	AM10 / FM100 (kHz) AM 9 / FM50 (kHz)	BB	Bi-AMP	00 01	On Off
B5	Remote ID for Tuner	00 01	ID1 ID2	BC	TV Format	00 01	PAL NTSC
B6	Language	00	English	BD	Wake on RS232C	00 01	No Yes
		01	Japanese	BE	Network Reset	00 01	Cancel Yes
		02	French	BF	Monitor Check	00	Skip Yes
		03	German			01	
		04	Spanish			00	
		05	Russian			01	

Attention

* When the Input is changed, the RX-Vx700 sends an Operation Report for Input (RCMD0,1="21") and Audio Select (RCMD0,1="22").

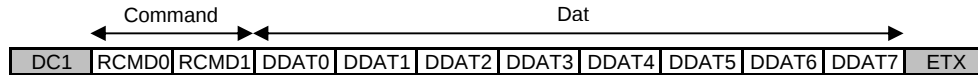
* When the System Memory is changed, the RX-Vx700 sends an Operation Report for System Memory (RCMD0,1="30") and Configuration Command.

* When a headphone is plugged into the headphone jack and the Speaker Relay is turned off, the RX-Vx700 sends an Operation Report for Speaker Relay A and B (RCMD0,1="2E", "2F", RDAT="00(OFF)").
The RX-Vx700 sends an Operation Command for Speaker Relay A and B when the headphone is removed also.

* Each time the source from the Inputs or playback status (ex. 6.1/ES, RED DTS etc.) of the system changes, the RX-Vx700 sends a Playback Status report.

* Each time the busy status of the system changes, the RX-Vx700 sends a System Status report.

5.4 Display Text Data Report



RCMD0,1	ITEM	DDAT0-1	DDAT2-7
00	Tuner Frequency	SP	6digits <Upper Lower>

(example)

AM 1710kHz = 'SP' 'SP' '1' '7' '1' '0'

FM 108.5MHz = 'SP' 'SP' '1' '0' '8' '.' '5' '0'

RCMD0,1	ITEM	DDAT0	DDAT1-7
01	Main Volume	SP	7digits <Upper Lower>

(example)

-40.0dB = 'SP' '-' '4' '0' '.' '0' 'd' 'B'

RCMD0,1	ITEM	DDAT0	DDAT1-7
02	Zone2 Volume	SP	7digits <Upper Lower>

RCMD0,1	ITEM	DDAT0-7
03	Input name SP	8letters <Right Left>

(example)

DVR/VCR2 = 'D' 'V' 'R' '/' 'V' 'C' 'R' '2'

RCMD0,1	ITEM	DDAT0-7
04	Zone 2 Input name	8letters <Right Left>

RCMD0,1	ITEM	DDAT0-2	DDAT3-7
05	Zone3 Volume	SP	5digits <Upper Lower>

RCMD0,1	ITEM	DDAT0-7
06	Zone 3 Input name	8letters <Right Left>

RCMD0,1	ITEM	DDAT0-3	DDAT4-7
F0	Remote Code	SP	4digits <Upper Lower>

(example)

'SP' 'SP' 'SP' 'SP' '7' 'A' '0' '0'

RCMD0,1	ITEM	DDAT0	DDAT1-2	DDAT3	DDAT4	DDAT5-6	DDAT7
FF	Version Information	Major Version	Software Version	" " (Don't care)	RS-232C Major Version	DSP Parameter Version	" " (Don't care)

FUNCTION	ITEM	DATA (ASCII)	RANGE
RCMD0,1	Command	0-9, A-F	0...0xFF
DDAT 0-7	Data	0-9, A-Z SP, other ASCII	ASCII Space, dots

Example of RX-Vx700 Control Procedure

[1] Connection Start procedure (AC Plug / RS-232C cable connection)

When the AC plug / RS-232C cable are not connected, the RX-Vx700 cannot send any data to the host. If the host doesn't receive a configuration command after sending a Ready command 5 times, the host should disable the RS-232C communication and send an alert to the graphic user interface (GUI).

[2] AC plug / RS-232C connection check sequence after the connection has been confirmed in the procedure [1].

If the host doesn't receive a Report Command within 500ms of sending a command, the host should resend the command. If no Report Command is received after sending 5 times, check the AC plug/RS-232 cable (cf. [1]).

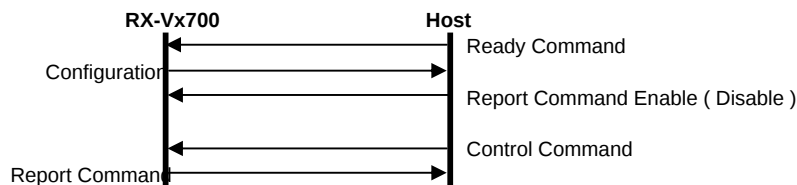
When the RS-232C cable is disconnected, the commands generated inside the RX-Vx700 are stored in the sending buffer. If the stored commands exceed the buffer memory size (buffer overflow), the RX-Vx700 stops reporting any commands. In this case, reconnecting the AC plug or Connection Start procedure [1] will be needed in order to enable the command report.

[3] AC plug connection detection (after [1],[2])

When the AC connection is reset, the RX-Vx700 sends a Configuration Command to the host. The host can display the status of the RX-Vx700 to its GUI.

[4] Getting the status of the RX-Vx700 when the host boots up

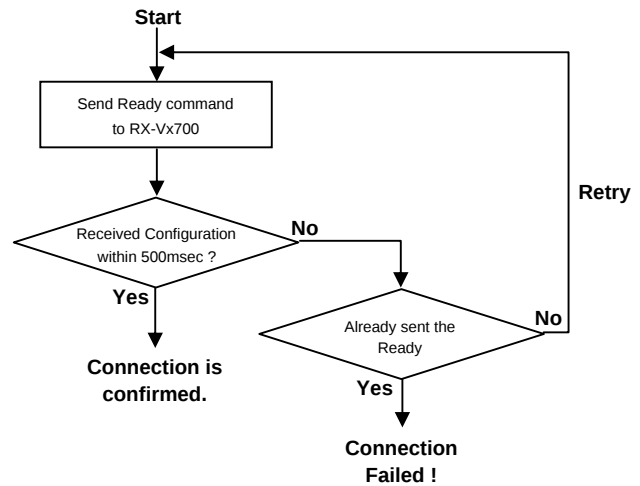
At first, the host should send a Ready command and receive the Configuration Command from the RX-Vx700 (cf. [1]). Once the connection is confirmed, the host can send Control Commands to the RX-Vx700. When the RX-Vx700 is turned off, it accepts only System Commands and Power ON command.



[5] Error transactions after [4]

While sending a control command, if the RX-Vx700 didn't send any corresponding Report Commands regardless of re-trying for 5 times, the host should clear its send buffer and then check the AC plug / RS-232C connection sequence (cf. [1]). When the RX-Vx700 responds, the host can display the RX-Vx700 status to its GUI then return to the normal communication sequence. If not, the host should cancel the communication and report the alert to its GUI.

[1] : AC Plug / RS-232C connection check (Start transaction)



Appendix

* ASCII Chart

	0	1	2	3	4	5	6	7
0	NUL	DLE	SP	0	@	P	`	p
1	SOH	DC1	!	1	A	Q	a	q
2	STX	DC2	"	2	B	R	b	r
3	ETX	DC3	#	3	C	S	c	s
4	EOT	DC4	\$	4	D	T	d	t
5	ENQ	NAK	%	5	E	U	e	u
6	ACK	SYN	&	6	F	V	f	v
7	BEL	ETB	'	7	G	W	g	w
8	BS	CAN	(	8	H	X	h	x
9	HT	EM	)	9	I	Y	i	y
A	LF	SUB	*	:	J	Z	j	z
B	VT	EXC	+	;	K	[	k	{
C	FF	FS	,	<	L	\	l	
D	CR	GS	-	=	M	]	m	}
E	SO	RS	.	>	N	^	n	...
F	SI	US	/	?	O	_	o	DEL

* Column numbers = the first hexadecimal digit
 Row numbers = the second hexadecimal digit

* The characters in the gray cells are available for RS-232C communication.