

# DENON AVR control protocol

Ver.7.4.0

Application model : AVR-2112CI/AVR-1912

Application terminal: RS-232C

Ethernet

## 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

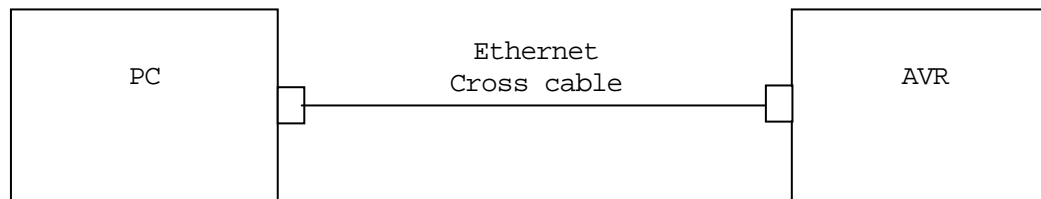
Communication data length : 135 bytes (maximum)

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| 7.5.0   | 15.Apr.'11 | Original |      |
|         |            |          |      |
|         |            |          |      |
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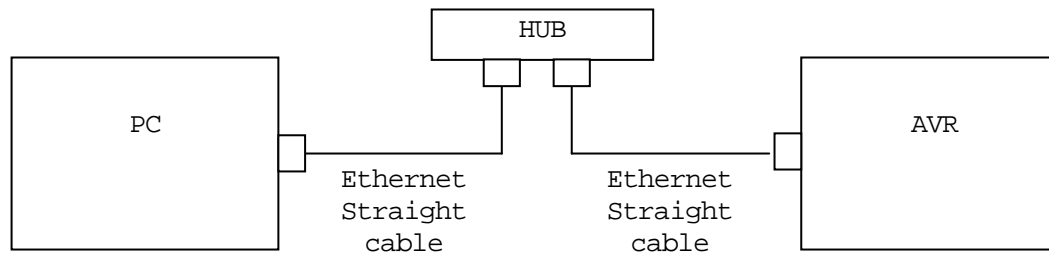
## . Ethernet

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-2112CI/AVR-1912

### **>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-2112CI/AVR-1912 Connected in a network.
  - "OFF"--- Use this setting when not using the AVR-2112CI/AVR-1912 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 came 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>               |
| <b>-80.5dB :</b>             | <b>MV995&lt;CR&gt;</b> |
| ---                          | 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 Lch  | CVFL DOWN<CR>  |
|         | FL **     | ** : 38 to 62 by ASCII , 50=0dB                                 | CVFL 50<CR>    |
|         | FR UP     |   | CVFR UP<CR>    |
|         | FR DOWN   | ---FRONT Rch  | CVFR DOWN<CR>  |
|         | FR **     | ** : 38 to 62 by ASCII , 50=0dB                                 | CVFR 50<CR>    |
|         | C UP      |   | CVC UP<CR>     |
|         | C DOWN    | ---CENTERch   | CVC DOWN<CR>   |
|         | C **      | ** : 38 to 62 by ASCII , 50=0dB                                 | CVC 50<CR>     |
|         | SW UP     |   | CVSW UP<CR>    |
|         | SW DOWN   | ---SUBWOOFERch  | CVSW DOWN<CR>  |
|         | SW **     | ** : 38 to 62 by ASCII , 50=0dB, 00=OFF                         | CVSW 50<CR>    |
|         | SL UP     |   | CVSL UP<CR>    |
|         | SL DOWN   | ---SURROUND Lch   | CVSL DOWN<CR>  |
|         | SL **     | ** : 38 to 62 by ASCII , 50=0dB                                 | CVSL 50<CR>    |
|         | SR UP     |   | CVSR UP<CR>    |
|         | SR DOWN   | ---SURROUND Rch   | CVSR DOWN<CR>  |
|         | SR **     | ** : 38 to 62 by ASCII , 50=0dB                                 | CVSR 50<CR>    |
|         | SBL UP    | ---SURROUND BACK Lch (SBch 2SP)                                 | CVSBL UP<CR>   |
|         | SBL DOWN  |   | CVSBL DOWN<CR> |
|         | SBL **    | ** : 38 to 62 by ASCII , 50=0dB                                 | CVSBL 50<CR>   |
|         | SBR UP    | ---SURROUND BACK Rch (SBch 2SP)                                 | CVSBR UP<CR>   |
|         | SBR DOWN  |   | CVSBR DOWN<CR> |
|         | SBR **    | ** : 38 to 62 by ASCII , 50=0dB                                 | CVSBR 50<CR>   |

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

| COMMAND | PARAMETER    | function                           | example                  |
|---------|--------------|------------------------------------|--------------------------|
| CV      | SB UP        | ---SURROUND BACKch (SBch 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 Lch                | CVFHL DOWN<CR>           |
|         | FHL **       | ** : 38 to 62 by ASCII , 50=0dB    | CVFHL 50<CR>             |
|         | FHR UP       |                                    | CVFHR UP<CR>             |
|         | FHR DOWN     | ---FRONT HEIGHT Rch                | CVFHR DOWN<CR>           |
|         | FHR **       | ** : 38 to 62 by ASCII , 50=0dB    | CVFHR 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      | CD           | Select INPUT source                | SICD<CR>                 |
|         | TUNER        |                                    | SITUNER<CR>              |
|         | DVD          |                                    | SIDVD<CR>                |
|         | BD           |                                    | SIBD<CR>                 |
|         | TV           |                                    | SITV<CR>                 |
|         | SAT/CBL      |                                    | SISAT/CBL<CR>            |
|         | GAME         |                                    | SIGAME<CR>               |
|         | <b>GAME2</b> |                                    | <b>SIGAME2&lt;CR&gt;</b> |
|         | V.AUX        |                                    | SIV.AUX<CR>              |
|         | DOCK         |                                    | SIDOCK<CR>               |
|         | IPOD         | Select iPod (dock or USB) and PLAY | SIIPOD<CR>               |

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



| <b>COMMAND</b> | <b>PARAMETER</b> | <b>function</b>   | <b>example</b>         |
|----------------|------------------|---|------------------------|
| SI             | NET/USB          |   | SINET/USB<CR>          |
|                | RHAPSODY         | (North America model Only)                                    | SIRHAPSODY<CR>         |
|                | NAPSTER          | (North America & Europe model Only)                           | SINAPSTER<CR>          |
|                | PANDORA          | (North America model Only)                                    | SIPANDORA<CR>          |
|                | LASTFM           | (Europe model Only)   | SILASTFM<CR>           |
|                | FLICKR           |   | SIFLICKR<CR>           |
|                | FAVORITES        |   | SIFAVORITES<CR>        |
|                | IRADIO           |   | SIIRADIO<CR>           |
|                | SERVER           |   | SISERVER<CR>           |
|                | USB/IPOD         | Select USB or iPod Direct                                     | SIUSB/IPOD<CR>         |
|                | USB              | Select INPUT source NET/USB and USB Start Playback            | SIUSB<CR>              |
|                | IPD              | Select INPUT source NET/USB and iPod Direct Start Playback    | SIIPD<CR>              |
|                | <b>IRP</b>       | Select INPUT source NET/USB and Internet Radio Start Playback | <b>SIIRP&lt;CR&gt;</b> |
|                | <b>FVP</b>       | Select INPUT source NET/USB and Favorites Start Playback      | <b>SIFVP&lt;CR&gt;</b> |
|                | ?                | Return SI Status  | SI?<CR>                |
| ZM             | ON               | MAIN ZONE ON/OFF change                                       | ZMON<CR>               |
|                | OFF              |   | ZMOFF<CR>              |
|                | ?                | Return ZM Status  | ZM?<CR>                |

| COMMAND | PARAMETER    | 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>             |
|         | ?            | 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>                |
|         | BD           |  | SVBD<CR>                 |
|         | TV           |  | SVTV<CR>                 |
|         | SAT/CBL      |  | SVSAT/CBL<CR>            |
|         | GAME         |  | SVGAME<CR>               |
|         | <b>GAME2</b> |  | <b>SVGAME2&lt;CR&gt;</b> |
|         | V.AUX        |  | SVV.AUX<CR>              |
|         | DOCK         |  | SVDOCK<CR>               |
|         | SOURCE       | VIDEO SELECT mode cancel                       | SVSOURCE<CR>             |
|         | ?            | Return SV Status                               | SV?<CR>                  |
| SLP     | OFF          | MAIN ZONE SLEEP TIMER setting                  | SLPOFF<CR>               |
|         | ***          | ***:001 to 120 by ASCII , 010=10min            | SLP120<CR>               |
|         | ?            | Return SLP Status                              | SLP?<CR>                 |

| COMMAND | PARAMETER     | function                     | example             |
|---------|---------------|------------------------------|---------------------|
| MS      | MOVIE         | Select SURROUND mode         | MSMOVIE<CR>         |
|         | MUSIC         |                              | MSMUSIC<CR>         |
|         | GAME          |                              | MSGAME<CR>          |
|         | DIRECT        |                              | MSDIRECT<CR>        |
|         | PURE DIRECT   |                              | MSPURE DIRECT<CR>   |
|         | STEREO        |                              | MSSTEREO<CR>        |
|         | STANDARD      |                              | MSSTANDARD<CR>      |
|         | DOLBY DIGITAL |                              | MSDOLBY DIGITAL<CR> |
|         | DTS SUROUND   |                              | MSDTS SURROUND<CR>  |
|         | MCH STEREO    | ---5/7CH STEREO mode         | MSMCH STEREO<CR>    |
|         | ROCK ARENA    |                              | MSROCK ARENA<CR>    |
|         | JAZZ CLUB     |                              | MSJAZZ CLUB<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> | function                           | example         |
|----------------|------------------|------------------------------------|-----------------|
| VS             | 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>   |
|                | VPMAUTO          | Set Video Processing Mode to AUTO  | VSVPM AUTO<CR>  |
|                | VPMGAME          | Set Video Processing Mode to GAME  | VSVPMGAME<CR>   |
|                | VPMMOVI          | Set Video Processing Mode to MOVIE | VSVPMMOVI<CR>   |
|                | VPM ?            | Return VSVPM Status                | VSVPM ?<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<br>(This parameter can change DOLBY PL2,PL2x,NEO:6 mode.)<br>---SB=ON:PL2x mode / SB=OFF:PL2 mode<br>--- GAME can change DOLBY PL2 & PL2x mode<br>--- 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>        |
|         | FH:ON          | FRONT HEIGHT ON/OFF  | PSFH:ON<CR>          |
|         | FH:OFF         |  | PSFH:OFF<CR>         |
|         | FH: ?          | Return PSFH: Status  | PSFH: ?<CR>          |
|         | PHG LOW        | PL z HEIGHT GAIN direct change   | PSPHG LOW<CR>        |
|         | PHG MID        |  | PSPHG MID<CR>        |
|         | PHG HI         |  | PSPHG HI<CR>         |
|         | PHG ?          | Return PSPHG Status  | PSPHG ?<CR>          |

| <b>COMMAND</b> | <b>PARAMETER</b> | <b>function</b>                     | <b>example</b>        |
|----------------|------------------|-------------------------------------|-----------------------|
| PS             | MULTEQ:AUDYSSEY  | MultEQ XT/MultEQ mode direct 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>      |
|                | MULTEQ: ?        | Return PSMULTEQ: Status             | PSMULTEQ: ?<CR>       |
|                | DYNEQ ON         | Dynamic EQ = ON                     | PSDYNEQ ON<CR>        |
|                | DYNEQ OFF        | Dynamic EQ = OFF                    | PSDYNEQ OFF<CR>       |
|                | DYNEQ ?          | Return PSDYNEQ Status               | PSDYNEQ ?<CR>         |
|                | REFLEV 0         | Reference Level Offset=0dB          | PSREFLEV 0<CR>        |
|                | REFLEV 5         | Reference Level Offset=5dB          | PSREFLEV 5<CR>        |
|                | REFLEV 10        | Reference Level Offset=10dB         | PSREFLEV 10<CR>       |
|                | REFLEV 15        | Reference Level Offset=15dB         | PSREFLEV 15<CR>       |
|                | REFLEV ?         | Return PSREFLEV Status              | PSREFLEV ?<CR>        |
|                | DYNVOL NGT       | Dynamic Volume = Midnight           | PSDYNVOL NGT<CR>      |
|                | DYNVOL EVE       | Dynamic Volume = Evening            | PSDYNVOL EVE<CR>      |
|                | DYNVOL DAY       | Dynamic Volume = Day                | PSDYNVOL DAY<CR>      |
|                | DYNVOL ?         | Return PSDYNVOL Status              | PSDYNVOL ?<CR>        |

| COMMAND | PARAMETER | function   | example        |
|---------|-----------|--|----------------|
| PS      | BAS UP    | BASS UP/DOWN , direct change to **dB                           | PSBAS UP<CR>   |
|         | BAS DOWN  | ** : 00 to 99 by ASCII , 50=0dB                                | PSBAS DOWN<CR> |
|         | BAS **    | ---AVR-2112CI/AVR-1912 can be operated from -6 to +6(44 to 56) | PSBAS 50<CR>   |
|         | BAS ?     | Return PSBAS Status  | PSBAS ?<CR>    |
|         | TRE UP    | TREBLE UP/DOWN , direct change to **dB                         | PSTRE UP<CR>   |
|         | TRE DOWN  | ** : 00 to 99 by ASCII , 50=0dB                                | PSTRE DOWN<CR> |
|         | TRE **    | ---AVR-2112CI/AVR-1912 can be operated from -6 to +6(44 to 56) | 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 ?     |  | PSDRC ?<CR>    |
|         | 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 ?     |  | PSDCO ?<CR>    |
|         | LFE UP    | LFE UP/DOWN , direct change to **dB                            | PSLEE UP<CR>   |
|         | LFE DOWN  | ** : 00 to 99 by ASCII , 00=0dB, 10=-10dB                      | PSLFE DOWN<CR> |
|         | LFE **    | ---AVR-2112CI/AVR-1912 can be operated from 0 to -10           | PSLFE 10<CR>   |
|         | LFE ?     | Return PSLFE Status  | PSLFE ? <CR>   |
|         | EFF UP    | EFFECT UP/DOWN , EFFECT LEVEL direct change to **dB            | PSEFF UP<CR>   |
|         | EFF DOWN  | ** : 00 to 99 by ASCII , 00=0dB, 10=10dB                       | PSEFF DOWN<CR> |
|         | EFF **    | ---AVR-2112CI/AVR-1912 can be operated from 1 to 15            | PSEFF 10<CR>   |
|         | EFF ?     | Return PSEFF Status  | PSEFF ?<CR>    |
|         | DEL UP    | DELAY UP/DOWN , direct change to ***dB                         | PSDEL UP<CR>   |
|         | DEL DOWN  | *** : 000 to 999 by ASCII , 000=0ms, 300=300ms                 | PSDEL DOWN<CR> |
|         | DEL ***   | ---AVR-2112CI/AVR-1912 can be operated from 0 to 300           | PSDEL ***<CR>  |
|         | DEL ?     | Return PSDEL Status  | PSDEL ?<CR>    |

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

| COMMAND | PARAMETER  | function   | example          |
|---------|------------|--|------------------|
| PS      | AFD ON     | AFDM ON/OFF  | PSAFD ON<CR>     |
|         | AFD OFF    |  | PSAFD OFF<CR>    |
|         | AFD ?      | Return PSAFD Status                                    | PSAFD ?<CR>      |
|         | PAN ON     | PANORAMA ON/OFF  | PSPAN ON<CR>     |
|         | PAN OFF    |  | PSPAN OFF<CR>    |
|         | PAN ?      | Return PSPAN Status                                    | PSPAN ?<CR>      |
|         | DIM UP     | DIMENSION UP/DOWN , direct change to **dB              | PSDIM UP<CR>     |
|         | DIM DOWN   | ** : 00 to 99 by ASCII , 00=0,                         | PSDIM DOWN<CR>   |
|         | DIM **     | ---AVR-2112CI/AVR-1912 can be operated from 0 to 6     | PSDIM **<CR>     |
|         | DIM ?      | Return PSDIM Status                                    | PSDIM ?<CR>      |
|         | CEN UP     | CENTER WIDTH UP/DOWN , direct change to **dB           | PSCEN UP<CR>     |
|         | CEN DOWN   | ** : 00 to 99 by ASCII , 00=0                          | PSCEN DOWN<CR>   |
|         | CEN **     | ---AVR-2112CI/AVR-1912 can be operated from 0 to 7     | PSCEN 07<CR>     |
|         | CEN ?      | Return PSCEN Status                                    | PSCEN ?<CR>      |
|         | CEI UP     | CENTER IMAGE UP/DOWN , direct change to **dB           | PSCEI UP<CR>     |
|         | CEI DOWN   | ** : 00 to 99 by ASCII , 00=0.0                        | PSCEI DOWN<CR>   |
|         | CEI **     | ---AVR-2112CI/AVR-1912 can be operated from 0.0 to 1.0 | PSCEI 10<CR>     |
|         | CEI ?      | Return PSCEI Status                                    | OSCEI ?<CR>      |
|         | 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                                    | PSRSZ ?<CR>      |
|         | DELAY UP   | AUDIO DELAY UP/DOWN , direct change to ***dB           | PSDELAY UP<CR>   |
|         | DELAY DOWN | *** : 000 to 999 by ASCII , 000=0ms, 200=200ms         | PSDELAY DOWN<CR> |
|         | DELAY ***  | ---AVR-2112CI/AVR-1912 can be operated from 0 to 200   | PSDELAY 200<CR>  |
|         | DELAY ?    | Return PSDELAY Status                                  | PSDELAY ?<CR>    |

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



| <b>COMMAND</b> | <b>PARAMETER</b> | function                     | example          |
|----------------|------------------|------------------------------|------------------|
| PS             | 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>     |
|                | FRONT SPA        | FRONT SPEAKER direct change  | PSFRONT SPA<CR>  |
|                | FRONT SPB        |                              | PSFRONT SPB<CR>  |
|                | FRONT SPA+B      |                              | PSFRONT A+B<CR>  |
|                | FRONT?           | Return PSFRONT Status        | PSFRONT?<CR>     |

| COMMAND | PARAMETER | function  | example         |
|---------|-----------|---|-----------------|
| Z2      | CD        | ZONE2 mode set , and select source                            | Z2CD<CR>        |
|         |           | ---The name of PARAMETER is                                   |                 |
|         | USB/IPOD  | the same as that of the time of SI COMMAND.                   | Z2USB/IPOD<CR>  |
|         | USB       | Select ZONE2 source NET/USB and USB Start Playback            | Z2USB<CR>       |
|         | IPD       | Select ZONE2 source NET/USB and iPod Direct Start Playback    | Z2IPD<CR>       |
|         | IRP       | Select ZONE2 source NET/USB and Internet Radio Start Playback | Z2IRP<CR>       |
|         | FVP       | Select ZONE2 source NET/USB and Favorites Start Playback      | Z2FVP<CR>       |
|         | SOURCE    | ZONE2 mode cancel   | Z2SOURCE<CR>    |
|         | UP        | ZONE2 VOLUME UP/DOWN , direct change to **dB                  | 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>       |
| Z2CV    | FL UP     | ZONE2 CHANNEL VOLUME UP/DOWN , direct change to **dB          | Z2CVFL UP<CR>   |
|         | FL DOWN   |   | Z2CVFL DOWN<CR> |
|         | FL **     |   | Z2CVFL 50<CR>   |
|         | FR UP     | ZONE2 CHANNEL VOLUME UP/DOWN , direct change to **dB          | Z2CVFR UP<CR>   |
|         | FR DOWN   |   | Z2CVFR DOWN<CR> |
|         | FR **     |   | Z2CVFR 50<CR>   |
|         | ?         | Return Z2CV Status  | Z2CV?<CR>       |

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

**NOTE:** Z2 COMMAND is valid when "ZONE2" is selected with "Amp Assign" at AVR-1912.

Z2\*\*(volume), Z2CV COMMAND is valid when "ZONE2" is selected with "Amp Assign" at AVR-2112CI.

| COMMAND | PARAMETER     | function                           | example             |
|---------|---------------|------------------------------------|---------------------|
| 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>       |

**NOTE:** Z2 COMMAND is valid when "ZONE2" is selected with "Amp Assign" at AVR-1912.

## ANALOG TUNER Control

| COMMAND | PARAMETER             | function   | example                              |
|---------|-----------------------|--|--------------------------------------|
| TF      | ANUP                  | TUNER Frequency UP/DOWN  | TFANUP<CR>                           |
|         | ANDOWN                |  | TFANDOWN<CR>                         |
|         | AN*****<br>(6 digits) | --- ****.* kHz at AM band (>050000 is AM.)<br>****.* MHz at FM band (<050000 is FM.) | TFAN105000<CR><br>(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**<br>(PRESET No.)  |  | TPANA1<CR><br>(PRESET No."A1")       |
|         | AN?                   | Return TP Status   | TPAN?<CR>                            |
|         | ANMEM                 | TUNER PRESET MEMORY  | TPANMEM<CR>                          |
|         | <b>ANMEM**</b>        | TUNER PRESET MEMORY, Preset stored at No.**<br><b>** : A1-G8</b>                     | <b>TPANMEM**&lt;CR&gt;</b>           |
| TM      | ANAM                  | TUNER BAND , MODE Select<br>---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.

## Network Audio/USB /iPod DIRECT Extended Control

| COMMAND | PARAMETER | function  | example   |
|---------|-----------|---|---|
| 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)<br>"Play/Pause" Control(iPod Direct)                             | NS9A<CR>  |
|         | 9B        | "Pause" Control<br>"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)<br>"Shuffle Songs" Control (iPod Direct Only) | NS9K<CR>  |
|         | 9M        | "Random Off" (USB/mServer/Rhapsody/Napster)<br>"Shuffle Off" Control (iPod Direct Only)             | NS9M<CR>  |
|         | 9W        | Toggle Switch "Browse Mode/Remote Mode Control<br>(iPod Direct Only)                                | NS9W<CR>  |
|         | 9X        | "Page Next" Control   | NS9X<CR>  |
|         | 9Y        | "Page Previous" Control   | NS9Y<CR>  |
|         | PT        | Enter/Exit PARTY MODE   | NSPT<CR>  |
| NSA     |           | Return Onscreen Display Information List<br>(ASCII CODE Character)                                  | NSA<CR><br>(Return NSA0-NSA8,Refer to Page 38 ) |
| NSE     |           | Request Onscreen Display Information List<br>(UTF-8 CODE Character)                                 | NSE<CR><br>(Return NSE0-NSE8,Refer to Page 39 ) |
| NSD     | *         | "Direct Character Search"(iRadio/mServer/USB/Rhapsody only)   | NSD0<CR><br>(*:0-9,A-Z)                         |

| COMMAND | PARAMETER           | function  | example      |
|---------|---------------------|---|--------------|
| NS      | P1                  | Preset1-3 Call  | NSP1<CR>     |
|         | P2                  |   | NSP2<CR>     |
|         | P3                  |   | NSP3<CR>     |
|         | P1 MEM              | Preset 1-3 Memory   | NSP1 MEM<CR> |
|         | P2 MEM              |   | NSP2 MEM<CR> |
|         | P3 MEM              |   | NSP3 MEM<CR> |
|         | P                   | Return Preset 1-3 status (UTF-8)                                  | NSP<CR>      |
|         | B**<br>(PRESET No.) | Preset Call<br>** : 00-55 (00:A1/55:G8)                           | NSB00<CR>    |
|         | C**<br>(PRESET No.) | Preset Memory, Preset stored at No.**<br>** : 00-55 (00:A1/55:G8) | NSC00<CR>    |
|         | H                   | Return Preset Channel A1-G8 status (UTF-8)                        | NSH<CR>      |

## iPod dock Extended Control

iPod Dock which AVR-2112CI/AVR-1912 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<br>(ASCII CODE Character)        | IPA<CR><br>(Return IPA0-IPA9, Refer to Page 41-42 ) |
| IPE     |           | Request Onscreen Display Information List(iPOD)<br>(UTF-8 CODE Character) | IPE<CR><br>(Return IPE0-IPE9, Refer to Page 43-44 ) |

### Cursor/Enter/Menu(Setup)

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

## EVENT(or RESPONSE) and PARAMETER list

| EVENT | PARAMETER | function  | example       |
|-------|-----------|---|---------------|
| PW    | ON        | POWER ON/STANDBY change   | PWON<CR>      |
|       | STANDBY   |   | PWSTANDBY<CR> |
| MV    | **        | MASTER VOLUME change , **:00 to 99 by ASCII<br>98 = 18dB(MAX)<br>80 = 0dB<br>00 = -80dB<br><b>995 = -80.5dB</b><br>99 = --- (MIN)   | MV80<CR>      |
| CV    | FL **     | CHANNEL VOLUME change , **:00,38 to 62 by ASCII<br>62 = +12dB(MAX)<br>50 = 0dB<br>38 = -12dB(MIN)<br>00 = OFF (define ONLY SWch in DIRECT mode.)<br><br>(at SBch 2SP)<br>(at SBch 2SP)<br>(at SBch 1SP) | CVFL 50<CR>   |
|       | FR **     |   | CVFR 50<CR>   |
|       | C **      |   | CVC 50<CR>    |
|       | SW **     |   | CVSW 50<CR>   |
|       | SL **     |   | CVSL 50<CR>   |
|       | SR **     |   | CVSR 50<CR>   |
|       | SBL **    |   | CVSBL 50<CR>  |
|       | SBR **    |   | CVSBR 50<CR>  |
|       | SB **     |   | CVSB 50<CR>   |
|       | FHL **    |   | CVFHL 50<CR>  |
|       | FHR **    |   | CVFHR 50<CR>  |
|       |           |   |               |
| MU    | ON        | OUTPUT MUTE ON/OFF change   | MUON<CR>      |
|       | OFF       |   | MUOFF<CR>     |
| SI    | CD        | INPUT source change   | SICD<CR>      |
|       | TUNER     |   | SITUNER<CR>   |
|       | DVD       |   | SIDVD<CR>     |
|       | BD        |   | SIBD<CR>      |
|       | TV        |   | SITV<CR>      |
|       | SAT/CBL   |   | SISAT/CBL<CR> |
|       | GAME      |   | SIGAME<CR>    |
|       |           |   |               |

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

| <b>EVENT</b> | <b>PARAMETER</b> | function   | example                  |
|--------------|------------------|--|--------------------------|
| SI           | <b>GAME2</b>     | (North America model Only)<br>(North America & Europe model Only)<br>(North America model Only)<br>(Europe model Only) | <b>SIGAME2&lt;CR&gt;</b> |
|              | V.AUX            |  | SIV.AUX<CR>              |
|              | DOCK             |  | SIDOCK<CR>               |
|              | IPOD             |  | SIIPOD<CR>               |
|              | NET/USB          |  | SINET/USB                |
|              | RHAPSODY         |  | SIRHAPSODY<CR>           |
|              | NAPSTER          |  | SINAPSTER<CR>            |
|              | PANDORA          |  | SIPANDORA<CR>            |
|              | LASTFM           |  | SILASTFM<CR>             |
|              | FLICKR           |  | SIFLICKR<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>                |
|              | <b>IRP</b>       |  | <b>SIIRP&lt;CR&gt;</b>   |
|              | <b>FVP</b>       |  | <b>SIFVP&lt;CR&gt;</b>   |
| ZM           | ON               | MAIN ZONE ON/OFF change  | ZMON<CR>                 |
|              | OFF              |  | ZMOFF<CR>                |

| <b>EVENT</b> | <b>PARAMETER</b> | function                             | example                  |
|--------------|------------------|--------------------------------------|--------------------------|
| SD           | AUTO             | INPUT mode change                    | SDAUTO<CR>               |
|              | HDMI             |                                      | SDHDMI<CR>               |
|              | DIGITAL          |                                      | SDDIGITAL<CR>            |
|              | ANALOG           |                                      | SDANALOG<CR>             |
|              | ARC              | ARC playing                          | SDARC<CR>                |
|              | NO               | No Input                             | SDNO<CR>                 |
| DC           | AUTO             | DIGITAL INPUT mode change            | DCAUTO<CR>               |
|              | PCM              |                                      | DCPCM<CR>                |
|              | DTS              |                                      | DCDTS<CR>                |
| SV           | DVD              | VIDEO SELECT mode source change      | SVDVD<CR>                |
|              | BD               |                                      | SVBD<CR>                 |
|              | TV               |                                      | SVTV<CR>                 |
|              | SAT/CBL          |                                      | SVSAT/CBL<CR>            |
|              | GAME             |                                      | SVGAME<CR>               |
|              | <b>GAME2</b>     |                                      | <b>SVGAME2&lt;CR&gt;</b> |
|              | V.AUX            |                                      | SVV.AUX<CR>              |
|              | DOCK             |                                      | SVDOCKCR>                |
|              | SOURCE           |                                      | SVSOURCE<CR>             |
|              |                  |                                      |                          |
| SLP          | OFF              | MAIN ZONE SLEEP TIMER setting change | SLPOFF<CR>               |
|              | ***              |                                      | SLP120<CR>               |

| <b>EVENT</b> | <b>PARAMETER</b>     | <b>function</b>      | <b>example</b>         |
|--------------|----------------------|----------------------|------------------------|
| MS           | DIRECT               | SURROUND mode change | MSDIRECT<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<br>+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<br>+PL2X C   |                      | MSDOLBY D+PL2X C<CR>   |
|              | DOLBY D<br>+PL2X M   |                      | MSDOLBY D+PL2X M<CR>   |
|              | DOLBY D<br>+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>       |
|              | DTS+PL2Z H           |                      | MSDTS+PL2Z H<CR>       |

| <b>EVENT</b> | <b>PARAMETER</b> | <b>function</b>      | <b>example</b>         |
|--------------|------------------|----------------------|------------------------|
|              | DTS+NEO:6        | ---5/7CH STEREO mode | MSDTS+NEO:6<CR>        |
|              | DTS96/24         |                      | MSDTS96/24<CR>         |
|              | DTS96 ES MTRX    |                      | MSDTS96 ES MTRX<CR>    |
|              | MCH STEREO       |                      | MSMCH STEREO<CR>       |
|              | ROCK ARENA       |                      | MSROCK ARENA<CR>       |
|              | JAZZ CLUB        |                      | MSJAZZ CLUB<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>      |
|              | 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><i>EVENT</i></b> | <b><i>PARAMETER</i></b> | <b>function</b>                                   | <b>example</b> |
|---------------------|-------------------------|---|----------------|
| MS                  | 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><i>EVENT</i></b> | <b><i>PARAMETER</i></b> | function                         | example         |
|---------------------|-------------------------|----------------------------------|-----------------|
| VS                  | AUDIO AMP               | HDMI AUDIO Output setting change | VSAUDIO AMP<CR> |
|                     | AUDIO TV                |                                  | VSAUDIO TV<CR>  |
|                     | VPMAUTO                 | Video Mode setting change        | VSVPM AUTO<CR>  |
|                     | VPMGAME                 |                                  | VSVPMGAME<CR>   |
|                     | VPMMOVI                 |                                  | VSVPMMOVI<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 ON<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:ESMTRX        |  | PSSB:ESMTRX<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>     |
|              | FH:ON            | FRONT HEIGHT Output change                     | PSFH:ON<CR>           |
|              | FH:OFF           |  | PSFH:OFF<CR>          |
|              | PHG LOW          | PL z HEIGHT GAIN direct change                 | PSPHG LOW<CR>         |
|              | PHG MID          |  | PSPHG MID<CR>         |
|              | PHG HI           |  | PSPHG HI<CR>          |
|              | 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>       |

| <b>EVENT</b> | <b>PARAMETER</b> | <b>function</b>               | <b>example</b>   |
|--------------|------------------|-------------------------------|------------------|
| PS           | REFLEV 0         | Reference Level Offset change | PSREFLEV 0<CR>   |
|              | REFLEV 5         |                               | PSREFLEV 5<CR>   |
|              | REFLEV 10        |                               | PSREFLEV 10<CR>  |
|              | REFLEV 15        |                               | PSREFLEV 15<CR>  |
|              | DYNVOL NGT       | DYNAMIC VOLUME change         | PSDYNVOL NGT<CR> |
|              | DYNVOL EVE       |                               | PSDYNVOL EVE<CR> |
|              | DYNVOL DAY       |                               | PSDYNVOL DAY<CR> |
|              | BAS **           | BASS change                   | PSBAS 50<CR>     |
|              | TRE **           | 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>    |
|              | 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 100<CR>    |

| <b>EVENT</b> | <b>PARAMETER</b> | <b>function</b>             | <b>example</b>   |
|--------------|------------------|-----------------------------|------------------|
| PS           | 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 **           | DIMENSION change            | PSDIM 06<CR>     |
|              | CEN **           | CENTER WIDTH change         | PSCEN 07<CR>     |
|              | CEI **           | CENTER IMAGE change         | PSCEI 10<CR>     |
|              | 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> |
|              | FRONT SPA        | FRONT SPEAKER direct change | PSFRONT SPA<CR>  |
|              | FRONT SPB        |                             | PSFRONT SPB<CR>  |
|              | FRONT SPA+B      |                             | PSFRONT A+B<CR>  |

| <b>EVENT</b> | <b>PARAMETER</b>                     | function   | example  |
|--------------|--------------------------------------|--|--|
| Z2           | CD<br> <br>USB DIRECT<br>IPOD DIRECT | ZONE2 source change<br>---The name of PARAMETER is<br>the same as that of the time of SI COMMAND.                      | Z2CD<CR><br> <br>Z2USB DIRECT<CR><br>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)<br>Change QUICK SELCT OFF  | Z2QUICK0<CR>   |
|              | **                                   | ZONE2 VOLUME change , **:00 to 99 by ASCII<br>98 = 18dB(MAX)<br>80 = 0dB<br>10 = -70dB<br>00 = -80dB<br>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>  |
| Z2CV         | FL **                                | ** : 38 to 62 by ASCII , 50=0dB  | Z2CVFL 50<CR>  |
|              | FR **                                | ** : 38 to 62 by ASCII , 50=0dB  | Z2CVFR 50<CR>  |

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

## ANALOG TUNER Control

| <i><b>EVENT</b></i> | <i><b>PARAMETER</b></i> | <i><b>function</b></i>   | <i><b>example</b></i>                    |
|---------------------|-------------------------|--|--|
| TF                  | AN*****<br>(6 digits)   | TUNER Frequency change<br><br>--- ****.** kHz at AM band<br>****.** MHz at FM band | TFAN105000<CR><br><br>(1050.00kHz at AM) |
|                     | AN**(PRESET No.)        | TUNER PRESET change to No.**   | TPANA1<CR><br>(PRESET No."A1")           |
| TM                  | ANOFF                   | Change Preset Channel select OFF   | TPANOFF<CR>                              |
|                     | <b>ANMEM**</b>          | <b>TUNER PRESET MEMORY</b>   | <b>TPANMEMA1&lt;CR&gt;</b>               |
|                     | ANAM                    | TUNER BAND , MODE change<br>---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>                           |

## Network Audio/USB /iPod DIRECT Extended Control

| EVENT | PARAMETER | function  | example  |
|-------|-----------|---|--|
| NSA   |           | Onscreen Display Information is Answered<br>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><br>*:Character Length MAX96byte<br>_:Null<br>?:Exclusion(The character after Null<br>should be disregarded)<br>:Cursor&Playable<br>Information Data(1Byte)<br>Bit1:Playable Music<br>Bit2:Directory<br>Bit4:CURSOR SELECT=1<br>Bit7:Picture<br>Bit3,5,6,8:Don't Care                   |
|       |           |   | NSA0Now Playing USB_?????<CR><br>NSA1 Come Away With Me_????<CR><br>NSA2 Norah Jones_?????????<CR><br>NSA3 _????????????????????<CR><br>NSA4 _????????????????????<CR><br>NSA5 00:11 100%_????????<CR><br>NSA6 _????????????????????<CR><br>NSA7_????????????????????<CR><br>NSA8_????????????????????<CR> |

| <b><i>EVENT</i></b> | <b><i>PARAMETER</i></b> | <b><i>function</i></b>   | <b><i>example</i></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><br>*:UTF-8 CODE Character(MAX96byte)<br>_:Null<br>?: Don't Care (The character after Null should be disregarded)<br>:Cursor&Playable<br>Information Data(1Byte)<br>Bit1:Playable Music =1<br>Bit2:Directory<br>Bit4:CURSOR SELECT=1<br>Bit7:Picture<br>Bit3,5,6,8:Don't Care<br>*****_?????:96byte Fixed |
|                     |                         |  | <example><br>NSE0Now Playing USB_????<CR><br>NSE1 Come Away With Me_???<CR><br>NSE2 Norah Jones_????????<CR><br>NSE3 _????????????????<CR><br>NSE4 _????????????????<CR><br>NSE5 00:11 100%_??????<CR><br>NSE6 _????????????????<CR><br>NSE7_????????????????<CR><br>NSE8_????????????????<CR>                               |

| COMMAND | PARAMETER           | function  | example   |
|---------|---------------------|---|---|
| NS      | P1                  | Preset1-3 Call  | NSP1<CR>  |
|         | P2                  |   | NSP2<CR>  |
|         | P3                  |   | NSP3<CR>  |
|         | P1 MEM              | Preset 1-3 Memory   | NSP1 MEM<CR>  |
|         | P2 MEM              |   | NSP2 MEM<CR>  |
|         | P3 MEM              |   | NSP3 MEM<CR>  |
|         | P                   | Return Preset 1-3 status (UTF-8)                                  | NSP01***** (20 digits)<CR><br>NSP02***** (20 digits)<CR><br>NSP03***** (20 digits)<CR><br>***:Station name or Title name  |
|         | B**<br>(PRESET No.) | Preset Call<br>** : 00-55 (00:A1/55:G8)                           | NSB00<CR>   |
|         | C**<br>(PRESET No.) | Preset Memory, Preset stored at No.**<br>** : 00-55 (00:A1/55:G8) | NSC00<CR>   |
|         | H                   | Return Preset Channel A1-G8 status (UTF-8)<br>(00:A1-55:G8)       | NSH00***** (20 digits)<CR><br>NSH01***** (20 digits)<CR><br> <br>NSH54***** (20 digits)<CR><br>NSH55***** (20 digits)<CR> |



## iPod Extended Control

iPod Dock which AVR-2112CI/AVR-1912 can connect with is ASD-1R/11R.

| <i>EVENT</i> | <i>PARAMETER</i> | function  | example  |
|--------------|------------------|---|--|
| IPA          |                  | Onscreen Display Information is Answered<br>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 MAX96byte<br>_:Null<br>?:Exclusion(The character after Null<br>should be disregarded)<br>:Cursor Information Data(1Byte)<br>Bit1:Playable Music/Video=1<br>Bit2:Directory=1<br>Bit4:CURSOR SELECT=1<br>Bit3,5,6,7,8:Don't Care<br>#:Bit1-8:Don't Care |

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

| <b>EVENT</b> | <b>PARAMETER</b> | <b>function</b>  | <b>example</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  
Bit3,5,6,7,8:Don't Care  
#:Bit1-8:Don't Care

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

## Remote Lock/Panel Lock

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

## Extension COMMAND

- The RC code can be sent from Serial protocol commands

## Protocol specification

**Command structure:** COMMAND + RC FORMAT + RC DATA + CR (0x0D)

COMMAND : ASCII CODE of 2 characters

Ex.           RC   : RC CODE

RC FORMAT : ASCII CODE of 3 characters

Ex.           **KSK**   : KASEIKYO FORMAT

**SHP**   : SHARP FORMAT

RC DATA : ASCII CODE of 7 characters

For details of the RC CODE , please refer to the IR remote control code list.

### KASEIKYO FORMAT

REMOTE ID SET : 1

| K4-1 : MAIN ZONE |        |    |    |    |      |    |    |    |    |    |    |    |    |    |    |    |        |    |    |    |    |    |    |    |               |  |  |
|------------------|--------|----|----|----|------|----|----|----|----|----|----|----|----|----|----|----|--------|----|----|----|----|----|----|----|---------------|--|--|
| No.              | GENRE2 |    |    |    | Data |    |    |    |    |    |    |    |    |    | ID |    | parity |    |    |    |    |    |    |    | Key Name      |  |  |
|                  | 25     | 26 | 27 | 28 | 29   | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41     | 42 | 43 | 44 | 45 | 46 | 47 | 48 |               |  |  |
| RCKSK0410002     | 1      | 0  | 0  | 0  | 0    | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 1      | 0  | 0  | 0  | 0  | 1  | 1  | 0  | ALL POWER ON  |  |  |
| RCKSK0410003     |        |    |    |    | 1    | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 1      | 0  | 0  | 0  | 1  | 1  | 1  | 0  | ALL POWER OFF |  |  |
| RCKSK0410006     |        |    |    |    | 0    | 1  | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 1      | 0  | 0  | 0  | 0  | 1  | 0  | 0  | MAIN ZONE ON  |  |  |
| RCKSK0410007     |        |    |    |    | 1    | 1  | 1  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 1      | 0  | 0  | 0  | 1  | 1  | 0  | 0  | MAIN ZONE OFF |  |  |

### SHARP FORMAT

| No.          | Data (C6~C11) | Key Name                  | No.          | Data (C6~C11) | Key Name           |
|--------------|---------------|---------------------------|--------------|---------------|--------------------|
| RCSHP0230032 | 000001        | ENTER                     | RCSHP0230048 | 000011        | MUTING             |
| RCSHP0230033 | 100001        | POWER ON                  | RCSHP0230049 | 100011        | MASTER VOLUME UP   |
| RCSHP0230034 | 010001        | POWER OFF                 | RCSHP0230050 | 010011        | MASTER VOLUME DOWN |
| RCSHP0230035 | 110001        | DVD                       | RCSHP0230051 | 110011        | SL LEVEL UP        |
| RCSHP0230036 | 001001        | STANDARD(DOLBY/DTS SURR.) | RCSHP0230052 | 001011        | SL LEVEL DOWN      |
| RCSHP0230037 | 101001        | SL LEVEL DOWN             | RCSHP0230053 | 101011        | CENTER LEVEL UP    |

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

RCKSK0410002<CR> : All Power ON by using KASEIKYO FORMAT

RCSHP0230033<CR> : All Power ON by using SHARP FORMAT