

# DENON AVR control protocol

Ver.7.2.0

Application model : AVR-4311CI/AVR-4311

Application terminal: RS-232C

Ethernet

Rev 7.2.0

## Connector specification

### . RS-232C

Connector type: DB-9pin female type, slave straight connection (DCE type)

( 1pin : GND , 2pin : TxD , 3pin : RxD , 5pin : Common(GND) , 4,6,7,8,9pin : NC )

Communication format:

Synchronous system : Tone step synchronization

Communication system : A half duplex

Communication speed : 9600bps

Character length : 8 bits

Parity control : None

Start bit : 1 bit

Stop bit : 1 bit

Communication procedure : Non procedural

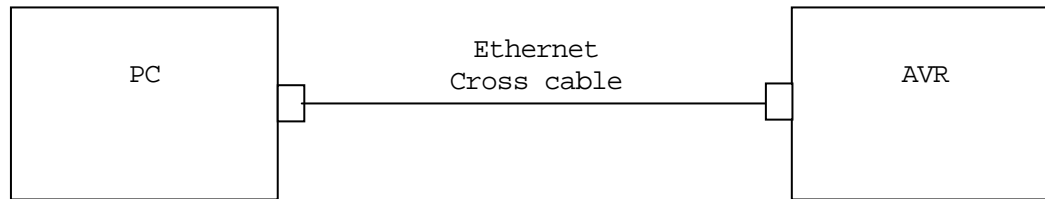
Communication data length : 135 bytes (maximum)

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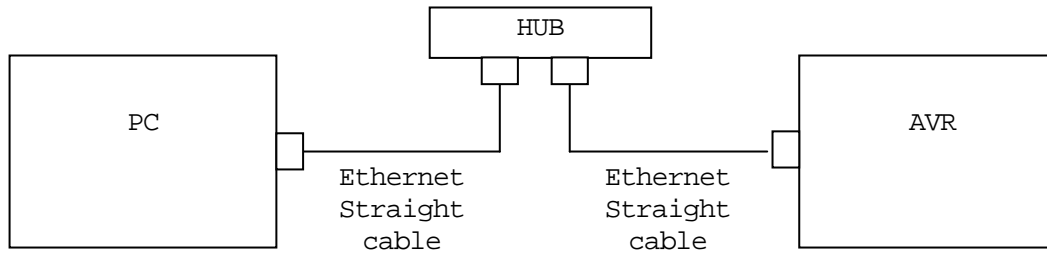
**. Ethernet**

Connector type : RJ-45(10BASE-T/100BASE-TX)

*Example*



*Example*



Communication format :

Communication system : A half duplex  
Communication speed : 10Mbps/100Mbps  
Communication port : TCP port 23 (telnet)  
Communication data length : 135bytes (maximum)

## NETWORK SETUP of AVR-4311

### **>Procedure of Network Setup mode.**

- (1) Press MENU button, then Menu appears on FL-display (and GUI)
- (2) Select "Manual Setup > Network Setup > Network Connecting > Detail" .
- (3) Set parameters described below.

<DHCP> "ON"---Use this setting when DHCP server is on the local network.  
"OFF"---Use this setting when DHCP server is not on the local network.

<IP Address> When <DHCP> sets "OFF", please set IP address.  
When <DHCP> sets "ON", you can confirm the IP address that is set by server.

<Subnet Mask> When <DHCP> sets "OFF", please set Subnet Mask.  
When <DHCP> sets "ON", you can confirm the Subnet Mask that is set by server.

<Gateway> Set the address of Gateway when Gateway is on the local network.  
Do not set this parameter when Gateway is not on the local network.

<Primary DNS> Do not set this parameter.

<Second DNS> Do not set this parameter.

<Proxy> Set this parameter "OFF".

### <Network Option: Network Standby Mode>

- (1) Press MENU button, then Menu appears on FL-display (and GUI)
- (2) Select "Manual Setup > Network Setup > Other > Network Standby"
- (3) Set parameters described below.
  - "ON"---Use this setting when using the AVR-4311 Connected in a network.
  - "OFF"--- Use this setting when not using the AVR-4311 connected in a network.  
This setting is reducing the power consumption in the standby mode.

## Protocol specification

The following three data forms are defined.

- COMMAND** : The message sent to a system(AVR) from a controller(Touch Panel etc.)  
A command to a system is given from a controller.
- EVENT** : The message sent to a controller (Touch Panel etc.) from a system (AVR)  
The result is sent, when a system is operated directly and a state changes.  
\*The form of **EVENT** presupposes that it is the same as that of **COMMAND**.  
\*\*Refer to the following table for the contents of **COMMAND** and **EVENT**.
- RESPONSE** : The message sent to a controller (Touch Panel etc.) from a system (AVR)  
if the 'request command' (**COMMAND+?+CR(0x0D)**) has come from a controller.  
The **RESPONSE** should be sent within 200ms of receiving the **COMMAND**.  
\*The form of **RESPONSE** presupposes that it is the same as that of **EVENT**.

**Basic specification:** The command by ASCII CODE, parameter expression

\*ASCII CODE which can be used is from 0x20 to 0x7F: the alphabet and the number of 0-9, and space (0x20), some signs,  
AND carriage return (0x0D) --- It is used only as a pause sign.

**Command structure:** COMMAND + PARAMETER + CR (0x0D)

COMMAND: ASCII CODE of 2 characters

Ex.           SI : Select Input source  
              MS : surround Mode Setting  
              MV : Master Volume setting  
              PW : system PoWer setting

PARAMETER : ASCII CODE ( up to 25 characters)

ex.           DVD : function name

              SUPER STADIUM : surround mode name

\*Special Parameter--- ? : for request command

**The example of a command** \* <CR> is the meaning of 0x0D.

SIDVD<CR> : Select Input source DVD

MSSTEREO<CR> : surround Mode Set to STEREO

MVUP<CR> : Master Volume UP

PWON<CR> : system PoWer ON

PWSTANDBY<CR> : system PoWer STANDBY

SI?<CR> : Request command for now playing input source >> Return **RESPONSE** 'SI\*\*\*<CR>'

## Others

- A) **COMMAND** is receivable also during transmission of **EVENT**.
- B) Since CHANNEL VOLUME changes simultaneously when the SURROUND MODE changes, the value of the channel volume of all channels returns as **EVENT**.
- C) CHANNEL VOLUME returns the data of ALL channels by the present SURROUND MODE also including an intact channel. In this case, the data of an intact channel is set to "50".
- D) Since SURROUND MODE changes simultaneously when the INPUT source changes, the SURROUND MODE (and also the value of the channel volume of all channels , It described in B) ) returns as **EVENT**.
- E) When SURROUND MODE is the same in between INPUT source change before and after, **EVENT** of SURROUND MODE and CHANNEL VOLUME does NOT return.
- F) Although **EVENT** of SURROUND MODE returns when the present SURROUND MODE is set up again, CHANNEL VOLUME does NOT return.
- G) When SURROUND MODE is changed, before returning SURROUND MODE after change as **EVENT**, the present SURROUND MODE is returned.
- H) The **RESPONSE** should be sent as opposed to the request command by all the commands with which an **EVENT** exists , not need to the another request commands(ex. SV command).
- I) The **PARAMETER** (with **COMMAND** and **RESPONSE, EVENT**) of minimum level of MASTER VOLUME defines "99".
- J) If the MASTER VOLUME & CHANNEL VOLUME set with 0.5dB step, the **PARAMETER** (with **COMMAND** and **RESPONSE, EVENT**) defines three ASCII characters as bellows.

```
Ex.  MASTER VOLUME = +1.0dB :   MV81<CR>
                        +0.5dB :   MV805<CR>
                        0dB :       MV80<CR>
                        -0.5dB :    MV795<CR>
                        -1.0dB :    MV79<CR>
                        |           |
                        -79.5dB :    MV005<CR>
                        -80.0dB :    MV00<CR>
                        -80.5dB :    MV995<CR>
                        --- :       MV99<CR>
```

\* At the \*\*.0dB step, only uses two ASCII characters as **PARAMETER**, same as usual.

- K) 1 seconds later, please transmit the next **COMMAND** after transmitting a power on **COMMAND (PWON)**.

## COMMAND and PARAMETER list

COMMAND	PARAMETER	Function	example
PW	ON	POWER ON/STANDBY change	PWON<CR>
	STANDBY		PWSTANDBY<CR>
	?	Return PW Status	PW?<CR>
MV	UP	MASTER VOLUME UP/DOWN , direct change to **dB	MVUP<CR>
	DOWN		MVDOWN<CR>
	**	** : 00 to 99 by ASCII , 80=0dB, 99=---(MIN) <b>995=-80.5dB</b>	MV80<CR>
	?	Return MV Status	MV?<CR>
CV	FL UP	CHANNEL VOLUME UP/DOWN , direct change to **dB	CVFL UP<CR>
	FL DOWN	---FRONT L ch	CVFL DOWN<CR>
	FL **	** : 38 to 62 by ASCII , 50=0dB	CVFL 50<CR>
	FR UP		CVFR UP<CR>
	FR DOWN	---FRONT R ch	CVFR DOWN<CR>
	FR **	** : 38 to 62 by ASCII , 50=0dB	CVFR 50<CR>
	C UP		CVC UP<CR>
	C DOWN	---CENTER ch	CVC DOWN<CR>
	C **	** : 38 to 62 by ASCII , 50=0dB	CVC 50<CR>
	SW UP		CVSW UP<CR>
	SW DOWN	---SUBWOOFER(1) ch	CVSW DOWN<CR>
	SW **	** : 38 to 62 by ASCII , 50=0dB, 00=OFF	CVSW 50<CR>
	<b>SW2 UP</b>		<b>CVSW2 UP&lt;CR&gt;</b>
	<b>SW2 DOWN</b>	---SUBWOOFER(2) ch	<b>CVSW2 DOWN&lt;CR&gt;</b>
	<b>SW2 **</b>	** : 38 to 62 by ASCII , 50=0dB, 00=OFF	<b>CVSW2 50&lt;CR&gt;</b>
	SL UP		CVSL UP<CR>
	SL DOWN	---SURROUND L ch	CVSL DOWN<CR>
	SL **	** : 38 to 62 by ASCII , 50=0dB	CVSL 50<CR>
	SR UP		CVSR UP<CR>
	SR DOWN	---SURROUND R ch	CVSR DOWN<CR>
	SR **	** : 38 to 62 by ASCII , 50=0dB	CVSR 50<CR>
	SBL UP	---SURROUND BACK L ch (SB ch 2SP)	CVSBL UP<CR>
	SBL DOWN		CVSBL DOWN<CR>
	SBL **	** : 38 to 62 by ASCII , 50=0dB	CVSBL 50<CR>

MV, CV **COMMAND** : "\*" parameter uses two or three ASCII characters. (see page6 J) section)

COMMAND	PARAMETER	function	example
CV	SBR UP	---SURROUND BACK R ch (SB ch 2SP)	CVSBR UP<CR>
	SBR DOWN		CVSBR DOWN<CR>
	SBR **	** :38 to 62 by ASCII , 50=0dB	CVSBR 50<CR>
	SB UP	---SURROUND BACK ch (SB ch 1SP)	CVSB UP<CR>
	SB DOWN		CVSB DOWN<CR>
	SB **	** :38 to 62 by ASCII , 50=0dB	CVSB 50<CR>
	FHL UP		CVFHL UP<CR>
	FHL DOWN	---FRONT HEIGHT L ch	CVFHL DOWN<CR>
	FHL **	** :38 to 62 by ASCII , 50=0dB	CVFHL 50<CR>
	FHR UP		CVFHR UP<CR>
	FHR DOWN	---FRONT HEIGHT R ch	CVFHR DOWN<CR>
	FHR **	** :38 to 62 by ASCII , 50=0dB	CVFHR 50<CR>
	FWL UP		CVFWL UP<CR>
	FWL DOWN	---FRONT WIDE L ch	CVFWL DOWN<CR>
	FWL **	** :38 to 62 by ASCII , 50=0dB	CVFWL 50<CR>
	FWR UP		CVFWR UP<CR>
	FWR DOWN	---FRONT WIDE R ch	CVFWR DOWN<CR>
	FWR **	** :38 to 62 by ASCII , 50=0dB	CVFWR 50<CR>
	?	Return CV Status	CV?<CR>
MU	ON	OUTPUT MUTE ON/OFF change	MUON<CR>
	OFF		MUOFF<CR>
	?	Return MU Status	MU?<CR>
SI	PHONO	Select INPUT source	SIPHONO<CR>
	CD		SICD<CR>
	TUNER	(Except AVR-4311CI model)	SITUNER<CR>
	DVD		SIDVD<CR>
	<b>BD</b>		<b>SIBD&lt;CR&gt;</b>
	TV		SITV<CR>
	SAT/CBL		SISAT/CBL<CR>
	DVR		SIDVR<CR>
	<b>GAME</b>		<b>SIGAME&lt;CR&gt;</b>
	V.AUX		SIV.AUX<CR>
	<b>DOCK</b>		<b>SIDOCK&lt;CR&gt;</b>

CV **COMMAND** : "\*" parameter uses two or three ASCII characters. (see page 6 J) section)



<b>COMMAND</b>	<b>PARAMETER</b>	<b>function</b>	<b>example</b>
SI	SIRIUS	(North America model Only)	SISIRIUS<CR>
	HDRADIO	(AVR-4311CI model Only)	SIHDRADIO<CR>
	IPOD	Select iPod (dock or USB) and PLAY	SIIPOD<CR>
	NET/USB		SINET/USB<CR>
	RHAPSODY	(North America model Only)	SIRHAPSODY<CR>
	NAPSTER	(North America & Europe model Only)	SINAPSTER<CR>
	<b>PANDORA</b>	(North America model Only)	<b>SIPANDORA&lt;CR&gt;</b>
	<b>LASTFM</b>	(Europe model Only)	<b>SILASTFM&lt;CR&gt;</b>
	<b>FLICKR</b>		<b>SIFLICKR&lt;CR&gt;</b>
	FAVORITES		SIFAVORITES<CR>
	IRADIO		SIIRADIO<CR>
	SERVER		SISERVER<CR>
	USB/IPOD	Select USB or iPod Direct	SIUSB/IPOD<CR>
	?	Return SI Status	SI?<CR>
ZM	ON	MAIN ZONE ON/OFF change	ZMON<CR>
	OFF		ZMOFF<CR>
	?	Return ZM Status	ZM?<CR>
SR	PHONO	REC SELECT mode set , and select source	SRPHONO<CR>
	 USB/IPOD	---The name of PARAMETER is the same as that of the time of SI COMMAND.	 SRUSB/IPOD<CR>
	SOURCE	REC SELECT mode cancel	SRSOURCE<CR>
	?	Return SR Status	SR?<CR>

<b>COMMAND</b>	<b>PARAMETER</b>	function	example
SD	AUTO	Set AUTO mode (Priority:HDMI>>DIGITAL>>ANALOG)	SDAUTO<CR>
	HDMI	Set force HDMI INPUT mode	SDHDMI<CR>
	DIGITAL	Set force DIGITAL INPUT (Optical,Coaxial)mode	SDDIGITAL<CR>
	ANALOG	Set force ANALOG INPUT mode	SDANALOG<CR>
	EXT.IN	Set EXT.IN mode	SDEXT.IN<CR>
	NO	---When no input	SDNO<CR>
	?	Return SD Status	SD?<CR>
DC	AUTO	Set DIGITAL INPUT AUTO mode	DCAUTO<CR>
	PCM	Set DIGITAL INPUT force PCM mode	DCPCM<CR>
	DTS	Set DIGITAL INPUT force DTS mode	DCDTS<CR>
	?	Return DC Status	DC?<CR>
SV	DVD	VIDEO SELECT mode set , and select source	SVDVD<CR>
	<b>BD</b>		<b>SVBD&lt;CR&gt;</b>
	TV		SVTV<CR>
	SAT/CBL		SVSAT/CBL<CR>
	DVR		SVDVR<CR>
	<b>GAME</b>		<b>SVGAME&lt;CR&gt;</b>
	V.AUX		SVV.AUX<CR>
	<b>DOCK</b>		<b>SVDOCK&lt;CR&gt;</b>
	SOURCE		VIDEO SELECT mode cancel
	?	Return SV Status	SV?<CR>
SLP	<b>OFF</b>	MAIN ZONE SLEEP TIMER setting	<b>SLPOFF&lt;CR&gt;</b>
	<b>***</b>	***:001 to 120 by ASCII , 010=10min	<b>SLP120&lt;CR&gt;</b>
	?	Return SLP Status	<b>SLP?&lt;CR&gt;</b>

<i>COMMAND</i>	<i>PARAMETER</i>	function	example	
MS	DIRECT	Select SURROUND mode	MSDIRECT<CR>	
	PURE DIRECT		MSPURE DIRECT<CR>	
	STEREO		MSSTEREO<CR>	
	STANDARD		MSSTANDARD<CR>	
	DOLBY DIGITAL		MSDOLBY DIGITAL<CR>	
	DTS SUROUND		MSDTS SURROUND<CR>	
	<b>MCH STEREO</b>		---5/7/9/11CH STEREO mode	<b>MSMCH STEREO&lt;CR&gt;</b>
	WIDE SCREEN			MSWIDE SCREEN<CR>
	SUPER STADIUM			MSSUPER STADIUM<CR>
	ROCK ARENA			MSROCK ARENA<CR>
	JAZZ CLUB			MSJAZZ CLUB<CR>
	CLASSIC CONCERT			MSCCLASSIC CONCERT<CR>
	MONO MOVIE			MSMONO MOVIE<CR>
	MATRIX			MSMATRIX<CR>
	VIDEO GAME			MSVIDEO GAME<CR>
	VIRTUAL			MSVIRTUAL<CR>
	?		Return MS Status	MS?<CR>
	QUICK1	QUICK SELECT 1-5 MODE SELECT	MSQUICK1<CR>	
	QUICK2		MSQUICK2<CR>	
	QUICK3		MSQUICK3<CR>	
	QUICK4		MSQUICK4<CR>	
	QUICK5		MSQUICK5<CR>	
	QUICK1 MEMORY	QUICK SELECT 1-5 MODE MEMORY	MSQUICK1 MEMORY<CR>	
	QUICK2 MEMORY		MSQUICK2 MEMORY<CR>	
	QUICK3 MEMORY		MSQUICK3 MEMORY<CR>	
	QUICK4 MEMORY		MSQUICK4 MEMORY<CR>	
	QUICK5 MEMORY		MSQUICK5 MEMORY<CR>	
QUICK ?	Return MSQUICK Status	MSQUICK ?<CR>		

<b>COMMAND</b>	<b>PARAMETER</b>	<b>function</b>	<b>example</b>
VS	MONIAUTO	Set HDMI MONITOR automatic detection	VSMONIAUTO<CR>
	MONI1	Set HDMI MONITOR OUT-1	VSMONI1<CR>
	MONI2	Set HDMI MONITOR OUT-2	VSMONI2<CR>
	MONI ?	Return VSMONI Status	VSMONI ?<CR>
	ASPNRM	Set Normal mode	VSASPNRM<CR>
	ASPFUL	Set FULL mode	VSASPFUL<CR>
	ASP ?	Return VSASP Status	VSASP ?<CR>
	SC48P	Set Resolution to 480p/576p	VSSC48P<CR>
	SC10I	Set Resolution to 1080i	VSSC10I<CR>
	SC72P	Set Resolution to 720p	VSSC72P<CR>
	SC10P	Set Resolution to 1080p	VSSC10P<CR>
	SC10P24	Set Resolution to 1080p:24Hz	VSSC10P24<CR>
	SCAUTO	Set Resolution to AUTO	VSSCAUTO<CR>
	SC ?	Return VSSC Status	VSSC ?<CR>
	SCH48P	Set Resolution to 480p/576p (HDMI)	VSSC48P<CR>
	SCH10I	Set Resolution to 1080i(HDMI)	VSSC10I<CR>
	SCH72P	Set Resolution to 720p(HDMI)	VSSC72P<CR>
	SCH10P	Set Resolution to 1080p(HDMI)	VSSC10P<CR>
	SCH10P24	Set Resolution to 1080p:24Hz(HDMI)	VSSC10P24<CR>
	SCHAUTO	Set Resolution to AUTO(HDMI)	VSSCAUTO<CR>
	SCH ?	Return VSSCH Status(HDMI)	VSSCH ?<CR>
	AUDIO AMP	Set HDMI AUDIO Output to AMP	VSAUDIO AMP<CR>
	AUDIO TV	Set HDMI AUDIO Output to TV	VSAUDIO TV<CR>
	AUDIO ?	Return VSAUDIO Status	VSAUDIO ?<CR>
	<b>VPMAUTO</b>	Set Video Processing Mode to AUTO	<b>VSVPMAUTO&lt;CR&gt;</b>
	<b>VPMGAME</b>	Set Video Processing Mode to GAME	<b>VSVPMGAME&lt;CR&gt;</b>
	<b>VPMMOVI</b>	Set Video Processing Mode to MOVIE	<b>VSVPMMOVI&lt;CR&gt;</b>
	<b>VPM ?</b>	Return VSVPM Status	<b>VSVPM ?&lt;CR&gt;</b>
	VST ON	Set VERTICAL STRETCH to ON	VSVST ON<CR>
	VST OFF	Set VERTICAL STRETCH to OFF	VSVST OFF<CR>
	VST ?	Return VSVST Status	VSVST ?<CR>

COMMAND	PARAMETER	function	example	
PS	TONE CTRL OFF	PARAMETER setting	PSTONE CTRL OFF<CR>	
	TONE CTRL ON	TONE CONTROL ON/OFF	PSTONE CTRL OFF<CR>	
	TONE CTRL ?	Return PSTONE CONTROL Status	PSTONE CTRL ?<CR>	
	SB:MTRX ON	SURROUND BACK SP MODE set	PSSB:MTRX ON<CR>	
	SB:PL2X CINEMA		PSSB:PL2X CINEMA<CR>	
	SB:PL2X MUSIC		PSSB:PL2X MUSIC<CR>	
	SB:ON		PSSB:ON<CR>	
	SB:OFF		PSSB:OFF<CR>	
	SB: ?		Return PSSB: Status	PSSB: ?<CR>
	CINEMA EQ.ON		CINEMA EQ. ON/OFF	PSCINEMA EQ.ON<CR>
	CINEMA EQ.OFF	PSCINEMA EQ.OFF<CR>		
	CINEMA EQ. ?	Return PSCINEMA EQ.Status		PSCINEMA EQ. ?<CR>
	MODE:MUSIC	CINEMA / MUSIC / GAME / PL mode change (This parameter can change DOLBY PL2,PL2x,NEO:6 mode.) ---SB=ON:PL2x mode / SB=OFF:PL2 mode --- GAME can change DOLBY PL2 & PL2x mode --- PL can change ONLY DOLBY PL2 mode	PSMODE:MUSIC<CR>	
	MODE:CINEMA		PSMODE:CINEMA<CR>	
	MODE:GAME		PSMODE:GAME<CR>	
	MODE:PRO LOGIC		PSMODE:PRO LOGIC<CR>	
	MODE: ?	Return PSMODE: Status	PSMODE: ?<CR>	
	DOLVOL ON	Dolby Volume direct change	PSDOLVOL ON<CR>	
	DOLVOL OFF		PSDOLVOL OFF<CR>	
	DOLVOL ?	Return PSDOLVOL Status	PSDOLVOL ?<CR>	
	VOLLEV LOW	Dolby Volume Leveler direct change	PSVOLLEV LOW<CR>	
	VOLLEV MID		PSVOLLEV MID<CR>	
	VOLLEV HI		PSVOLLEV HI<CR>	
	VOLLEV ?		Return PSVOLLEV Status	PSVOLLEV ?<CR>
	VOLMOD HLF	Dolby Volume Modeler direct change	PSVOLMOD HLF<CR>	
	VOLMOD FUL		PSVOLMOD FUL<CR>	
	VOLMOD OFF		PSVOLMOD OFF<CR>	
	VOLMOD ?		Return PSVOLMOD Status	PSVOLMOD ?<CR>
	FH:ON	FRONT HEIGHT ON/OFF	PSFH:ON<CR>	
	FH:OFF		PSFH:OFF<CR>	
FH: ?	Return PSFH: Status		PSFH: ?<CR>	

<b>COMMAND</b>	<b>PARAMETER</b>	<b>function</b>	<b>example</b>
PS	<b>PHG LOW</b>	PL z HEIGHT GAIN direct change	<b>PSPHG LOW&lt;CR&gt;</b>
	<b>PHG MID</b>		<b>PSPHG MID&lt;CR&gt;</b>
	<b>PHG HI</b>		<b>PSPHG HI&lt;CR&gt;</b>
	<b>PHG ?</b>	Return PSPHG Status	<b>PSPHG ?&lt;CR&gt;</b>
	<b>SP:FH</b>	Speaker Output set(F.Height/F.Wide)	<b>PSSP:FH&lt;CR&gt;</b>
	<b>SP:FW</b>		<b>PSSP:FW&lt;CR&gt;</b>
	<b>SP:HW</b>		<b>PSSP:HW&lt;CR&gt;</b>
	<b>SP:OFF</b>		<b>PSSP:OFF&lt;CR&gt;</b>
	<b>SP: ?</b>	Return PSSP: Status	<b>PSSP: ?&lt;CR&gt;</b>
	<b>MULTEQ:AUDYSSEY</b>	MulteQ XT 32 mode direct change	<b>PSMULTEQ:AUDYSSEY&lt;CR&gt;</b>
	<b>MULTEQ:BYP.LR</b>		<b>PSMULTEQ:BYP.LR&lt;CR&gt;</b>
	<b>MULTEQ:FLAT</b>		<b>PSMULTEQ:FLAT&lt;CR&gt;</b>
	<b>MULTEQ:MANUAL</b>		<b>PSMULTEQ:MANUAL&lt;CR&gt;</b>
	<b>MULTEQ:OFF</b>		<b>PSMULTEQ:OFF&lt;CR&gt;</b>
	<b>MULTEQ: ?</b>	Return PSMULTEQ: Status	<b>PSMULTEQ: ?&lt;CR&gt;</b>
	<b>DYNEQ ON</b>	Dynamic EQ = ON	<b>PSDYNEQ ON&lt;CR&gt;</b>
	<b>DYNEQ OFF</b>	Dynamic EQ = OFF	<b>PSDYNEQ OFF&lt;CR&gt;</b>
	<b>DYNEQ ?</b>	Return PSDYNEQ Status	<b>PSDYNEQ ?&lt;CR&gt;</b>
	<b>REFLEV 0</b>	Reference Level Offset=0dB	<b>PSREFLEV 0&lt;CR&gt;</b>
	<b>REFLEV 5</b>	Reference Level Offset=5dB	<b>PSREFLEV 5&lt;CR&gt;</b>
	<b>REFLEV 10</b>	Reference Level Offset=10dB	<b>PSREFLEV 10&lt;CR&gt;</b>
	<b>REFLEV 15</b>	Reference Level Offset=15dB	<b>PSREFLEV 15&lt;CR&gt;</b>
	<b>REFREV ?</b>	Return PSREFLEV Status	<b>PSREFLEV ?&lt;CR&gt;</b>
	<b>DYNVOL NGT</b>	Dynamic Volume = Midnight	<b>PSDYNVOL NGT&lt;CR&gt;</b>
	<b>DYNVOL EVE</b>	Dynamic Volume = Evening	<b>PSDYNVOL EVE&lt;CR&gt;</b>
	<b>DYNVOL DAY</b>	Dynamic Volume = Day	<b>PSDYNVOL DAY&lt;CR&gt;</b>
	<b>DYNVOL ?</b>	Return PSDYNVOL Status	<b>PSDYNVOL ?&lt;CR&gt;</b>
	<b>DSX ONHW</b>	Audyssey DSX ON(Height/Wide)	<b>PSDSX ONHW&lt;CR&gt;</b>
	<b>DSX ONH</b>	Audyssey DSX ON(Height)	<b>PSDSX ONH&lt;CR&gt;</b>
	<b>DSX ONW</b>	Audyssey DSX ON(Wide)	<b>PSDSX ONW&lt;CR&gt;</b>
	<b>DSX OFF</b>	Audyssey DSX OFF	<b>PSDSX OFF&lt;CR&gt;</b>
<b>DSX ?</b>	Return PSDSX Status	<b>PSDSX ?&lt;CR&gt;</b>	

COMMAND	PARAMETER	function	example
PS	STW UP	STAGE WIDTH UP/DOWN , direct change to **	PSSTW UP<CR>
	STW DOWN	** :40 to 60 by ASCII , 50=0dB	PSSTW DOWN<CR>
	STW **	---AVR-4311 can be operated from -10 to +10	PSSTW 50<CR>
	STW ?	Return PSSTW Status	PSSTW ?<CR>
	STH UP	STAGE HEIGHT UP/DOWN , direct change to **	PSSTH UP<CR>
	STH DOWN	** :40 to 60 by ASCII , 50=0dB	PSSTH DOWN<CR>
	STH **	---AVR-4311 can be operated from -10 to +10	PSSTH 50<CR>
	STH ?	Return PSSTH Status	PSSTH ?<CR>
	BAS UP	BASS UP/DOWN , direct change to **	PSBAS UP<CR>
	BAS DOWN	** :44 to 56 by ASCII , 50=0dB	PSBAS DOWN<CR>
	BAS **	---AVR-4311 can be operated from -6 to +6	PSBAS 50<CR>
	BAS ?	Return PSBAS Status	PSBAS ?<CR>
	TRE UP	TREBLE UP/DOWN , direct change to **	PSTRE UP<CR>
	TRE DOWN	** :44 to 56 by ASCII , 50=0dB	PSTRE DOWN<CR>
	TRE **	---AVR-4311 can be operated from -6 to +6	PSTRE 50<CR>
	TRE ?	Return PSTRE Status	PSTRE ?<CR>
	DRC AUTO	DRC direct change	PSDRC AUTO<CR>
	DRC LOW		PSDRC LOW<CR>
	DRC MID		PSDRC MID<CR>
	DRC HI		PSDRC HI<CR>
	DRC OFF		PSDRC OFF<CR>
	DRC ?		Return PSDRC Status
	DCO OFF	D.COMP direct change	PSDCO OFF<CR>
	DCO LOW		PSDCO LOW<CR>
	DCO MID		PSDCO MID<CR>
	DCO HIGH		PSDCO HIGH<CR>
	DCO ?	Return PSDCO Status	PSDCO ?<CR>
	LFE UP	LFE UP/DOWN , direct change to **	PSLFE UP<CR>
	LFE DOWN	** :00 to 10 by ASCII , 00=0dB, 10=-10dB	PSLFE DOWN<CR>
	LFE **	---AVR-4311 can be operated from 0 to -10	PSLFE 10<CR>
	LFE ?	Return PSLFE Status	PSLFE ? <CR>

PS **COMMAND** : "\*" parameter uses two or three ASCII characters. (see page6 J) section)

COMMAND	PARAMETER	function	example
PS	EFF ON	EFFECT ON/OFF direct change	PSEFF ON<CR>
	EFF OFF		PSEFF OFF<CR>
	EFF UP	EFFECT UP/DOWN , EFFECT LEVEL direct change to ** ** : 00 to 15 by ASCII , 00=0dB, 10=10dB --AVR-4311 can be operated from 1 to 15	PSEFF UP<CR>
	EFF DOWN		PSEFF DOWN<CR>
	EFF **		PSEFF 10<CR>
	EFF ?	Return PSEFF Status	PSEFF ?<CR>
	DEL UP	DELAY UP/DOWN , direct change to *** *** : 000 to 300 by ASCII , 000=0ms, 300=300ms ---AVR-4311 can be operated from 0 to 300	PSDEL UP<CR>
	DEL DOWN		PSDEL DOWN<CR>
	DEL ***		PSDEL ***<CR>
	DEL ?	Return PSDEL Status	PSDEL ?<CR>
	AFD ON	AFDM ON/OFF	PSAFD ON<CR>
	AFD OFF		PSAFD OFF<CR>
	AFD ?		PSAFD ?<CR>
	PAN ON	PANORAMA ON/OFF	PSPAN ON<CR>
	PAN OFF		PSPAN OFF<CR>
	PAN ?		PSPAN ?<CR>
	DIM UP	DIMENSION UP/DOWN , direct change to ** ** : 00 to 06 by ASCII , 00=0, --AVR-4311 can be operated from 0 to 6	PSDIM UP<CR>
	DIM DOWN		PSDIM DOWN<CR>
	DIM **		PSDIM **<CR>
	DIM ?		PSDIM ?<CR>
	CEN UP	CENTER WIDTH UP/DOWN , direct change to ** ** : 00 to 07 by ASCII , 00=0 ---AVR-4311 can be operated from 0 to 7	PSCEN UP<CR>
	CEN DOWN		PSCEN DOWN<CR>
	CEN **		PSCEN 07<CR>
	CEN ?		PSCEN ?<CR>
	CEI UP	CENTER IMAGE UP/DOWN , direct change to ** ** : 00 to 10 by ASCII , 00=0.0 ---AVR-4311 can be operated from 0.0 to 1.0	PSCEI UP<CR>
	CEI DOWN		PSCEI DOWN<CR>
	CEI **		PSCEI 10<CR>
	CEI ?		OSCEI ?<CR>
	ATT ON	SW ATT ON/OFF	PSATT ON<CR>
	ATT OFF		PSATT OFF<CR>
	ATT ?		PSATT ?<CR>

PS **COMMAND** : "\*" parameter uses two or three ASCII characters. (see page6 J) section)



<b>COMMAND</b>	<b>PARAMETER</b>	<b>function</b>	<b>example</b>
PS	SWR ON	SW ON/OFF	PSSWR ON<CR>
	SWR OFF		PSSWR OFF<CR>
	SWR ?	Return PSSWR Status	PSSWR ?<CR>
	RSZ S	ROOM SIZE direct change	PSRSZ S<CR>
	RSZ MS		PSRSZ MS<CR>
	RSZ M		PSRSZ M<CR>
	RSZ ML		PSRSZ ML<CR>
	RSZ L		PSRSZ L<CR>
	RSZ ?		Return PSRSZ Status
	DELAY UP	AUDIO DELAY UP/DOWN , direct change to ***dB	PSDELAY UP<CR>
	DELAY DOWN		PSDELAY DOWN<CR>
	DELAY ***	---AVR-4311 can be operated from 0 to 200	PSDELAY 200<CR>
	DELAY ?	Return PSDELAY Status	PSDELAY ?<CR>
	RSTR OFF	AUDIO RESTORER direct change	PSRSTR OFF<CR>
	RSTR MODE1		PSRSTR MODE1<CR>
	RSTR MODE2		PSRSTR MODE2<CR>
	RSTR MODE3		PSRSTR MODE3<CR>
RSTR ?	Return PSRSTR Status	PSRSTR ?<CR>	

PS **COMMAND** : "\*" parameter uses two or three ASCII characters. (see page6 J) section)

COMMAND	PARAMETER	function	example
PV	CN UP	CONTRAST UP/DOWN , direct change to **	PVCN UP<CR>
	CN DOWN	** :44 to 56 by ASCII , 50=0	PVCN DOWN<CR>
	CN **	---AVR-4311 can be operated from -6 to +6(44 to 56)	PVCN 50<CR>
	CN ?	Return PSCN Status	PVCN ?<CR>
	BR UP	BRIGHTNESS UP/DOWN , direct change to **	PVBR UP<CR>
	BR DOWN	** :00 to 12 by ASCII , 00=0	PVBR DOWN<CR>
	BR **	---AVR-4311 can be operated from 0 to 12	PVBR 12<CR>
	BR ?	Return PSBR Status	PVBR ?<CR>
	CM UP	CHROMA LEVEL UP/DOWN , direct change to **	PVCM UP<CR>
	CM DOWN	** :44 to 56 by ASCII , 50=0	PVCM DOWN<CR>
	CM **	---AVR-4311 can be operated from -6 to +6(44 to 56)	PVCM 50<CR>
	CM ?	Return PSCN Status	PVCM ?<CR>
	HUE UP	HUE UP/DOWN , direct change to **	PVHUE UP<CR>
	HUE DOWN	** :44 to 56 by ASCII , 50=0	PVHUE DOWN<CR>
	HUE **	---AVR-4311 can be operated from -6 to +6(44 to 56)	PVHUE 50<CR>
	HUE ?	Return PSCN Status	PVHUE ?<CR>
	DNR OFF	DNR direct change	PVDNR OFF<CR>
	DNR LOW		PVDNR LOW<CR>
	DNR MID		PVDNR MID<CR>
	DNR HI		PVDNR HI<CR>
	DNR ?	Return PVDNR Status	PVDNR ?<CR>
	ENH UP	ENHANCER UP/DOWN, direct change to **	PVENH UP<CR>
	ENH DOWN	** :00 to 12 by ASCII , 00=0	PVENH DOWN<CR>
	ENH **	---AVR-4311 can be operated from 0 to 12	PVENH 12<CR>
ENH ?	Return PVENH Status	PVENH ?<CR>	

PV **COMMAND** : "\*" parameter uses two ASCII characters. (see page6 J) section)

COMMAND	PARAMETER	function	example
Z2	PHONO	ZONE2 mode set , and select source ---The name of PARAMETER is the same as that of the time of SI COMMAND.	Z2PHONO<CR>
	USB/IPOD		Z2USB/IPOD<CR>
	SOURCE	ZONE2 mode cancel	Z2SOURCE<CR>
	UP	ZONE2 VOLUME UP/DOWN , direct change to **dB  ** : 00 to 99 by ASCII , 80=0dB, 99=---(MIN) 00=-80dB	Z2UP<CR>
	DOWN		Z2DOWN<CR>
	**		Z280<CR>
	ON	ZONE2 ON/OFF change	Z2ON<CR>
	OFF		Z2OFF<CR>
?	Return Z2 Status	Z2?<CR>	
Z2MU	ON	ZONE2 OUTPUT MUTE ON/OFF change	Z2MUON<CR>
	OFF		Z2MUOFF<CR>
	?	Return Z2MU Status	Z2MU?<CR>
Z2CS	ST	ZONE2 Channel setting	Z2CSST<CR>
	MONO		Z2CSMONO<CR>
	?	Return Z2CS Status	Z2CS?<CR>
Z2CV	FL UP	ZONE2 CHANNEL VOLUME UP/DOWN , direct change to **dB ---FRONT Lch	Z2CVFL UP<CR>
	FL DOWN		Z2CVFL DOWN<CR>
	FL **		Z2CVFL 50<CR>
	FR UP	ZONE2 CHANNEL VOLUME UP/DOWN , direct change to **dB ---FRONT Rch	Z2CVFR UP<CR>
	FR DOWN		Z2CVFR DOWN<CR>
	FR **		Z2CVFR 50<CR>
	?	Return Z2CV Status	Z2CV?<CR>
Z2HPF	ON	ZONE2 HPF ON/OFF	Z2HPFON<CR>
	OFF		Z2HPFOFF<CR>
	?	Return Z2HPF Status	Z2HPF?<CR>

Z2, Z2CV **COMMAND** : "\*" parameter uses two ASCII characters. (see page6 J) section)

<b>COMMAND</b>	<b>PARAMETER</b>	<b>function</b>	<b>example</b>
Z2PS	BAS UP	ZONE2 BASS UP/DOWN , direct change to **dB	Z2PSBAS UP<CR>
	BAS DOWN	** :40 to 60 by ASCII , 00=0dB	Z2PSBAS DOWN<CR>
	BAS **	---AVR-4311 can be operated from -10 to +10	Z2PSBAS 50<CR>
	BAS ?	Return Z2PSBAS Status	Z2PSBAS ?<CR>
	TRE UP	ZONE2 TREBLE UP/DOWN , direct change to **dB	Z2PSTRE UP<CR>
	TRE DOWN	** :40 to 60 by ASCII , 00=0dB	Z2PSTRE DOWN<CR>
	TRE **	---AVR-4311 can be operated from -10 to +10	Z2PSTRE 50<CR>
	TRE ?	Return Z2PSTRE Status	Z2PSTRE ?<CR>
Z2	QUICK1	ZONE2 QUICK SELECT 1-5 MODE SELECT	Z2QUICK1<CR>
	QUICK2		Z2QUICK2<CR>
	QUICK3		Z2QUICK3<CR>
	QUICK4		Z2QUICK4<CR>
	QUICK5		Z2QUICK5<CR>
	QUICK1 MEMORY	ZONE2 QUICK SELECT 1-5 MODE MEMORY	Z2QUICK1 MEMORY<CR>
	QUICK2 MEMORY		Z2QUICK2 MEMORY<CR>
	QUICK3 MEMORY		Z2QUICK3 MEMORY<CR>
	QUICK4 MEMORY		Z2QUICK4 MEMORY<CR>
	QUICK5 MEMORY		Z2QUICK5 MEMORY<CR>
QUICK ?	Return Z2QUICK Status	Z2QUICK ?<CR>	
Z2SLP	<b>OFF</b>	<b>ZONE2 SLEEP TIMER setting</b>	<b>Z2SLPOFF&lt;CR&gt;</b>
	<b>***</b>	<b>***:001 to 120 by ASCII , 010=10min</b>	<b>Z2SLP120&lt;CR&gt;</b>
	<b>?</b>	<b>Return Z2SLP Status</b>	<b>Z2SLP?&lt;CR&gt;</b>

Z2 **COMMAND** : "\*" parameter uses two or three ASCII characters. (see page6 J) section)

COMMAND	PARAMETER	function	example
Z3	PHONO   USB/IPOD	ZONE3 mode set , and select source ---The name of PARAMETER is the same as that of the time of SI COMMAND.	Z3PHONO<CR>   Z3USB/IPOD<CR>
	SOURCE	ZONE3 mode cancel	Z3SOURCE<CR>
	UP	ZONE3 VOLUME UP/DOWN , direct change to **dB	Z3UP<CR>
	DOWN		Z3DOWN<CR>
	**	** : 00 to 99 by ASCII , 80=0dB, 99=---(MIN) 00=-80dB	Z380<CR>
	ON	ZONE3 ON/OFF change at AVR-4311	Z3ON<CR>
	OFF		Z3OFF<CR>
	?	Return Z3 Status	Z3?<CR>
Z3MU	ON	ZONE3 OUTPUT MUTE ON/OFF change	Z3MUON<CR>
	OFF		Z3MUOFF<CR>
	?	Return Z3MU Status	Z3MU?<CR>
Z3CS	ST	ZONE3 Channel setting	Z3CSST<CR>
	MONO		Z3CSMONO<CR>
	?	Return Z3CS Status	Z3CS?<CR>
Z3CV	FL UP	ZONE3 CHANNEL VOLUME UP/DOWN , direct change to **dB ---FRONT Lch	Z3CVFL UP<CR>
	FL DOWN		Z3CVFL DOWN<CR>
	FL **	** : 38 to 62 by ASCII , 50=0dB	Z3CVFL 50<CR>
	FR UP	ZONE3 CHANNEL VOLUME UP/DOWN , direct change to **dB ---FRONT Rch	Z3CVFR UP<CR>
	FR DOWN		Z3CVFR DOWN<CR>
	FR **	** : 38 to 62 by ASCII , 50=0dB	Z3CVFR 50<CR>
	?	Return Z3CV Status	Z3CV?<CR>
Z3HPF	ON	ZONE3 HPF ON/OFF	Z3HPFON<CR>
	OFF		Z3HPFOFF<CR>
	?	Return Z3HPF Status	Z3HPF?<CR>

Z3, Z3CV **COMMAND** : "\*" parameter uses two ASCII characters. (see page6 J) section)

COMMAND	PARAMETER	function	example
Z3PS	BAS UP	ZONE3 BASS UP/DOWN , direct change to **dB	Z3PSBAS UP<CR>
	BAS DOWN	** :00 to 99 by ASCII , 00=0dB	Z3PSBAS DOWN<CR>
	BAS **	--- AVR-4311 can be operated from -10 to +10(40 to 60)	Z3PSBAS 50<CR>
	BAS ?	Return Z3PSBAS Status	Z3PSBAS ?<CR>
	TRE UP	ZONE3 TREBLE UP/DOWN , direct change to **dB	Z3PSTRE UP<CR>
	TRE DOWN	** :00 to 99 by ASCII , 00=0dB	Z3PSTRE DOWN<CR>
	TRE **	--- AVR-4311 can be operated from -10 to +10(40 to 60)	Z3PSTRE 50<CR>
	TRE ?	Return Z3PSTRE Status	Z3PSTRE ?<CR>
Z3	QUICK1	ZONE3 QUICK SELECT 1-5 MODE SELECT	Z3QUICK1<CR>
	QUICK2		Z3QUICK2<CR>
	QUICK3		Z3QUICK3<CR>
	QUICK4		Z3QUICK4<CR>
	QUICK5		Z3QUICK5<CR>
	QUICK1 MEMORY	ZONE3 QUICK SELECT 1-5 MODE MEMORY	Z3QUICK1 MEMORY<CR>
	QUICK2 MEMORY		Z3QUICK2 MEMORY<CR>
	QUICK3 MEMORY		Z3QUICK3 MEMORY<CR>
	QUICK4 MEMORY		Z3QUICK4 MEMORY<CR>
	QUICK5 MEMORY		Z3QUICK5 MEMORY<CR>
QUICK ?	Return Z3QUICK Status	Z3QUICK ?<CR>	
Z3SLP	OFF	ZONE3 SLEEP TIMER setting	Z3SLPOFF<CR>
	***	** :001 to 120 by ASCII , 010=10min	Z3SLP120<CR>
	?	Return Z3SLP Status	Z3SLP?<CR>

Z3PS **COMMAND** : "\*" parameter uses two or three ASCII characters. (see page6 J) section)

**ANALOG TUNER Control (except AVR-4311CI model)**

<b>COMMAND</b>	<b>PARAMETER</b>	<b>function</b>	<b>example</b>
TF	ANUP	TUNER Frequency UP/DOWN	TFANUP<CR>
	ANDOWN		TFANDOWN<CR>
	AN***** (6 digits)	--- ****.** kHz at AM band (>050000 is AM.) ****.** MHz at FM band (<050000 is FM.)	TFAN105000<CR> (1050.00kHz at AM)
	AN?	Return TF Status	TFAN?<CR>
TP	ANUP	TUNER PRESET CH UP/DOWN , direct change to No.**	TPANUP<CR>
	ANDOWN		TPANDOWN<CR>
	AN** (PRESET No.)		TPANA1<CR> (PRESET No. "A1")
	AN?		Return TP Status
	ANMEM	TUNER PRESET MEMORY	TPANMEM<CR>
TM	ANAM	TUNER BAND , MODE Select ---Band set to AM	TMANAM<CR>
	ANFM	---Band set to FM	TMANFM<CR>
	AN?	Return TM Status	TMAN?<CR>
	ANAUTO	---Tuning mode set to AUTO mode	TMANAUTO<CR>
	ANMANUAL	---Tuning mode set to MANUAL mode	TMANMANUAL<CR>

TF, TP, TM **COMMAND** : '\*' parameters can NOT operate when INPUT source isn't TUNER.

SIRIUS Control(North America model only)

<i>COMMAND</i>	<i>PARAMETER</i>	<i>function</i>	<i>example</i>
TF	STUP	SIRIUS Channel UP/DOWN	TFSTUP<CR>
	STDOWN		TFSTDOWN<CR>
	ST*** (3 digits)	--- ***:ST CH No.	TFST001<CR> (ST001 CH at SIRIUS TUNER)
	STPL**** (4 digits)	--- ***:Parental Lock Code Number	TFSTPL1234<CR> (Parental Lock code "1234")
	ST?	Return TFST Status	TFST?<CR>
TP	STUP	SIRIUS PRESET CH UP/DOWN , direct change to No.**	TPSTUP<CR>
	STDOWN		TPSTDOWN<CR>
	ST**(PRESET No.)		TPSTA1<CR> (PRESET No."A1")
	ST?	Return TPST Status	TPST?<CR>
	STMEM	SIRIUS PRESET MEMORY	TPSTMEM<CR>
ST	?	Return ST Status - CHANNEL NAME, ARTIST, COMPOSER, TITLE, SIGNAL LEVEL	ST?<CR>



### HD RADIO Control(AVR-4311CI North America model only)

<i>COMMAND</i>	<i>PARAMETER</i>	<i>function</i>	<i>example</i>
TF	HDUP	HD Channel UP/DOWN , direct change	TFHDUP<CR>
	HDDOWN		TFHDDOWN<CR>
	HD***** (6 digits)	--- ****.** kHz at AM band (>050000 is AM.) ****.** MHz at FM band (<050000 is FM.)	TFHD105000<CR> (1050.00kHz at AM)
	HDMC* (1 digit)	---HD Multi Cast CH Select <b>(*:Multi Cast 1~8, Analog 0)</b>	TFHDMC2<CR>
	HD?	Return TFHD Status	TFHD?<CR>
TP	HDUP	HD PRESET CH UP/DOWN , direct change to No.**	TPHDUP<CR>
	HDDOWN		TPHDDOWN<CR>
	HD** (PRESET No.)		TPHDA1<CR> (PRESET No."A1")
	HD?	Return TPHD Status	TPHD?<CR>
	HDMEM	HD PRESET MEMORY	TPHDMEM<CR>
TM	HDAM	HD RADIO BAND , MODE Select ---Band set to AM	TMHDAM<CR>
	HDFM	---Band set to FM	TMHDFM<CR>
	HD?	Return TMHD Status	TMHD?<CR>
	HDAUTOHD	---Tuning mode set to AUTO-HD mode	TMHDAUTOHD<CR>
	HDAUTO	---Tuning mode set to AUTO mode	TMHDAUTO<CR>
	HDMANUAL	---Tuning mode set to MANUAL mode	TMHDMANUAL<CR>
HD	?	Return HD Status ---BAND, STATION NAME, MULTI CAST CURRENT, MULTI CAST NUMBER, SIGNAL LEVEL, ARTIST, TITLE,ALBUM, GENRE, PROGRAM TYPE, MODE	HD?<CR>

### Network Audio/USB /iPod DIRECT Extended Control

COMMAND	PARAMETER	function	example
SI	USB	Select INPUT source NET/USB and USB Start Playback	SIUSB<CR>
Z2	USB	Select ZONE2 source NET/USB and USB Start Playback	Z2USB<CR>
Z3	USB	Select ZONE3 source NET/USB and USB Start Playback	Z3USB<CR>
SI	IPD	Select INPUT source NET/USB and iPod Direct Start Playback	SIIPD<CR>
Z2	IPD	Select ZONE2 source NET/USB and iPod Direct Start Playback	Z2IPD<CR>
Z3	IPD	Select ZONE3 source NET/USB and iPod Direct Start Playback	Z3IPD<CR>
NS	90	"Cursor Up" Control	NS90<CR>
	91	"Cursor Down" Control	NS91<CR>
	92	"Cursor Left" Control	NS92<CR>
	93	"Cursor Right" Control	NS93<CR>
	94	"Enter (Play/Pause)" Control	NS94<CR>
	9A	"Play" Control(iRadio/mServer/USB) "Play/Pause" Control(iPod Direct)	NS9A<CR>
	9B	"Pause" Control "Play/Pause" Control(iPod Direct)	NS9B<CR>
	9C	"Stop" Control	NS9C<CR>
	9D	"Skip Plus" Control	NS9D<CR>
	9E	"Skip Minus" Control	NS9E<CR>
	9H	"Repeat One" (USB/iPod DIRECT/mServer/Rhapsody/Napster)	NS9H<CR>
	9I	"Repeat All" (USB/iPod DIRECT/mServer/Rhapsody/Napster)	NS9I<CR>
	9J	"Repeat Off" (USB/iPod DIRECT/mServer/Rhapsody/Napster)	NS9J<CR>
	9K	"Random On/Repeat ALL" (USB/mServer/Rhapsody/Napster) "Shuffle Songs" Control (iPod Direct Only)	NS9K<CR>
	9M	"Random Off" (USB/mServer/Rhapsody/Napster) "Shuffle Off" Control (iPod Direct Only)	NS9M<CR>
	9W	Toggle Switch "Browse Mode/Remote Mode Control (iPod Direct Only)	NS9W<CR>
	9X	"Page Next" Control	NS9X<CR>
9Y	"Page Previous" Control	NS9Y<CR>	
PT		<b>Enter/Exit PARTY MODE</b>	<b>NSPT&lt;CR&gt;</b>

<b>COMMAND</b>	<b>PARAMETER</b>	function	example
NSA		Return Onscreen Display Information List (ASCII CODE Character)	NSA<CR> (Return NSA0-NSA8,Refer to Page 49)
NSE		Request Onscreen Display Information List (UTF-8 CODE Character)	NSE<CR> (Return NSE0-NSE8,Refer to Page 50)
NSB	**	"Direct Preset CH Play"	NSB00<CR> (*:00-55,00=A1,01=A2,B1=08,G8=55)
NSC	**	"Direct Preset CH Memory"(iRadio/mServer only)	NSC00<CR> (*:00-55,00=A1,01=A2,B1=08,G8=55)
NSD	*	"Direct Character Search"(iRadio/mServer/USB/Rhapsody only)	NSD0<CR> (*:0-9,A-Z)

## iPod dock Extended Control

iPod Dock which AVR-4311 can connect with is ASD-1R/11R.

COMMAND	PARAMETER	function	example
IP	90	"Cursor Up" Control	IP90<CR>
	91	"Cursor Down" Control	IP91<CR>
	92	"Cursor Left" Control	IP92<CR>
	93	"Cursor Right" Control	IP93<CR>
	94	"Enter (Play/Pause)" Control	IP94<CR>
	9A	"Play/Pause" Control	IP9A<CR>
	9C	"Stop" Control	IP9C<CR>
	9D	"Skip Plus" Control	IP9D<CR>
	9E	"Skip Minus" Control	IP9E<CR>
	9F	"Manual Search Plus" Control	IP9F<CR>
	9G	"Manual Search Minus" Control	IP9G<CR>
	9H	"Repeat One" Control	IP9H<CR>
	9I	"Repeat All" Control	IP9I<CR>
	9J	"Repeat Off" Control	IP9J<CR>
	9K	"Shuffle Songs" Control	IP9K<CR>
	9L	"Shuffle Album" Control	IP9L<CR>
	9M	"Shuffle Off" Control	IP9M<CR>
	9N	"MENU" Control	IP9N<CR>
	9P	Switch the "Browse Mode" Control	IP9P<CR>
	9Q	Switch the "Remote Mode" Control	IP9Q<CR>
9X	"Page Next" Control	IP9X<CR>	
9Y	"Page Previous" Control	IP9Y<CR>	
IPA		Return Onscreen Display Information List (ASCII CODE Character)	IPA<CR> (Return IPA0-IPA9, Refer to Page 51-52 )
IPE		Request Onscreen Display Information List(iPod) (UTF-8 CODE Character)	IPE<CR> (Return IPE0-IPE9, Refer to Page 53-54 )

**Cursor/Enter/Menu(Setup)**

<b>COMMAND</b>	<b>PARAMETER</b>	function	example
MN	CUP	"Cursor Up" Control	MNCUP<CR>
	CDN	"Cursor Down" Control	MNCDN<CR>
	CLT	"Cursor Left" Control	MNCLT<CR>
	CRT	"Cursor Right" Control	MNCRT<CR>
	ENT	"Enter" Control	MNENT<CR>
	RTN	"RETURN" Control	MNRTN<CR>
	MEN ON	"GUI Menu ON" Control	MNMEN ON<CR>
	MEN OFF	"GUI Menu OFF" Control	MNMEN OFF<CR>
	SRC ON	"GUI Source Select Menu ON" Control	MNSRC ON<CR>
	SRC OFF	"GUI Source Select Menu OFF" Control	MNSRC OFF<CR>

**Remote Lock/Panel Lock**

<i>COMMAND</i>	<i>PARAMETER</i>	<i>function</i>	<i>example</i>
SY	REMOTE LOCK ON	REMOTE CONTROL LOCK ON/OFF	SYREMOTE LOCK ON<CR>
	REMOTE LOCK OFF		SYREMOTE LOCK OFF<CR>
	PANEL LOCK ON	PANEL BUTTON (Except MASTER VOL.)CONTROL LOCK ON	SYPANEL LOCK ON<CR>
	PANEL+V LOCK ON	PANEL BUTTON & MASTER VOL. CONTROL LOCK ON	SYPANEL+V LOCK ON<CR>
	PANEL LOCK OFF	PANEL BUTTUM & MASTER VOL. CONTROL LOCK OFF	SYPANEL LOCK OFF<CR>

**UPGRADE ID Display**

<i>COMMAND</i>	<i>PARAMETER</i>	<i>function</i>	<i>example</i>
UG	IDN	ID Number for UPGRADE is displayed on FL Display	UGIDN<CR>

## EVENT(or RESPONSE) and PARAMETER list

<i>EVENT</i>	<i>PARAMETER</i>	function	example
PW	ON	POWER ON/STANDBY change	PWON<CR>
	STANDBY		PWSTANDBY<CR>
MV	**	MASTER VOLUME change , **:00 to 99 by ASCII 98 = 18dB(MAX) 80 = 0dB 00 = -80dB <b>995 = -80.5dB</b> 99 = --- (MIN)	MV80<CR>
CV	FL **	CHANNEL VOLUME change , **:00,38 to 62 by ASCII 62 = +12dB(MAX) 50 = 0dB 38 = -12dB(MIN)	CVFL 50<CR>
	FR **		CVFR 50<CR>
	C **		CVC 50<CR>
	SW **		CVSW 50<CR>
	<b>SW2 **</b>		<b>CVSW2 50&lt;CR&gt;</b>
	SL **		CVSL 50<CR>
	SR **		CVSR 50<CR>
	SBL **		(at SBch 2SP) CVSBL 50<CR>
	SBR **		(at SBch 2SP) CVSBR 50<CR>
	SB **		(at SBch 1SP) CVSB 50<CR>
	FHL **		CVFHL 50<CR>
	FHR **		CVFHR 50<CR>
	FWL **		CVFWL 50<CR>
	FWR **		CVFWR 50<CR>
	MU		ON
OFF		MUOFF<CR>	
SI	PHONO	INPUT source change  (Except AVR-4311CI model)	SIPHONO<CR>
	CD		SICD<CR>
	TUNER		SITUNER<CR>
	DVD		SIDVD<CR>
	<b>BD</b>		<b>SIBD&lt;CR&gt;</b>
	TV		SITV<CR>
	SAT/CBL		SISAT/CBL<CR>
	DVR		SIDVR<CR>

The **PARAMETER** of MV, CV **EVENT** : Uses two or three ASCII characters. (see page6 J) section)

<b>EVENT</b>	<b>PARAMETER</b>	<b>function</b>	<b>example</b>
SI	<b>GAME</b>		<b>SIGAME&lt;CR&gt;</b>
	V.AUX		SIV.AUX<CR>
	<b>DOCK</b>		<b>SIDOCK&lt;CR&gt;</b>
	SIRIUS	(North America model Only)	SISIRIUS<CR>
	HDRADIO	(AVR-4311CI model Only)	SIHDRADIO<CR>
	IPOD		SIIPOD<CR>
	RHAPSODY	(North America model Only)	SIRHAPSODY<CR>
	NAPSTER	(North America & Europe model Only)	SINAPSTER<CR>
	FAVORITES		SIFAVORITES<CR>
	IRADIO		SIIRADIO<CR>
	SERVER		SISERVER<CR>
	USB DIRECT		SIUSB DIRECT<CR>
	IPOD DIRECT		SIIPOD DIRECT<CR>
	USB		SIUSB<CR>
	IPD		SIIPD<CR>
ZM	ON	MAIN ZONE ON/OFF change	ZMON<CR>
	OFF		ZMOFF<CR>
SR	PHONO   IPOD DIRECT	REC SELECT source change ---The name of PARAMETER is the same as that of the time of SI COMMAND.	SRPHONO<CR>
	SOURCE	REC SELECT mode cancel	SRSOURCE<CR>
SD	AUTO	INPUT mode change	SDAUTO<CR>
	HDMI		SDHDMI<CR>
	DIGITAL		SDDIGITAL<CR>
	ANALOG		SDANALOG<CR>
	EXT.IN		SDEXT.IN<CR>
	<b>ARC</b>		ARC playing
	<b>NO</b>	No Input	<b>SDNO&lt;CR&gt;</b>
DC	AUTO	DIGITAL INPUT mode change	DCAUTO<CR>
	PCM		DCPCM<CR>
	DTS		DCDTS<CR>



<i><b>EVENT</b></i>	<i><b>PARAMETER</b></i>	function	example
SV	DVD	VIDEO SELECT mode source change	SVDVD<CR>
	<b>BD</b>		<b>SVBD&lt;CR&gt;</b>
	TV		SVTV<CR>
	SAT/CBL		SVSAT/CBL<CR>
	DVR		SVDVR<CR>
	<b>GAME</b>		<b>SVGAME&lt;CR&gt;</b>
	V.AUX		SVV.AUX<CR>
	<b>DOCK</b>		<b>SVDOCKCR&gt;</b>
	SOURCE		SVSOURCE<CR>
SLP	<b>OFF</b>	MAIN ZONE SLEEP TIMER setting change	<b>SLPOFF&lt;CR&gt;</b>
	<b>***</b>		<b>SLP120&lt;CR&gt;</b>

<b>EVENT</b>	<b>PARAMETER</b>	<b>function</b>	<b>example</b>
MS	DIRECT	SURROUND mode change	MSDIRECT<CR>
	DSD DIRECT		MSDSD DIRECT<CR>
	PURE DIRECT		MSPURE DIRECT<CR>
	STEREO		MSSTEREO<CR>
	MULTI CH IN		MSMULTI CH IN<CR>
	M CH IN+PL2X C		MSM CH IN+PL2X C<CR>
	M CH IN+PL2X M		MSM CH IN+PL2X M<CR>
	M CH IN+PL2Z H		MSM CH IN+PL2Z H<CR>
	M CH IN +DOLBY EX		MSM CH IN+DOLBY EX<CR>
	MULTI CH IN 7.1		MSMULTI CH IN 7.1<CR>
	DOLBY PRO LOGIC		MSDOLBY PRO LOGIC<CR>
	DOLBY PL2 C		MSDOLBY PL2 C<CR>
	DOLBY PL2 M		MSDOLBY PL2 M<CR>
	DOLBY PL2 G		MSDOLBY PL2 G<CR>
	DOLBY PL2X C		MSDOLBY PL2X C<CR>
	DOLBY PL2X M		MSDOLBY PL2X M<CR>
	DOLBY PL2X G		MSDOLBY PL2X G<CR>
	DOLBY PL2Z H		MSDOLBY PL2Z H<CR>
	DOLBY DIGITAL		MSDOLBY DIGITAL<CR>
	DOLBY D EX		MSDOLBY D EX<CR>
	DOLBY D +PL2X C		MSDOLBY D+PL2X C<CR>
	DOLBY D +PL2X M		MSDOLBY D+PL2X M<CR>
	DOLBY D +PL2Z H		MSDOLBY D+PL2Z H<CR>
	DTS NEO:6 C		MSDTS NEO:6 C<CR>
	DTS NEO:6 M		MSDTS NEO:6 M<CR>
	DTS SURROUND		MSDTS SURROUND<CR>
	DTS ES DSCRT6.1		MSDTS ES DSCRT6.1<CR>
	DTS ES MTRX6.1		MSDTS ES MTRX6.1<CR>
	DTS+PL2X C		MSDTS+PL2X C<CR>
	DTS+PL2X M		MSDTS+PL2X M<CR>

<b>EVENT</b>	<b>PARAMETER</b>	function	example
MS	DTS+PL2Z H	---5/7/9/11CH STEREO mode	MSDTS+PL2Z H<CR>
	DTS+NEO:6		MSDTS+NEO:6<CR>
	DTS96/24		MSDTS96/24<CR>
	DTS96 ES MTRX		MSDTS96 ES MTRX<CR>
	<b>MCH STEREO</b>		<b>MSMCH STEREO&lt;CR&gt;</b>
	WIDE SCREEN		MSWIDE SCREEN<CR>
	SUPER STADIUM		MSSUPER STADIUM<CR>
	ROCK ARENA		MSROCK ARENA<CR>
	JAZZ CLUB		MSJAZZ CLUB<CR>
	CLASSIC CONCERT		MSCCLASSIC CONCERT<CR>
	MONO MOVIE		MSMONO MOVIE<CR>
	MATRIX		MSMATRIX<CR>
	VIDEO GAME		MSVIDEO GAME<CR>
	VIRTUAL		MSVIRTUAL<CR>
	DOLBY D+		MSDOLBY D+<CR>
	DOLBY D+ +EX		MSDOLBY D+ +EX<CR>
	DOLBY D+ +PL2X C		MSDOLBY D+ +PL2X C<CR>
	DOLBY D+ +PL2X M		MSDOLBY D+ +PL2X M<CR>
	DOLBY D+ +PL2Z H		MSDOLBY D+ +PL2Z H<CR>
	DOLBY TRUEHD		MSDOLBY HD<CR>
	DOLBY HD		MSDOLBY HD<CR>
	DOLBY HD+EX		MSDOLBY HD+EX<CR>
	DOLBY HD+PL2X C		MSDOLBY HD+PL2X C<CR>
	DOLBY HD+PL2X M		MSDOLBY HD+PL2X M<CR>
	DOLBY HD+PL2Z H		MSDOLBY HD+PL2Z H<CR>
	DTS HD		MSDTS HD<CR>
	DTS HD MSTR		MSDTS HD MSTR<CR>
	DTS HD+NEO:6		MSDTS HD+NEO:6<CR>
	DTS HD+PL2X C		MSDTS HD+PL2X C<CR>
	DTS HD+PL2X M		MSDTS HD+PL2X M<CR>
	DTS HD+PL2Z H		MSDTS HD+PL2Z H<CR>
	DTS ES 8CH DSCRT		MSDTS ES 8CH DSCRT<CR>
	DTS EXPRESS		MSDTS EXPRESS<CR>

<b>EVENT</b>	<b>PARAMETER</b>	<b>function</b>	<b>example</b>
MS	MPEG2 AAC	(JAPAN model Only)	MSMPEG2 AAC<CR>
	AAC+DOLBY EX	(JAPAN model Only)	MSAAC+DOLBY EX<CR>
	AAC+PL2X C	(JAPAN model Only)	MSAAC+PL2X C<CR>
	AAC+PL2X M	(JAPAN model Only)	MSAAC+PL2X M<CR>
	AAC+PL2Z H	(JAPAN model Only)	MSAAC+PL2Z H<CR>
	<b>AUDYSSEY DSX</b>		<b>MSAUDYSSEY DSX&lt;CR&gt;</b>
	<b>PL DSX</b>		<b>MSPL DSX&lt;CR&gt;</b>
	<b>PL2 C DSX</b>		<b>MSPL2 C DSX&lt;CR&gt;</b>
	<b>PL2 M DSX</b>		<b>MSPL2 M DSX&lt;CR&gt;</b>
	<b>PL2 G DSX</b>		<b>MSPL2 G DSX&lt;CR&gt;</b>
	<b>PL2X C DSX</b>		<b>MSPL2X C DSX&lt;CR&gt;</b>
	<b>PL2X M DSX</b>		<b>MSPL2X M DSX&lt;CR&gt;</b>
	<b>PL2X G DSX</b>		<b>MSPL2X G DSX&lt;CR&gt;</b>
	<b>NEO:6 C DSX</b>		<b>MSNEO:6 C DSX&lt;CR&gt;</b>
	<b>NEO:6 M DSX</b>		<b>MSNEO:6 M DSX&lt;CR&gt;</b>
	QUICK1	QUICK SELECT mode change	MSQUICK1<CR>
	QUICK2		MSQUICK2<CR>
	QUICK3		MSQUICK3<CR>
	QUICK4		MSQUICK4<CR>
	QUICK5		MSQUICK5<CR>
QUICK0	---QUICK 1(or 2, 3, 4, 5) Change QUICK SELECT OFF	MSQUICK0<CR>	

<b>EVENT</b>	<b>PARAMETER</b>	<b>function</b>	<b>example</b>
VS	MONIAUTO	HDMI MONITOR setting change	VSMONIAUTO<CR>
	MONI1		VSMONI1<CR>
	MONI2		VSMONI2<CR>
	ASPNRM	ASPECT setting change	VSASPNRM<CR>
	ASPFUL		VSASPFUL<CR>
	SC48P	Resolution(analog) setting change	VSSC48P<CR>
	SC10I		VSSC10I<CR>
	SC72P		VSSC72P<CR>
	SC10P		VSSC10P<CR>
	SC10P24		VSSC10P24<CR>
	SCAUTO		VSSCAUTO<CR>
	SCH48P		Resolution(HDMI) setting change
	SCH10I	VSSCH10I<CR>	
	SCH72P	VSSCH72P<CR>	
	SCH10P	VSSCH10P<CR>	
	SCH10P24	VSSCH10P24<CR>	
	SCHAUTO	VSSCHAUTO<CR>	
	AUDIO AMP	HDMI AUDIO Output setting change	
	AUDIO TV		VSAUDIO TV<CR>
	VPMAUTO	Video Mode setting change	VSVPMAUTO<CR>
	VPMGAME		VSVPMGAME<CR>
	VPMMOVI		VSVPMMOVI<CR>
	VST ON		VSVST ON<CR>
	VST OFF		VSVST OFF<CR>
	VST ?		VSVST ? <CR>

<b>EVENT</b>	<b>PARAMETER</b>	<b>function</b>	<b>example</b>	
PS	TONE CTRL OFF	TONE CONTROL ON/OFF change	PSTONE CTRL OFF<CR>	
	TONE CTRL ON		PSTONE CTRL OFF<CR>	
	SB:MTRX ON	SURROUND BACK MODE change	PSSB:MTRX ON<CR>	
	SB:PL2X CINEMA		PSSB:PL2X CINEMA<CR>	
	SB:PL2X MUSIC		PSSB:PL2X MUSIC<CR>	
	SB:ON		PSSB:ON<CR>	
	SB:OFF		PSSB:OFF<CR>	
	SB:ESDSCRT		PSSB:ESDSCRT<CR>	
	SB:ESMTRX		PSSB:ESMTRX<CR>	
	SB:DSCRT ON		PSSB:DSCRT ON<CR>	
	CINEMA EQ.ON		CINEMA EQ. ON/OFF change	PSCINEMA EQ.ON<CR>
	CINEMA EQ.OFF			PSCINEMA EQ.OFF<CR>
	MODE:CINEMA	CINEMA / MUSIC / GAME / PL /HEIGHT mode change	PSMODE:CINEMA<CR>	
	MODE:MUSIC		PSMODE:MUSIC<CR>	
	MODE:GAME		PSMODE:GAME<CR>	
	MODE:PRO LOGIC		PSMODE:PRO LOGIC<CR>	
	MODE:HEIGHT		PSMODE:HEIGHT<CR>	
	DOLVOL ON	Dolby Volume change	PSDOLVOL ON<CR>	
	DOLVOL OFF		PSDOLVOL OFF<CR>	
	VOLLEV LOW	Dolby Volume Leveler change	PSVOLLEV LOW<CR>	
	VOLLEV MID		PSVOLLEV MID<CR>	
	VOLLEV HI		PSVOLLEV HI<CR>	
	VOLMOD HLF	Dolby Volume Modeler change	PSVOLMOD HLF<CR>	
	VOLMOD FUL		PSVOLMOD FUL<CR>	
	VOLMOD OFF		PSVOLMOD OFF<CR>	
	FH:ON	FRONT HEIGHT Output change	PSFH:ON<CR>	
	FH:OFF		PSFH:OFF<CR>	
	<b>PHG LOW</b>	PL z HEIGHT GAIN direct change	<b>PSPHG LOW&lt;CR&gt;</b>	
	<b>PHG MID</b>		<b>PSPHG MID&lt;CR&gt;</b>	
	<b>PHG HI</b>		<b>PSPHG HI&lt;CR&gt;</b>	

<b>EVENT</b>	<b>PARAMETER</b>	<b>function</b>	<b>example</b>
PS	<b>SP:FH</b>	Speaker Output set(F.Height/F.Wide)	<b>PSSP:FH&lt;CR&gt;</b>
	<b>SP:FW</b>		<b>PSSP:FW&lt;CR&gt;</b>
	<b>SP:HW</b>		<b>PSSP:HW&lt;CR&gt;</b>
	<b>SP:OFF</b>		<b>PSSP:OFF&lt;CR&gt;</b>
	MULTEQ:AUDYSSEY	MultEQ XT mode change	PSMULTEQ:AUDYSSEY<CR>
	MULTEQ:BYP.LR		PSMULTEQ:BYP.LR<CR>
	MULTEQ:FLAT		PSMULTEQ:FLAT<CR>
	MULTEQ:MANUAL		PSMULTEQ:MANUAL<CR>
	MULTEQ:OFF		PSMULTEQ:OFF<CR>
	DYNEQ ON	DYNAMIC EQ change	PSDYNEQ ON<CR>
	DYNEQ OFF		PSDYNEQ OFF<CR>
	REFLEV 0	Reference Level Offset change	PSREFLEV 0<CR>
	REFLEV 5		PSREFLEV 5<CR>
	REFLEV 10		PSREFLEV 10<CR>
	REFLEV 15		PSREFLEV 15<CR>
	<b>DYNVOL NGT</b>	DYNAMIC VOLUME change	<b>PSDYNVOL NGT&lt;CR&gt;</b>
	<b>DYNVOL EVE</b>		<b>PSDYNVOL EVE&lt;CR&gt;</b>
	<b>DYNVOL DAY</b>		<b>PSDYNVOL DAY&lt;CR&gt;</b>
	<b>DSX ONHW</b>	Audyssey DSX change	<b>PSDSX ONHW&lt;CR&gt;</b>
	<b>DSX ONH</b>		<b>PSDSX ONH&lt;CR&gt;</b>
	<b>DSX ONW</b>		<b>PSDSX ONW&lt;CR&gt;</b>
	<b>DSX OFF</b>		<b>PSDSX OFF&lt;CR&gt;</b>
	<b>STW **</b>	STAGE WIDTH change	<b>PSSTW 50&lt;CR&gt;</b>
	<b>STH **</b>	STAGE HEIGHT change	<b>PSSTH 50&lt;CR&gt;</b>
	<b>BAS **</b>	BASS change	PSBAS 50<CR>
	<b>TRE **</b>	TREBLE change	PSTRE 50<CR>
	DRC AUTO	DRC change	PSDRC AUTO<CR>
	DRC LOW		PSDRC LOW<CR>
	DRC MID		PSDRC MID<CR>
	DRC HI		PSDRC HI<CR>
	DRC OFF		PSDRC OFF<CR>

<b>EVENT</b>	<b>PARAMETER</b>	<b>function</b>	<b>example</b>
PS	DCO OFF	D.COMP change	PSDCO OFF<CR>
	DCO LOW		PSDCO LOW<CR>
	DCO MID		PSDCO MID<CR>
	DCO HIGH		PSDCO HIGH<CR>
	LFE **	LFE change	PSLFE 10<CR>
	EFF **	EFFECT LEVEL change	PSEFF 10<CR>
	DEL ***	DELAY change	PSDEL ***<CR>
	AFD ON	AFDM change	PSAFD ON<CR>
	AFD OFF		PSAFD OFF<CR>
	PAN ON	PANORAMA change	PSPAN ON<CR>
	PAN OFF		PSPAN OFF<CR>
	DIM **	DIMMENSION change	PSDIM **<CR>
	CEN **	CENTER WIDTH change	PSCEN 07<CR>
	CEI **	CENTER IMAGE change	PSCEI 10<CR>
	ATT ON	ATT ON/OFF change	PSATT ON
	ATT OFF		PSATT OFF
	SWR ON	SW ON/OFF change	PSSWR ON<CR>
	SWR OFF		PSSWR OFF<CR>
	RSZ S	ROOM SIZE change	PSRSZ S<CR>
	RSZ MS		PSRSZ MS<CR>
	RSZ M		PSRSZ M<CR>
	RSZ ML		PSRSZ ML<CR>
	RSZ L		PSRSZ L<CR>
	DELAY ***	AUDIO DELAY change	PSDELAY 200<CR>
	RSTR OFF	AUDIO RESTORER change	PSRSTR OFF<CR>
	RSTR MODE1		PSRSTR MODE1<CR>
	RSTR MODE2		PSRSTR MODE2<CR>
	RSTR MODE3		PSRSTR MODE3<CR>



<i><b>EVENT</b></i>	<i><b>PARAMETER</b></i>	<i>function</i>	<i>example</i>
PV	CN **	CONTRAST change	PVCN 50<CR>
	BR **	BRIGHTNESS Change	PVBR 12<CR>
	CM **	CROMA LEVEL change	PVCM 50<CR>
	HUE **	Hue Change	PVHUE 50<CR>
	DNR OFF	DNR change	PVDNR OFF<CR>
	DNR LOW		PVDNR LOW<CR>
	DNR MID		PVDNR MID<CR>
	DNR HI		PVDNR HI<CR>
	ENH **	ENHANCER change	PVENH 12<CR>

<b>EVENT</b>	<b>PARAMETER</b>	<b>function</b>	<b>example</b>
Z2	PHONO   USB DIRECT IPOD DIRECT	ZONE2 source change ---The name of PARAMETER is the same as that of the time of SI COMMAND.	Z2PHONO<CR>   Z2USB DIRECT<CR> Z2IPOD DIRECT<CR>
	SOURCE	ZONE2 mode cancel	Z2SOURCE<CR>
	QUICK1	ZONE2 QUICK SELECT mode change	Z2QUICK1<CR>
	QUICK2		Z2QUICK2<CR>
	QUICK3		Z2QUICK3<CR>
	QUICK4		Z2QUICK4<CR>
	QUICK5		Z2QUICK5<CR>
	QUICK0	---Z2 QUICK SELECT 1(or 2, 3, 4, 5) Change QUICK SELCT OFF	Z2QUICK0<CR>
	**	ZONE2 VOLUME change , **:00 to 99 by ASCII 98 = 18dB(MAX) 80 = 0dB 10 = -70dB 00 = -80dB 99 = ---(MIN)	Z280<CR>
	ON	ZONE2 ON/OFF change	Z2ON<CR>
OFF	Z2OFF<CR>		
Z2MU	ON	ZONE2 OUTPUT MUTE ON/OFF change	Z2MUON<CR>
	OFF		Z2MUOFF<CR>
Z2CS	ST	ZONE2 Channel setting	Z2CSST<CR>
	MONO		Z2CSMONO<CR>
Z2CV	FL **	** : 38 to 62 by ASCII , 50=0dB	Z2CVFL 50<CR>
	FR **	** : 38 to 62 by ASCII , 50=0dB	Z2CVFR 50<CR>
Z2HPF	ON	ZONE2 HPF ON/OFF change	Z2HPFON<CR>
	OFF		Z2HPFOFF<CR>
Z2PS	BAS **	ZONE2 BASS change	Z2PSBAS 50<CR>
	TRE **	ZONE2 TEBLE change	Z2PSTRE 50<CR>
<b>Z2SLP</b>	<b>OFF</b>	ZONE2 SLEEP TIMER setting change	<b>Z2SLPOFF&lt;CR&gt;</b>
	<b>***</b>		<b>Z2SLP120&lt;CR&gt;</b>

The **PARAMETER** of Z2 **EVENT** : Uses two or three ASCII characters. (see page4 J) section)

<b>EVENT</b>	<b>PARAMETER</b>	function	example
Z3	PHONO   USB DIRECT IPOD DIRECT	ZONE3 source change ---The name of PARAMETER is the same as that of the time of SI COMMAND.	Z3PHONO<CR>   Z3USB DIRECT<CR> Z3IPOD DIRECT<CR>
	SOURCE	ZONE3 mode cancel	Z3SOURCE<CR>
	QUICK1	ZONE3 QUICK SELECT mode change	Z3QUICK1<CR>
	QUICK2		Z3QUICK2<CR>
	QUICK3		Z3QUICK3<CR>
	QUICK4		Z3QUICK4<CR>
	QUICK5		Z3QUICK5<CR>
	QUICK0	---Z3 QUICK SELECT 1(or 2, 3, 4, 5) Change QUICK SELCT OFF	Z3QUICK0<CR>
	**	ZONE3 VOLUME change , **:00 to 99 by ASCII 98 = 18dB(MAX) 80 = 0dB 10 = -70dB 00 = -80dB 99 = ---(MIN)	Z380<CR>
	ON	ZONE3 ON/OFF change	Z3ON<CR>
OFF	Z3OFF<CR>		
Z3MU	ON	ZONE3 OUTPUT MUTE ON/OFF change	Z3MUON<CR>
	OFF		Z3MUOFF<CR>
Z3CS	ST	ZONE3 Channel setting	Z3CSST<CR>
	MONO		Z3CSMONO<CR>
Z3CV	FL **	** : 38 to 62 by ASCII , 50=0dB	Z3CVFL 50<CR>
	FR **	** : 38 to 62 by ASCII , 50=0dB	Z3CVFR 50<CR>
Z3HPF	ON	ZONE3 HPF ON/OFF change	Z3HPFON<CR>
	OFF		Z3HPFOFF<CR>
Z3PS	BAS **	ZONE3 BASS change	Z3PSBAS 50<CR>
	TRE **	ZONE3 TEBLE change	Z3PSTRE 50<CR>
Z3SLP	OFF	ZONE3 SLEEP TIMER setting change	Z3SLPOFF<CR>
	***		Z3SLP120<CR>

The **PARAMETER** of Z3 **EVENT** : Uses two or three ASCII characters. (see page4 J) section)

**ANALOG TUNER Control(except AVR-4311CI North America model)**

<i>EVENT</i>	<i>PARAMETER</i>	function	example
TF	AN***** (6 digits)	TUNER Frequency change  --- ****.** kHz at AM band ****.** MHz at FM band	TFAN105000<CR>  (1050.00kHz at AM)
TP	AN**(PRESET No.)	TUNER PRESET change to No.**	TPANA1<CR> (PRESET No."A1")
	ANOFF	Change Preset Channel select OFF	TPANOFF<CR>
TM	ANAM	TUNER BAND , MODE change ---Band set to AM	TMANAM<CR>
	ANFM	---Band set to FM	TMANFM<CR>
	ANAUTO	---Tuning mode set to AUTO mode	TMANAUTO<CR>
	ANMANUAL	---Tuning mode set to MANUAL mode	TMANMANUAL<CR>

SIRIUS Control(North America model only)

<i>COMMAND</i>	<i>PARAMETER</i>	<i>function</i>	<i>example</i>
TF	ST*** (3 digits)	--- **:ST CH No.	TFST001<CR> (ST001 CH at SIRIUS TUNER)
	STPL ON	Parental Lock Status "ON"	TFSTPL ON<CR>
	STPL OFF	Parental Lock Status "OFF"	TFSTPL OFF<CR>
	STUL OK	Unlocking is successful	TFSTUL OK<CR>
	STUL NG	Unlocking is failed	TFSTUL NG<CR>
	STCH SUB	Subscribed channel	TFSTCH SUB<CR>
	STCH UNS	Unsubscribed channel	TFSTCH UNS<CR>
	STMP VAL	Valid Channel	TFSTMP VAL<CR>
	STMP INV	Invalid Channel	TFSTMP INV<CR>
	ST CHECK ANT	SIRIUS TUNER is not connected	TFST CHECK ANT<CR>
TP	ST** (PRESET No.)	SIRIUS PRESET change to No.**	TPSTAL<CR> (PRESET No."A1")
	STOFF	Change Preset Channel select OFF	TPSTOFF<CR>
ST	CH NAME ***** *** (20 digits)	SIRIUS CH NAME change	STCH NAME LONG CHANNEL NAM<CR>
	ARTIST ***** (36 digits)	SIRIUS ARTIST NAME change	STARTIST High and mighty color <CR>
	TITLE ***** (36 digits)	SIRIUS TITLE NAME change	STTITLE Memory Crysis <CR>
	COMPOSER ***** (36 digits)	SIRIUS COMPOSER NAME change	STCOMPOSER High and mighty color <CR>
	ID ***** (12 digits)	SIRIUS ID(SR000 Selected)	STID 123456789012<CR>
	SIGNAL EXCELLENT	SIRIUS ANTENNA SIGNAL STATUS change	ST SIGNAL EXCELLENT<CR>
	SIGNAL GOOD		ST SIGNAL GOOD<CR>
	SIGNAL WEAK		ST SIGNAL WEAK<CR>
SIGNAL NOSIGNAL	ST SIGNAL NOSIGNAL<CR>		

HD RADIO Control(AVR-4311CI North America model only)

<i>EVENT</i>	<i>PARAMETER</i>	<i>function</i>	<i>example</i>
TF	HD***** (6 digits)	--- *****.** kHz at AM band (>050000 is AM.) *****.** MHz at FM band (<050000 is FM.)	TPHD105000<CR> (1050.00kHz at AM)
	HDMC*(1 digit)	---HD Multi Cast CH change <b>(*:Multi Cast 1~8, Analog 0)</b>	TFHDMC2<CR>
TP	HD**(PRESET No.)	HD PRESET change to No.**	TPHDA1<CR> (PRESET No."A1")
TM	HDAM	HD RADIO BAND , MODE change ---Band set to AM	TMHDAM<CR>
	HDFM	---Band set to FM	TMHDFM<CR>
	HDAUTOHD	---Tuning mode set to AUTO-HD mode	TMHDAUTOHD<CR>
	HDAUTO	---Tuning mode set to AUTO mode	TMHDAUTO<CR>
	HDMANUAL	---Tuning mode set to MANUAL mode	TMHDMANUAL<CR>
HD	ST NAME(8 digits)	HD STATION NAME change	HDST NAME *****<CR>
	STL NAME (56 digits)	HD STATION LONG NAME change	HDSTL NAME (56 digits)<CR>
	SIG LEV * (1 digit)	HD ANTENNA SIGNAL STATUS change	HDSIG LEV 0<CR>
			HDSIG LEV 1<CR>
			HDSIG LEV 2<CR>
			HDSIG LEV 3<CR>
			HDSIG LEV 4<CR>
			HDSIG LEV 5<CR>
	HDSIG LEV 6<CR>		
	MLT CURRCH * (1 digit)	HD MULTI CAST CURRENT CH change	HDMLT CURRCH *<CR>
	MLT CAST CH (1 digits)	HD MULTI CAST CH NUMBER	HDMLT CAST CH *<CR>
	PTY(18 digits)	HD PROGRAM TYPE change	HDPTY (18 digits)<CR>
	ARTIST(40 digits)	HD ARTIST NAME change	HDARTIST (40 digits)<CR>
	TITLE(40 digits)	HD TITLE NAME change	HDTITLE (40 digits)<CR>
ALBUM(40 digits)	HD ALBUM NAME change	HDALBUM (40 digits)<CR>	
GENRE(23 digits)	HD GANRE change	HDGENRE (23 digits)<CR>	
MODE	HD MODE(ANALOG/DIGITAL)	HDMODE DIGITAL<CR>	
		HDMODE ANALOG<CR>	

Network Audio/USB /iPod DIRECT Extended Control

EVENT	PARAMETER	function	
NSA		Onscreen Display Information is Answered By the NSA Command.	
	0	Display Line1 Information	NSA0*****_?????<CR>
	1	Display Line3 Information	NSA1 *****_?????<CR>
	2	Display Line4 Information	NSA2 *****_?????<CR>
	3	Display Line5 Information	NSA3 *****_?????<CR>
	4	Display Line6 Information	NSA4 *****_?????<CR>
	5	Display Line7 Information	NSA5 *****_?????<CR>
	6	Display Line8 Information	NSA6 *****_?????<CR>
	7	Display Line9 Information	NSA7*****_?????<CR>
	8	Display Line10 Information	NSA8*****_?????<CR> *:Character Length MAX96 _:Null ?:Exclusion(The character after Null should be disregarded) :Cursor&Playable Music Information Data(1Byte) Bit1:Playable Music Bit2:Directory Bit4:CURSOR SELECT=1 Bit7:Picture Bit3,5,6,8:Don't Care
			NSA0Now Playing USB_????<CR> NSA1 Come Away With Me_???<CR> NSA2 Norah Jones_????????<CR> NSA3 _????????????????<CR> NSA4 _????????????????<CR> NSA5 00:11 100%_????????<CR> NSA6 _????????????????<CR> NSA7_????????????????<CR> NSA8_????????????????<CR>

<b>EVENT</b>	<b>PARAMETER</b>	<b>function</b>	
NSE		Onscreen Display Information(mServer/iRadio) is Answered By the NSE Command.	
	0	Display Line1 Information	NSE0*****_?????<CR>
	1	Display Line3 Information	NSE1 *****_?????<CR>
	2	Display Line4 Information	NSE2 *****_?????<CR>
	3	Display Line5 Information	NSE3 *****_?????<CR>
	4	Display Line6 Information	NSE4 *****_?????<CR>
	5	Display Line7 Information	NSE5 *****_?????<CR>
	6	Display Line8 Information	NSE6 *****_?????<CR>
	7	Display Line9 Information	NSE7*****_?????<CR>
8	Display Line10 Information	NSE8*****_?????<CR> *: <u>UTF-8 CODE</u> Character(MAX96byte) _:Null ?: Don't Care (The character after Null should be disregarded) :Cursor&Playable Music Information Data(1Byte) Bit1:Playable Music =1 Bit2:Directory Bit4:CURSOR SELECT=1 Bit7:Picture Bit5,6,8:Don't Care *****_?????:96byte Fixed	
		<example> NSE0Now Playing USB_????<CR> NSE1 Come Away With Me_???<CR> NSE2 Norah Jones_????????<CR> NSE3 _????????????????<CR> NSE4 _????????????????<CR> NSE5 00:11 100%_????????<CR> NSE6 _????????????????<CR> NSE7_????????????????<CR> NSE8_????????????????<CR>	



## iPod Extended Control

iPod Dock which AVR-4311 can connect with is ASD-1R/11R.

<i>EVENT</i>	<i>PARAMETER</i>	function	
IPA		Onscreen Display Information is Answered By the IPA Command.	
	0	Display Line1 Information	IPA0*****_??<CR>
	1	Display Line3 Information	IPA1 *****_??<CR>
	2	Display Line4 Information	IPA2 *****_??<CR>
	3	Display Line5 Information	IPA3 *****_??<CR>
	4	Display Line6 Information	IPA4 *****_??<CR>
	5	Display Line7 Information	IPA5 *****_??<CR>
	6	Display Line8 Information	IPA6 *****_??<CR>
	7	Display Line9 Information	IPA7 *****_??<CR>
	8	Display Line10 Information	IPA8#*****_??<CR>
	9	Display Line11 Information	IPA9*****_??<CR>
			*:Character Length MAX96 _:Null ?:Exclusion(The character after Null should be disregarded) :Cursor Information Data(1Byte) Bit1:Playable Music/Video=1 Bit2:Directory=1 Bit3:Don't Care Bit4:CURSOR SELECT=1 Bit5,6,7,8:Don't Care #:Bit1-8:Don't Care

<b>EVENT</b>	<b>PARAMETER</b>	function	
IPA			<pre> &lt;example1&gt; IPA0Artist????????????????????&lt;CR&gt; IPA1  Ana Caram_????????????????&lt;CR&gt; IPA2  Badi Assad_????????????????&lt;CR&gt; IPA3  Christy Baron_????????????&lt;CR&gt; IPA4  Marta Gomez_????????????????&lt;CR&gt; IPA5  Rebecca Pidgeon_????????&lt;CR&gt; IPA6  Sara K_????????????????????&lt;CR&gt; IPA7  Valerie Joyce_????????????&lt;CR&gt; IPA8# SFL Songs  RPT All_???&lt;CR&gt; IPA9  [  2/   6]_????????????&lt;CR&gt;  &lt;example2&gt; IPA0Now Playing iPod_????????&lt;CR&gt; IPA1  A HARD DAY'S NIGHT._??&lt;CR&gt; IPA2  /The Beatles_????????????&lt;CR&gt; IPA3  _????????????????????????&lt;CR&gt; IPA4  A HARD DAY'S NIGHT_???&lt;CR&gt; IPA5   00:04_????????????????&lt;CR&gt; IPA6  _????????????????????????&lt;CR&gt; IPA7  _????????????????????????&lt;CR&gt; IPA8# SFL Songs  RPT All_???&lt;CR&gt; IPA9????????????????????????&lt;CR&gt; </pre>

<b>EVENT</b>	<b>PARAMETER</b>	<b>function</b>	
IPE		Onscreen Display Information(iPod) is Answered By the IPA Command.	
	0	Display Line1 Information	IPE0*****_??<CR>
	1	Display Line3 Information	IPE1 *****_??<CR>
	2	Display Line4 Information	IPE2 *****_??<CR>
	3	Display Line5 Information	IPE3 *****_??<CR>
	4	Display Line6 Information	IPE4 *****_??<CR>
	5	Display Line7 Information	IPE5 *****_??<CR>
	6	Display Line8 Information	IPE6 *****_??<CR>
	7	Display Line9 Information	IPE7 *****_??<CR>
	8	Display Line10 Information	IPE8#*****_??<CR>
	9	Display Line11 Information	IPE9*****_??<CR>
			*:UTF-8 CODE Character(MAX96byte) _:Null ?:Exclusion(The character after Null should be disregarded) :Cursor Information Data(1Byte) Bit1:Playable Music/Video=1 Bit2:Directory=1 Bit3:Don't Care Bit4:CURSOR SELECT=1 Bit5-8:Don't Care #:Bit1-8:Don't Care

<i>EVENT</i>	<i>PARAMETER</i>	function	
IPE			<pre> &lt;example1&gt; IPE0Artist????????????????????&lt;CR&gt; IPE1  Ana Caram_????????????????&lt;CR&gt; IPE2  Badi Assad_????????????????&lt;CR&gt; IPE3  Christy Baron_????????????&lt;CR&gt; IPE4  Marta Gomez_??????????????&lt;CR&gt; IPE5  Rebecca Pidgeon_????????&lt;CR&gt; IPE6  Sara K_????????????????????&lt;CR&gt; IPE7  Valerie Joyce_????????????&lt;CR&gt; IPE8# SFL Songs  RPT All_???&lt;CR&gt; IPE9  [  2/   6]_????????????&lt;CR&gt;  &lt;example2&gt; IPE0Now Playing iPod_????????&lt;CR&gt; IPE1  A HARD DAY'S NIGHT._??&lt;CR&gt; IPE2  /The Beatles_????????????&lt;CR&gt; IPE3  _????????????????????????&lt;CR&gt; IPE4  A HARD DAY'S NIGHT_???&lt;CR&gt; IPE5   00:04_????????????????????&lt;CR&gt; IPE6  _????????????????????????&lt;CR&gt; IPE7  _????????????????????????&lt;CR&gt; IPE8# SFL Songs  RPT All_???&lt;CR&gt; IPE9_????????????????????????&lt;CR&gt; </pre>

**Remote Lock/Panel Lock**

<i>EVENT</i>	<i>PARAMETER</i>	<i>function</i>	<i>example</i>
SY	REMOTE LOCK ON	REMOTE CONTROL LOCK ON/OFF	SYREMOTE LOCK ON<CR>
	REMOTE LOCK OFF		SYREMOTE LOCK OFF<CR>
	PANEL LOCK ON	PANEL BUTTON(Except MASTER VOL.)CONTROL LOCK ON	SYPANEL LOCK ON<CR>
	PANEL+V LOCK ON	PANEL BUTTON & MASTER VOL. CONTROL LOCK ON	SYPANEL+V LOCK ON<CR>
	PANEL LOCK OFF	PANEL BUTTUM & MASTER VOL. CONTROL LOCK OFF	SYPANEL LOCK OFF<CR>

**UPGRADE ID Display**

<i>COMMAND</i>	<i>PARAMETER</i>	<i>function</i>	<i>example</i>
UG	IDN *****	ID Number for UPGRADE is displayed on FL Display *****:12-digit ID Number	UGIDN *****<CR>
	IDN NG	Can't get ID number from DPMS	UGIDN NG<CR>