

2010 AVR
RS-232C & IP Commands for Custom Integration
Ver. 1.00.00

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Beginning

This list is common in RS232C and IPcontrol.

VSX-31 and VSX-30 correspond to RS232C only.

About Network Standby

This setting allows the IP Control function for operating the receiver from a IP control system connected on the same LAN as the receiver to be used even when the receiver is in the standby mode.

1. Select 'Network Standby' from the Network Setup menu.
2. Then set to "ON".



RS232C Physical Connection

Connector

RS232C DB9 Male, Cross

Pin	AV Receiver
1	*1
2	RXD
3	TXD
4	*1
5	GND
6	*1
7	RTS (BUSY)
8	NC
9	NC

*1 Pin 1&4&6 are shorted each other.

Communication

Communication Speed : 9600bps
Character length: 8bits
Parity: None
Start bit: 1bits
Stop bit: 1bit

Ethernet

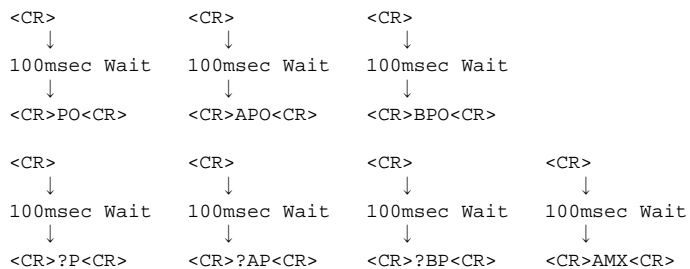
Communication port

TCP Port 23

Notice

Notice1

This equipment save the power consumption (less than 1W) during the standby mode.
To achieve this, main CPU doesn't operate during standby mode.
For this reason, this equipment can not receive the 1st command from rs-232c port.
But main CPU will be waked up by this 1st command.
This equipment is using 1st command "<CR>" as only a trigger to wake up the main CPU
and can not decode 1st command.
Please send command as bellow.
Please make sure to have at least 100msec. Interval between the 1st command and the second command.



Notice2

It may happen to take time for the set product to respond to the command from your remote controlling system.

Notice3

After set to PANEL LOCK or REMOTE LOCK mode,
"PANEL LOCK" or "REMOTE LOCK" message appear on FL display
when a front panel key or remote control button pushed.

A/V Receiver Control Commands List

File Ver.1.10.00

AUEL Ver.1.16.00

About Automatic Feedback

When the customer changes the status using key on the front panel or the remote controller of AV receiver,
AV receiver send new status automatically.

(For ex.) The user changes function on the front panel.

Response from AV receiver : FN**<CR+LF>

Other Automatic Feedback status table.

AV Receiver status	Response	
POWER	PWR*<CR+LF>	(*1)
VOLUME	VOL**<CR+LF>	
MUTE	MUT*<CR+LF>	
INPUT SOURCE	FN**<CR+LF>	
LISTENING MODE SET	SR****<CR+LF>	
LISTENING MODE	LM***<CR+LF>	
SPEAKERS	SPK*<CR+LF>	
HDMI OUTPUT SELECT	HO*<CR+LF>	
SBch PROCESSING	EX*<CR+LF>	
MCACC MEMORY	MC*<CR+LF>	
PHASE CONTROL	IS*<CR+LF>	
TONE	TO*<CR+LF>	
BASS	BA**<CR+LF>	
TREBLE	TR**<CR+LF>	
HDMI AUDIO	HA*<CR+LF>	
TUNER PRESET	PR***<CR+LF>	
TUNER FREQUENCY	FR*****<CR+LF>	
XM CHANNEL	XM***<CR+LF>	
SIRIUS CHANNEL	SIR***<CR+LF>	
ZONE 2 POWER	APR*<CR+LF>	
ZONE 3 POWER	BPR*<CR+LF>	
ZONE 2 VOLUME	ZV**<CR+LF>	
ZONE 3 VOLUME	YV**<CR+LF>	
ZONE 2 MUTE	Z2MUT*<CR+LF>	
ZONE 3 MUTE	Z3MUT*<CR+LF>	
ZONE 2 INPUT	Z2F**<CR+LF>	
ZONE 3 INPUT	Z3F**<CR+LF>	
PQLS	PQ*<CR+LF>	
CH LEVEL	CLV*****<CR+LF>	
VIRTUAL SB	VSB*<CR+LF>	
VIRTUAL HEIGHT	VHT*<CR+LF>	
FL display information	FL*<CR+LF>	(*2)
Input Name Information	RGB*<CR+LF>	

(*1)When EXTENSION or RF Remote setting is ON, "PWR1" Command is guaranteed.

The model not have EXTENSION Setup menu, "PWR1" Command is not guaranteed.

(*2)Only RS232C is guaranteed.

POWER

Command	Function	Response	Parameter	Example
PO<CR>	POWER ON		0: ON	
PF<CR>	POWER OFF		1: OFF	
?P<CR>	Request POWER status.			Command: ?P<CR> Response: PWR0<CR+LF> (now POWER ON)

SC-37 /UXJCB	SC-35 /UXJCB	V SX-33 /UXJCB	V SX-32 /UXJCB	V SX-1120 /UXJCB	V SX-31 /UXCNCB	V SX-30 /UXCNCB
o	o	o	o	o	o	o
o	o	o	o	o	o	o
o	o	o	o	o	o	o

VOLUME

Command	Function	Response	Parameter	Example
VU<CR>	VOLUME UP	VOL***<CR+LF>	***: 000 to 185 by ASCII code. (1step = 0.5dB)	
VD<CR>	VOLUME DOWN			

SC-37 /UXJCB	SC-35 /UXJCB	V SX-33 /UXJCB	V SX-32 /UXJCB	V SX-1120 /UXJCB	V SX-31 /UXCNCB	V SX-30 /UXCNCB
o	o	o	o	o	o	o
o	o	o	o	o	o	o

***VL<CR>	VOLUME SET	185 : +12.0dB 184 : +11.5dB 161 : 0.0dB 001 : -80.0dB 000 : ---.-dB (MIN)	061VL<CR> (set to -50.0dB.)	○	○	○	○	○	○
?V<CR>	Request VOLUME LEVEL.		Command: ?V<CR> Response: VOL160<CR>+LF> (VOLUME is set to 0.0dB)	○	○	○	○	○	○

MUTE

Command	Function	Response	Parameter	Example
MO<CR>	MUTE ON		0 : ON	
MF<CR>	MUTE OFF		1 : OFF	
?M<CR>	Request MUTE status.			Command: ?M<CR> Response: MUT1<CR+LF> (MUTE OFF)

INPUT

Command	Function	Response	Parameter	Example
FN<CR>	INPUT CHANGE	FN<CR+LF>	04: DVD 25: BD 05: TV/SAT 15: DVR/BDR 10: VIDEO 1 (VIDEO) 14: VIDEO 2 19: HDMI 1 20: HDMI 2 21: HDMI 3 22: HDMI 4 23: HDMI 5 26: HOME MEDIA GALLERY(Internet Radio) 17: iPod/USB 18: XM RADIO 01: CD 03: CD-R/TAPE 02: TUNER 00: PHONO 12: MULTI CH IN 33: ADAPTER PORT 27: SIRIUS 31: HDMI (cyclic)	15FN<CR> (set to DVR.)
FU<CR>	INPUT CHANGE (cyclic)			
FD<CR>	INPUT CHANGE REVERSE			
?F<CR>	Request INPUT source			Command:?F<CR> Response:FN05<CR+LF> (TV/SAT is selected.)

LISTENING MODE

There are some modes which is not available depending on the input signal.

?MC<CR>	Request MCACC MEMORY status		0: MCACC MEMORY (cyclic) 1: MEMORY 1 2: MEMORY 2 3: MEMORY 3 4: MEMORY 4 5: MEMORY 5 6: MEMORY 6	Command:?MC<CR> Response:MC3<CR+LF> (now MEMORY 3 is selected.)						
IS<CR>	PHASE CONTROL	IS<CR+LF>								
?IS<CR>	Request PHASE CONTROL status		0: PHASE CONTROL OFF 1: PHASE CONTROL ON 2: FULL BAND PHASE CONTROL ON 9: PHASE CONTROL ON/OFF	Command:?IS<CR> Response:IS1<CR+LF> (now PHASE CONTROL ON is selected.)						
VSB<CR>	VIRTUAL SB	VSB<CR+LF>								
?VSB<CR>	Request VIRTUAL SB status		0: OFF 1: ON 9: ON/OFF	Command:?VSB<CR> Response:VSB0<CR+LF> (now VIRTUAL SB OFF is selected.)						
*VHT<CR>	VIRTUAL HEIGHT	VHT<CR+LF>								
?VHT<CR>	Request VIRTUAL HEIGHT status		0: OFF 1: ON 9: ON/OFF	Command:?VHT<CR> Response:VHT1<CR+LF> (now VIRTUAL HEIGHT ON is selected.)						

CHANNEL LEVEL

Command	Function	Response	Parameter	Example	SC-37 /UXJCB	SC-35 /UXJCB	VSX-33 /UXJCB	VSX-32 /UXJCB	VSX-1120 /UXJCB	VSX-31 /UXCNCB	VSX-30 /UXCNCB
CLC<CR>	CH SELECT	CLV####*<CR+LF>									
CLU<CR>	CH LEVEL UP										
CLD<CR>	CH LEVEL DOWN										
####*CLV <CR>	CH LEVEL DIRECT SET		###: (CH) L_: Front Left R_: Front Right C_: Center SL_: Surround Left SR_: Surround Right SBL: Surround Back Left SBR: Surround Back Right SW_: Subwoofer LH_: Front Height Left RH_: Front Height Right RW_: Front Wide Left LW_: Front Wide Right	Command:SL_48CLV<CR> Response:CLVSL_48<CR+LF> (Set to SLch -0.5dB)							
?###CLV<CR>	Request CH LEVEL		**:(Value) 26 to 74 by ASCII code. (1step=0.5dB) 74: +12.0dB (MAX) 52: +1.0dB 51: -0.5dB 50: 0.0dB 49: -0.5dB 48: -1.0dB 26: -12.0dB (MIN)	Command:?C__CLV<CR> Response:CLVC__72<CR+LF> (now Cch +11.0dB)							

AMP FUNCTION

Command	Function	Response	Parameter	Example	SC-37 /UXJCB	SC-35 /UXJCB	VSX-33 /UXJCB	VSX-32 /UXJCB	VSX-1120 /UXJCB	VSX-31 /UXCNCB	VSX-30 /UXCNCB
SPK<CR>	SPEAKERS	SPK<CR+LF>									
?SPK<CR>	Request SPEAKERS status		0: SPEAKER OFF 1: SPEAKER A ON 2: SPEAKER B ON 3: SPEAKER A+B ON 9: SPEAKERS (cyclic)	Command:?SPK<CR> Response:SPK1<CR+LF> (now SPEAKER A ON.)							
HO<CR>	HDMI OUTPUT SELECT	HO<CR+LF>						x	x	x	x

?HO<CR>	Request HDMI OUTPUT status		0: HDMI OUT ALL 1: HDMI OUT 1 2: HDMI OUT 2 9: HDMI OUT (cyclic)	Command: ?HO<CR> Response: HO0<CR+LF> (now HDMI OUT ALL is selected.)
HA<CR>	HDMI AUDIO	HA<CR+LF>		
?HA<CR>	Request HDMI AUDIO status		0: AMP 1: THROUGH 9: AMP/THROUGH (cyclic)	Command: ?HA<CR> Response: HA0<CR+LF> (now AMP is selected.)
PQ<CR>	PQLS	PQ<CR+LF>		
?PQ<CR>	Request PQLS setting status		0: OFF 1: AUTO 9: AUTO/OFF (cyclic)	Command: ?PQ<CR> Response: PQ0<CR+LF> (now PQLS setting OFF is selected.)

o	o	o	x	x	x	x
o	o	o	o	o	o	o
o	o	o	o	o	o	o
o	o	o	o	o	o	o
o	o	o	o	o	o	o

KEY LOCK

Command	Function	Response	Parameter	Example
PKL<CR>	PANEL KEY LOCK	PKL<CR+LF>		*PKL<CR>
?PKL<CR>	Request PANEL KEY LOCK status		0: PANEL KEY LOCK (& VOLUME) OFF 1: PANEL KEY LOCK ON 2: PANEL KEY & VOLUME LOCK ON	Command: ?PKL<CR> Response: PKL1<CR+LF> (now PANEL KEY LOCK ON.)
RML<CR>	REMOTE LOCK	RML<CR+LF>		*RML<CR>
?RML<CR>	Request REMOTE LOCK status		0: REMOTE LOCK OFF 1: REMOTE LOCK ON	Command: ?RML<CR> Response: PKL1<CR+LF> (now REMOTE LOCK ON.)

SC-37 /UXJCB	SC-35 /UXJCB	VSX-33 /UXJCB	VSX-32 /UXJCB	VSX-1120 /UXJCB	VSX-31 /UXCNB	VSX-30 /UXCNB
o	o	o	o	o	o	o
o	o	o	o	o	o	o
o	o	o	o	o	o	o
o	o	o	o	o	o	o

CURSOR OPERATION

Command	Function	Response	Parameter	Example
STS<CR>	STATUS DISPLAY	R<CR+LF>		
CUP<CR>	AMP CURSOR UP	R<CR+LF>		
CDN<CR>	AMP CURSOR DOWN	R<CR+LF>		
CRI<CR>	AMP CURSOR RIGHT	R<CR+LF>		
CLE<CR>	AMP CURSOR LEFT	R<CR+LF>		
CEN<CR>	AMP CURSOR ENTER	R<CR+LF>		
CRT<CR>	AMP RETURN	R<CR+LF>		
APA<CR>	AUDIO PARAMETER	R<CR+LF>		
VPA<CR>	VIDEO PARAMETER	R<CR+LF>		
HM<CR>	HOME MENU	R<CR+LF>		
KOF<CR>	KEY OFF (for iPod, NETWORK)	R<CR+LF>	When this equipment continue command mode after sending the operation command, it needs to send "KOF" command.	

SC-37 /UXJCB	SC-35 /UXJCB	VSX-33 /UXJCB	VSX-32 /UXJCB	VSX-1120 /UXJCB	VSX-31 /UXCNB	VSX-30 /UXCNB
o	o	o	o	o	o	o
o	o	o	o	o	o	o
o	o	o	o	o	o	o
o	o	o	o	o	o	o
o	o	o	o	o	o	o
o	o	o	o	o	o	o
o	o	o	o	o	o	o
o	o	o	o	o	o	o
o	o	o	o	o	o	o
o	o	o	o	o	o	o
o	o	o	o	o	o	o

ZONE POWER

Command	Function	Response	Parameter	Example
APO<CR>	ZONE 2 POWER ON	APR*<CR+LF>	0: ON 1: OFF	
APF<CR>	ZONE 2 POWER OFF			
?AP<CR>	Request ZONE 2 POWER status			Command: ?AP<CR> Response: APR0<CR+LF> (ZONE 2 POWER ON)
BPO<CR>	ZONE 3 POWER ON	BPR*<CR+LF>		
BPF<CR>	ZONE 3 POWER OFF			
?BP<CR>	Request ZONE 3 POWER status			Command: ?BP<CR> Response: BPR1<CR+LF> (ZONE 3 POWER OFF)

SC-37 /UXJCB	SC-35 /UXJCB	VSX-33 /UXJCB	VSX-32 /UXJCB	VSX-1120 /UXJCB	VSX-31 /UXCNB	VSX-30 /UXCNB
o	o	o	o	o	o	o
o	o	o	o	o	o	o
o	o	o	o	o	o	o
o	o	o	x	x	x	x
o	o	o	x	x	x	x
o	o	o	x	x	x	x

ZONE INPUT

Command	Function	Response	Parameter	Example
Z2MO<CR>	ZONE 2 MUTE ON	Z2MUT*<CR+LF>	0 : ON 1 : OFF	
Z2MF<CR>	ZONE 2 MUTE OFF			
?Z2M<CR>	Request ZONE 2 MUTE status			Command:?Z2M<CR> Response:Z2MUT1<CR+LF> (now ZONE 2 MUTE OFF)
Z3MO<CR>	ZONE 3 MUTE ON	Z3MUT*<CR+LF>		
Z3MF<CR>	ZONE 3 MUTE OFF			
?Z3M<CR>	Request ZONE 3 MUTE status			Command:?Z3M<CR> Response:Z3MUT0<CR+LF> (now ZONE 3 MUTE ON)

SC-37 /UXJCB	SC-35 /UXJCB	V SX-33 /UXJCB	V SX-32 /UXJCB	V SX-1120 /UXJCB	V SX-31 /UXCNCB	V SX-30 /UXCNCB
o	o	o	o	o	o	o
o	o	o	o	o	o	o
o	o	o	o	o	o	o
x	x	x	x	x	x	x
x	x	x	x	x	x	x
x	x	x	x	x	x	x

TUNER

Command	Function	Response	Parameter	Example
TFI<CR>	TUNER FREQ INCREMENT	FR*****<CR+LF>	A: AM F: FM FREQUENCY: 0 to 9 by ASCII code A00530=AM 530kHz A01700=AM 1700kHz F08750=FM 87.50MHz F10800=FM 108.00MHz	
TFD<CR>	TUNER FREQ DECREMENT			
?FR<CR>	Request TUNER FREQUENCY			Command:?FR<CR> Response:FRF08800<CR+LF> > (now FM 88.00MHz)
TB<CR>	TUNER BAND	PR***<CR+LF>	*: 0 to 9 by ASCII code. A01: CLASS "A",NUMBER 1 ... G09: CLASS "G",NUMBER 9 (CLASS = A to G, NUMBER = 01 to 09	
*TP<CR>	TUNER PRESET (DIGIT key)			8TP<CR> (set to preset number 8.)
TC<CR>	TUNER CLASS change			
TPI<CR>	TUNER PRESET INCREMENT			
TPD<CR>	TUNER PRESET DECREMENT			
?PR<CR>	Request TUNER PRESET No.			Command:?PR<CR> Response:PRB04<CR+LF> (now tuner preset No. is B4)
TAC<CR>	DIRECT ACCESS	R<CR+LF>		Command: TAC<CR>8TP<CR>7TP<CR>5TP<CR>0TP<CR> (87.50MHz direct set)

SC-37 /UXJCB	SC-35 /UXJCB	V SX-33 /UXJCB	V SX-32 /UXJCB	V SX-1120 /UXJCB	V SX-31 /UXCNCB	V SX-30 /UXCNCB
o	o	o	o	o	o	o
o	o	o	o	o	o	o
o	o	o	o	o	o	o
o	o	o	o	o	o	o
o	o	o	o	o	o	o
o	o	o	o	o	o	o
o	o	o	o	o	o	o

iPod Operation

Home Media Gallery Operation

Command	Function	Response	Parameter	Example	SC-37 /UXJCB	SC-35 /UXJCB	VSX-33 /UXJCB	VSX-32 /UXJCB	VSX-1120 /UXJCB	VSX-31 /UXCNB	VSX-30 /UXCNB
00NW<CR>	0 (number key)	R<CR+LF>			o	o	o	o	o	o	o
01NW<CR>	1 (number key)				o	o	o	o	o	o	o
02NW<CR>	2 (number key)				o	o	o	o	o	o	o
03NW<CR>	3 (number key)				o	o	o	o	o	o	o
04NW<CR>	4 (number key)				o	o	o	o	o	o	o
05NW<CR>	5 (number key)				o	o	o	o	o	o	o
06NW<CR>	6 (number key)				o	o	o	o	o	o	o
07NW<CR>	7 (number key)				o	o	o	o	o	o	o
08NW<CR>	8 (number key)				o	o	o	o	o	o	o
09NW<CR>	9 (number key)				o	o	o	o	o	o	o
10NW<CR>	PLAY				o	o	o	o	o	o	o
11NW<CR>	PAUSE				o	o	o	o	o	o	o

12NW<CR>	PREVIOUS (< <)
13NW<CR>	NEXT (|>|>|)
18NW<CR>	DISPLAY
20NW<CR>	STOP
26NW<CR>	UP
27NW<CR>	DOWN
28NW<CR>	RIGHT
29NW<CR>	LEFT
30NW<CR>	ENTER
31NW<CR>	RETURN
32NW<CR>	PROGRAM
33NW<CR>	CLEAR
34NW<CR>	REPEAT
35NW<CR>	RANDOM
36NW<CR>	MENU
37NW<CR>	EDIT
38NW<CR>	CLASS

[illegible]

ADAPTER PORT Operation

Command	Function	Response	Parameter	Example
20BT<CR>	PLAY/PAUSE	R<CR+LF>		
10BT<CR>	PLAY			
11BT<CR>	PAUSE			
12BT<CR>	STOP			
13BT<CR>	PREVIOUS (< <)			
14BT<CR>	NEXT (|>|>|)			
15BT<CR>	REV (< <)			
16BT<CR>	FWD (|>|>)			

Error message

Error Message	Error Name	Meaning	Example
E04<CR+LF>	COMMAND ERROR	Detect inappropriate Command line.	Command:ABCD<CR> Response:E04<CR+LF> (unknown "ABCD" Command.)
E06<CR+LF>	PARAMETER ERROR	Detect inappropriate Parameter.	Command:99FN<CR> Response:E06<CR+LF> (unknown "99" Parameter.)
B00<CR+LF>	BUSY	Now AV Receiver is Busy. Please wait few seconds.	

KEYBOARD Operation

FG59<CR>	Y				o	o	o	o	o	o
FG5A<CR>	Z				o	o	o	o	o	o
FG5B<CR>	[				o	o	o	o	o	o
FG5C<CR>	\ (便宜上全角)				o	o	o	o	o	o
FG5D<CR>	]				o	o	o	o	o	o
FG5E<CR>	^				o	o	o	o	o	o
FG5F<CR>					o	o	o	o	o	o
FG60<CR>	`				o	o	o	o	o	o
FG61<CR>	a				o	o	o	o	o	o
FG62<CR>	b				o	o	o	o	o	o
FG63<CR>	c				o	o	o	o	o	o
FG64<CR>	d				o	o	o	o	o	o
FG65<CR>	e				o	o	o	o	o	o
FG66<CR>	f				o	o	o	o	o	o
FG67<CR>	g				o	o	o	o	o	o
FG68<CR>	h				o	o	o	o	o	o
FG69<CR>	i				o	o	o	o	o	o
FG6A<CR>	j				o	o	o	o	o	o
FG6B<CR>	k				o	o	o	o	o	o
FG6C<CR>	l				o	o	o	o	o	o
FG6D<CR>	m				o	o	o	o	o	o
FG6E<CR>	n				o	o	o	o	o	o
FG6F<CR>	o				o	o	o	o	o	o
FG70<CR>	p				o	o	o	o	o	o
FG71<CR>	q				o	o	o	o	o	o
FG72<CR>	r				o	o	o	o	o	o
FG73<CR>	s				o	o	o	o	o	o
FG74<CR>	t				o	o	o	o	o	o
FG75<CR>	u				o	o	o	o	o	o
FG76<CR>	v				o	o	o	o	o	o
FG77<CR>	w				o	o	o	o	o	o
FG78<CR>	x				o	o	o	o	o	o
FG79<CR>	y				o	o	o	o	o	o
FG7A<CR>	z				o	o	o	o	o	o
FG7B<CR>	{				o	o	o	o	o	o
FG7C<CR>	|				o	o	o	o	o	o
FG7D<CR>	}				o	o	o	o	o	o
FG7E<CR>	~				o	o	o	o	o	o
FGTB<CR>	TAB				o	o	o	o	o	o
FGDL<CR>	DELETE				o	o	o	o	o	o
FGBS<CR>	BACK SPACE				o	o	o	o	o	o
FGPU<CR>	PAGE UP				x	x	x	x	x	x
FGPD<CR>	PAGE DOWN				x	x	x	x	x	x
FGCL<CR>	CAPS LOCK				x	x	x	x	x	x
FGNL<CR>	NUM LOCK				x	x	x	x	x	x

Information Request

					SC-37 /UXJCB	SC-35 /UXJCB	VSX-33 /UXJCB	VSX-32 /UXJCB	VSX-1120 /UXJCB	VSX-31 /UXCNCB	VSX-30 /UXCNCB
Command	Function	Response	Parameter	Example	o	o	o	o	o	o	o
?FL<CR>	Request FL display information (Only RS232C is guaranteed.)	FL*<CR+LF>	See "command list3" sheet.		o	o	o	o	o	o	o
?AST<CR>	Request AUDIO information	AST*<CR+LF>	See "command list2" sheet.		o	o	o	o	o	o	o
?VST<CR>	Request VIDEO information	VST*<CR+LF>	See "command list2" sheet.		o	o	o	o	o	o	o
?RGB**<CR>	Request Input Name information	RGB*<CR+LF>	See "command list3" sheet.		o	o	o	o	o	o	o



Request AUDIO information Parameter by ASCII code

?AST<CR>

AST(data1)(data2).....(data32)(data33)<CR+LF>

ex DOLBY DIGITAL 3/2/.1 in PRO LOGIC2 MOVIE playing, SP setting 7.1ch(SBch*2),
AST05021111100010000000111110110000<CR+LF>

data1~data2:Audio Input Signal

Data	Parameter	Signal
(data1)(data2)	00	ANALOG
	01	ANALOG
	02	ANALOG
	03	PCM
	04	PCM
	05	DOLBY DIGITAL
	06	DTS
	07	DTS-ES Matrix
	08	DTS-ES Discrete
	09	DTS 96/24
	10	DTS 96/24 ES Matrix
	11	DTS 96/24 ES Discrete
	12	MPEG-2 AAC
	13	WMA9 Pro
	14	DSD->PCM
	15	HDMI THROUGH
	16	DOLBY DIGITAL PLUS
	17	DOLBY TrueHD
	18	DTS EXPRESS
	19	DTS-HD Master Audio
	20	DTS-HD High Resolution
	21	DTS-HD High Resolution
	22	DTS-HD High Resolution
	23	DTS-HD High Resolution
	24	DTS-HD High Resolution
	25	DTS-HD High Resolution
	26	DTS-HD High Resolution
	27	DTS-HD Master Audio

data3~data4:Audio Input Frequency

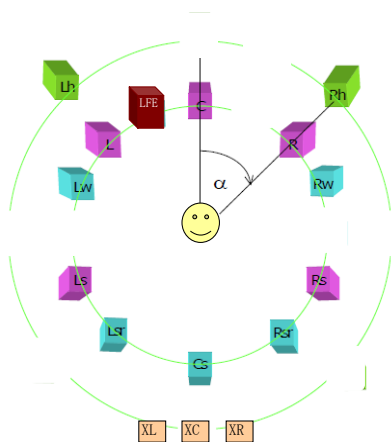
Data	Parameter	Frequency
(data3)(data4)	00	32kHz
	01	44.1kHz
	02	48kHz
	03	88.2kHz
	04	96kHz
	05	176.4kHz
	06	192kHz

data5~data20:Audio Input Channel Format

Data	Parameter	Channel Format info
(data5)	0 or 1	L : L
(data6)	0 or 1	C : C
(data7)	0 or 1	R : R
(data8)	0 or 1	SL : Ls
(data9)	0 or 1	SR : Rs
(data10)	0 or 1	SBL : Lsr,Lrs,Lb
(data11)	0 or 1	S : Cs,ES,EX,LtRt
(data12)	0 or 1	SBR : Rsr,Rrs,Rb
(data13)	0 or 1	LFE : LFE
(data14)	0 or 1	FHL : Lh,Lvh
(data15)	0 or 1	FHR : Rh,Rvh
(data16)	0 or 1	FWL : Lw
(data17)	0 or 1	FWR : Rw
(data18)	0 or 1	XL : Lhs,Lhr,Lss,Lc,Lsd,
(data19)	0 or 1	XC : Ts,Oh,Ch,Chr,LFE2,Cvh
(data20)	0 or 1	XR : Rhs,Rhr,Rss,Rc,Rsd,

data21~data33:Audio Output Channel

Data	Parameter	Output Channel
(data21)	0 or 1	L
(data22)	0 or 1	C
(data23)	0 or 1	R
(data24)	0 or 1	SL
(data25)	0 or 1	SR
(data26)	0 or 1	SBL
(data27)	0 or 1	SB
(data28)	0 or 1	SBR
(data29)	0 or 1	SW
(data30)	0 or 1	FHL
(data31)	0 or 1	FHR
(data32)	0 or 1	FWL
(data33)	0 or 1	FWR



Request VIDEO information Parameter by ASCII code

?VST<CR>
VST(data1)(data2).....(data24)(data25)<CR+LF>

data1:Input Terminal

Data	Parameter	Signal from below
(data1)	0	---
	1	VIDEO
	2	S-VIDEO
	3	COMPONENT
	4	HDMI
	5	Self OSD/JPEG

data2~3:Input Resolution

Data	Parameter	Signal Format
(data2)(data3)	00	---
	01	480/60i
	02	576/50i
	03	480/60p
	04	576/50p
	05	720/60p
	06	720/50p
	07	1080/60i
	08	1080/50i
	09	1080/60p
	10	1080/50p
	11	1080/24p

data4:Input aspect

Data	Parameter	Signal Format
(data4)	0	---
	1	4:3
	2	16:9
	3	14:9

data5:Input color format(HDMI only)

Data	Parameter	Signal Format
(data5)	0	---
	1	RGB Limit
	2	RGB Full
	3	YcbCr444
	4	YcbCr422

data6:Input bit(HDMI only)

Data	Parameter	Signal Format
(data7)	0	---
	1	24bit (8bit*3)
	2	30bit (10bit*3)
	3	36bit (12bit*3)
	4	48bit (16bit*3)

data7:Input extend color space(HDMI only)

Data	Parameter	Signal Format
(data7)	0	---
	1	Standard
	2	xvYCC601
	3	xvYCC709
	4	sYCC
	5	AdobeYCC601
	6	AdobeRGB

data8~9:Output Resolution

Data	Parameter	Signal Format
(data8)(data9)	00	---
	01	480/60i
	02	576/50i
	03	480/60p
	04	576/50p
	05	720/60p
	06	720/50p
	07	1080/60i
	08	1080/50i
	09	1080/60p
	10	1080/50p
	11	1080/24p

data10:Output aspect

Data	Parameter	Signal Format
(data10)	0	---
	1	4:3
	2	16:9
	3	14:9

data11:Output color format(HDMI only)

Data	Parameter	Signal Format
(data11)	0	---
	1	RGB Limit
	2	RGB Full
	3	YcbCr444
	4	YcbCr422

data12:Output bit(HDMI only)

Data	Parameter	Signal Format
(data12)	0	---
	1	24bit (8bit*3)
	2	30bit (10bit*3)
	3	36bit (12bit*3)
	4	48bit (16bit*3)

data13:Output extend color space(HDMI only)

Data	Parameter	Signal Format
(data13)	0	---
	1	Standard
	2	xvYCC601
	3	xvYCC709
	4	sYCC
	5	AdobeYCC601
	6	AdobeRGB

data14~15:HDMI 1 Monitor Recommend Resolution Information

Data	Parameter	Recommend Signal Format
(data14)(data15)	00	---
	01	480/60i
	02	576/50i
	03	480/60p
	04	576/50p
	05	720/60p
	06	720/50p
	07	1080/60i
	08	1080/50i
	09	1080/60p
	10	1080/50p
	11	1080/24p

data16:HDMI 1 Monitor DeepColor

Data	Parameter	Signal Format
(data16)	0	---
	1	24bit (8bit*3)
	2	30bit (10bit*3)
	3	36bit (12bit*3)
	4	48bit (16bit*3)

data17~21:HDMI 1 Monitor Extend Color Space

Data	Parameter	Correspondence Format
(data17)	0 or 1	xvYCC601
(data18)	0 or 1	xvYCC709
(data19)	0 or 1	sYCC
(data20)	0 or 1	AdobeYCC601
(data21)	0 or 1	AdobeRGB

data22~23:HDMI 2 Monitor Recommend Resolution Information

Data	Parameter	Signal Format
(data22)(data23)	00	---
	01	480/60i
	02	576/50i
	03	480/60p
	04	576/50p
	05	720/60p
	06	720/50p
	07	1080/60i
	08	1080/50i
	09	1080/60p
	10	1080/50p
	11	1080/24p

data24:HDMI 2 Monitor DeepColor

Data	Parameter	Signal Format
(data24)	0	---
	1	24bit (8bit*3)
	2	30bit (10bit*3)
	3	36bit (12bit*3)
	4	48bit (16bit*3)

data25~29:HDMI 2 Monitor Extend Color Space

Data	Parameter	Correspondence Format
(data25)	0 or 1	xvYCC601
(data26)	0 or 1	xvYCC709
(data27)	0 or 1	sYCC
(data28)	0 or 1	AdobeYCC601
(data29)	0 or 1	AdobeRGB



About Request FL display information

?FL<CR> (Only RS232C is guaranteed.)

FL(data1)(data2).....(data29)(data30)<CR+LF>

ex) When " () (DIGITAL EX " is displayed, a response command are,
FL000005064449474954414C00455800<CR+LF>

Data	Parameter
(data1)(data2)	The value that made FL action information ASCII Code.
	bit7(MSB) Reserved
	bit6 Reserved
	bit5 Reserved
	bit4 Reserved
	bit3 Reserved
	bit2 Reserved
	bit1 Information of VOLUME display 1:light, 0:OFF
	bit0(LSB) Information of Guid icon 1:light, 0:OFF
(data3)(data4)	The 1st character data of FL (left side) .
(data5)(data6)	The 2nd character data of FL.
(data7)(data8)	The 3rd character data of FL.
(data9)(data10)	The 4th character data of FL.
(data11)(data12)	The 5th character data of FL.
(data13)(data14)	The 6th character data of FL.
(data15)(data16)	The 7th character data of FL.
(data17)(data18)	The 8th character data of FL.
(data19)(data20)	The 9th character data of FL.
(data21)(data22)	The 10th character data of FL.
(data23)(data24)	The 11th character data of FL.
(data25)(data26)	The 12th character data of FL.
(data27)(data28)	The 13th character data of FL.
(data29)(data30)	The 14th character data of FL(right side).

About Request Input Name information

?RGB**<CR>

ex) AT the case of DVD input name is renamed "PIONEER GT",




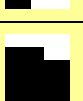

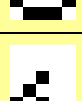
?RGB04<CR>

RGB041PIONEER GT<CR+LF>

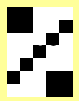



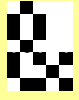

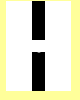

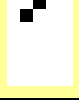


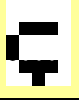
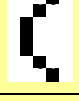








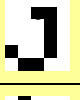






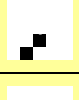
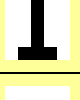
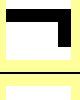
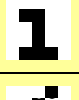



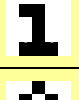
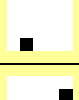

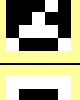
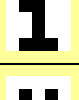

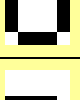

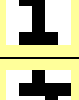




Input	Command	Response
DVD	? R G B 0 4 <CR>	R G B 0 4 * (Rename data MAX14 character) <CR+LF>
BD	? R G B 2 5 <CR>	R G B 2 5 * (Rename data MAX14 character) <CR+LF>
TV/ SAT	? R G B 0 5 <CR>	R G B 0 5 * (Rename data MAX14 character) <CR+LF>
DVR/ BDR	? R G B 1 5 <CR>	R G B 1 5 * (Rename data MAX14 character) <CR+LF>
VIDEO 1(VIDEO)	? R G B 1 0 <CR>	R G B 1 0 * (Rename data MAX14 character) <CR+LF>
VIDEO 2	? R G B 1 4 <CR>	R G B 1 4 * (Rename data MAX14 character) <CR+LF>
HDMI 1	? R G B 1 9 <CR>	R G B 1 9 * (Rename data MAX14 character) <CR+LF>
HDMI 2	? R G B 2 0 <CR>	R G B 2 0 * (Rename data MAX14 character) <CR+LF>
HDMI 3	? R G B 2 1 <CR>	R G B 2 1 * (Rename data MAX14 character) <CR+LF>
HDMI 4	? R G B 2 2 <CR>	R G B 2 2 * (Rename data MAX14 character) <CR+LF>
HDMI 5	? R G B 2 3 <CR>	R G B 2 3 * (Rename data MAX14 character) <CR+LF>
HOME MEDIA GALLERY(Internet Rad	? R G B 2 6 <CR>	R G B 2 6 * (Rename data MAX14 character) <CR+LF>
iPod/USB	? R G B 1 7 <CR>	R G B 1 7 * (Rename data MAX14 character) <CR+LF>
XM RADIO	? R G B 1 8 <CR>	R G B 1 8 * (Rename data MAX14 character) <CR+LF>
CD	? R G B 0 1 <CR>	R G B 0 1 * (Rename data MAX14 character) <CR+LF>
CD- R/ TAPE	? R G B 0 3 <CR>	R G B 0 3 * (Rename data MAX14 character) <CR+LF>
TUNER	? R G B 0 2 <CR>	R G B 0 2 * (Rename data MAX14 character) <CR+LF>
PHONO	? R G B 0 0 <CR>	R G B 0 0 * (Rename data MAX14 character) <CR+LF>
MULTI CH IN	? R G B 1 2 <CR>	R G B 1 2 * (Rename data MAX14 character) <CR+LF>
ADAPTER PORT	? R G B 3 3 <CR>	R G B 3 3 * (Rename data MAX14 character) <CR+LF>
SIRIUS	? R G B 2 7 <CR>	R G B 2 7 * (Rename data MAX14 character) <CR+LF>

↓
0 : Default name, 1:Rename


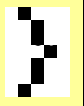
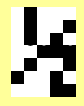

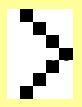
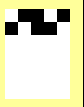
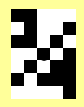

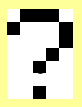
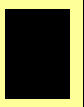
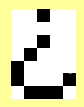

No.	Data Code	5x7 FL Font	Character	No.	Data Code	5x7 FL Font	Character	No.	Data Code	5x7 FL Font	Character	No.	Data Code	5x7 FL Font	Character
0	0x00			64	0x40	@	@	128	0x80	Œ	Œ	192	0xC0	À	À
1	0x01	↺↻	↺↻	65	0x41	A	A	129	0x81	œ	œ	193	0xC1	Á	Á
2	0x02	↻↺	↻↺	66	0x42	B	B	130	0x82	Ŭ	Ŭ	194	0xC2	Â	Â
3	0x03	↻↺	↻↺	67	0x43	C	C	131	0x83	ÿ	ÿ	195	0xC3	Ã	Ã
4	0x04	⬆⬇⬆	⬆⬇⬆	68	0x44	D	D	132	0x84	π	π	196	0xC4	Ä	Ä
5	0x05	D	D	69	0x45	E	E	133	0x85	±	±	197	0xC5	Å	Å
6	0x06	D	D	70	0x46	F	F	134	0x86			198	0xC6	Æ	Æ
7	0x07	I	I	71	0x47	G	G	135	0x87			199	0xC7	Ç	Ç
8	0x08	II	II	72	0x48	H	H	136	0x88			200	0xC8	È	È
9	0x09	◀	◀	73	0x49	I	I	137	0x89			201	0xC9	É	É
10	0x0A	▶	▶	74	0x4A	J	J	138	0x8A			202	0xCA	Ê	Ê
11	0x0B	♥	♥	75	0x4B	K	K	139	0x8B			203	0xCB	Ë	Ë
12	0x0C	.	.	76	0x4C	L	L	140	0x8C	←	←	204	0xCC	Ì	Ì

13	0x0D		.0	77	0x4D		M	141	0x8D		↑	205	0xCD		í
14	0x0E		.5	78	0x4E		N	142	0x8E		→	206	0xCE		î
15	0x0F		Ω	79	0x4F		O	143	0x8F		↓	207	0xCF		ï
16	0x10		0	80	0x50		P	144	0x90		+	208	0xD0		ð
17	0x11		1	81	0x51		Q	145	0x91		♪	209	0xD1		ñ
18	0x12		2	82	0x52		R	146	0x92			210	0xD2		ò
19	0x13		3	83	0x53		S	147	0x93			211	0xD3		ó
20	0x14		4	84	0x54		T	148	0x94			212	0xD4		ô
21	0x15		5	85	0x55		U	149	0x95			213	0xD5		õ
22	0x16		6	86	0x56		V	150	0x96			214	0xD6		ö
23	0x17		7	87	0x57		W	151	0x97			215	0xD7		×
24	0x18		8	88	0x58		X	152	0x98			216	0xD8		ø

25	0x19		g	89	0x59		Y	153	0x99			217	0xD9		Ù
26	0x1A		A	90	0x5A		Z	154	0x9A			218	0xDA		Ú
27	0x1B		B	91	0x5B		[	155	0x9B			219	0xDB		Û
28	0x1C		C	92	0x5C		\	156	0x9C			220	0xDC		Ü
29	0x1D		F	93	0x5D		]	157	0x9D			221	0xDD		Ý
30	0x1E		M	94	0x5E		^	158	0x9E			222	0xDE		Þ
31	0x1F		_	95	0x5F		—	159	0x9F			223	0xDF		ß
32	0x20			96	0x60		||	160	0xA0			224	0xE0		à
33	0x21		!	97	0x61		a	161	0xA1		ï	225	0xE1		á
34	0x22		"	98	0x62		b	162	0xA2		ç	226	0xE2		â
35	0x23		#	99	0x63		c	163	0xA3		£	227	0xE3		ã
36	0x24		\$	100	0x64		d	164	0xA4		æ	228	0xE4		ä

37	0x25		%	101	0x65		e	165	0xA5		¥	229	0xE5		å
38	0x26		&	102	0x66		f	166	0xA6		!	230	0xE6		æ
39	0x27		'	103	0x67		g	167	0xA7		§	231	0xE7		ç
40	0x28		(	104	0x68		h	168	0xA8		"	232	0xE8		è
41	0x29		)	105	0x69		i	169	0xA9		©	233	0xE9		é
42	0x2A		*	106	0x6A		j	170	0xAA		a	234	0xEA		ê
43	0x2B		+	107	0x6B		k	171	0xAB		«	235	0xEB		ë
44	0x2C		,	108	0x6C		l	172	0xAC		<	236	0xEC		ì
45	0x2D		-	109	0x6D		m	173	0xAD		_	237	0xED		í
46	0x2E		.	110	0x6E		n	174	0xAE		®	238	0xEE		î
47	0x2F		/	111	0x6F		o	175	0xAF		—	239	0xEF		ï
48	0x30		0	112	0x70		p	176	0xB0		°	240	0xF0		ð

49	0x31	1	1	113	0x71	q	q	177	0xB1	±	±	241	0xF1	ñ
50	0x32	2	2	114	0x72	r	r	178	0xB2	²	²	242	0xF2	ò
51	0x33	3	3	115	0x73	s	s	179	0xB3	³	³	243	0xF3	ó
52	0x34	4	4	116	0x74	t	t	180	0xB4	´	´	244	0xF4	ô
53	0x35	5	5	117	0x75	u	u	181	0xB5	μ	μ	245	0xF5	õ
54	0x36	6	6	118	0x76	v	v	182	0xB6	¶	¶	246	0xF6	ö
55	0x37	7	7	119	0x77	w	w	183	0xB7	·	·	247	0xF7	÷
56	0x38	8	8	120	0x78	x	x	184	0xB8	¸	¸	248	0xF8	ø
57	0x39	9	9	121	0x79	y	y	185	0xB9	¹	¹	249	0xF9	ù
58	0x3A	:	:	122	0x7A	z	z	186	0xBA	º	º	250	0xFA	ú
59	0x3B	;	;	123	0x7B	{	{	187	0xBB	»	»	251	0xFB	û
60	0x3C	<	<	124	0x7C	|	|	188	0xBC	¼	¼	252	0xFC	ü

61	0x3D		=	125	0x7D		}	189	0xBD		1/2	253	0xFD		ý
62	0x3E		>	126	0x7E		~	190	0xBE		3/4	254	0xFE		p
63	0x3F		?	127	0x7F		■	191	0xBF		¿	255	0xFF		ÿ