# Denon SYSTEM control protocol

Ver.02

Version history

| Version | Date | |
|---------|------|---|
| 01 | | First issue |
| 02 | 2013/02/27 | Changes to contents of Function "MV "command.(P7,P14) |
| | | Additional Master Volume conversion table(Appendix1).(P9) |
| | | Additional Return AMX parameter conversion table(Appendix2). (P16) |
| | | |

Application model :   DSD500/DSD300
Application terminal: Ethernet

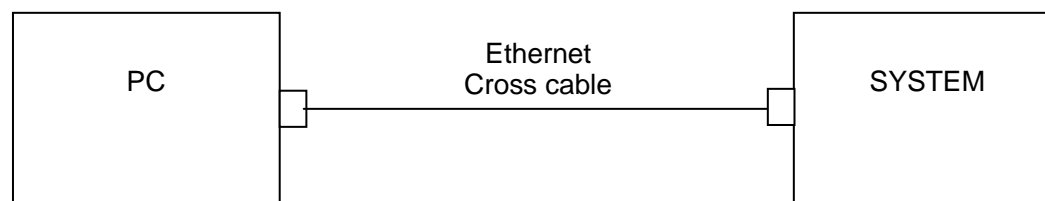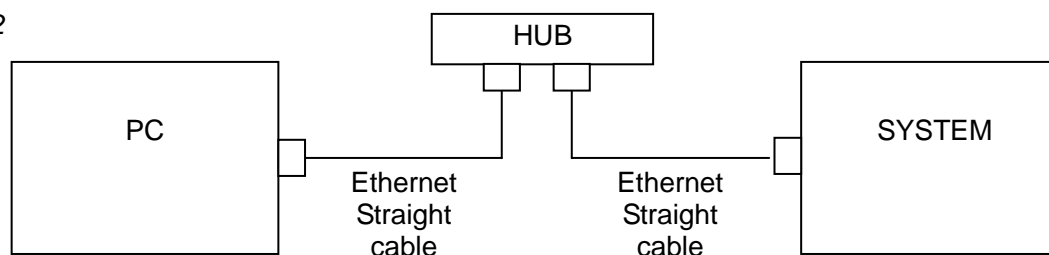**<u>AMX Rev 3.8.0</u>**

# Connector specification

Ethernet

      Connector type   :   RJ-45(10BASE-T/100BASE-TX), Wireless LAN(IEEE 802.11 a/b/g)

*Example 1*

PC — Ethernet Cross cable — SYSTEM

*Example 2*

PC — Ethernet Straight cable — HUB — Ethernet Straight cable — SYSTEM
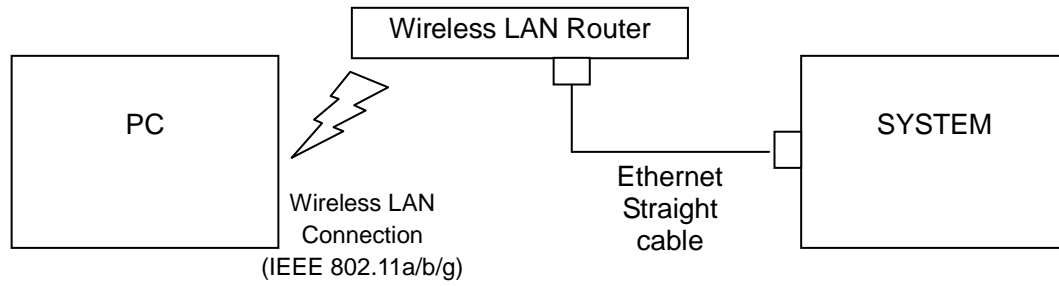
*Example 3*



Communication format :
>        Communication system         : A half-duplex
>        Communication speed          : 10Mbps/100Mbps(Wired), 11Mbp/54Mbps(Wireless)
>        Communication port            : TCP port 23 (telnet)
>        Communication data length      : 135bytes (maximum)

NETWORK SETUP of DSD500/300


>Procedure of Network Setup mode.

(1) Tap Setting icon on cocoon app, then Menu appears on cocoon app.

(2)Select "Network Setting" .

(3)Set parameters described below.

    &lt;DHCP&gt;          "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.

    &lt;IP Address&gt;    When &lt;DHCP&gt; sets "OFF", please set IP address.

                       When &lt;DHCP&gt; sets "ON", you can confirm the IP address that is set by server.

    &lt;Subnet Mask&gt;  When &lt;DHCP&gt; sets "OFF", please set Subnet Mask.

                       When &lt;DHCP&gt; sets "ON", you can confirm the Subnet Mask that is set by server.

    &lt;Gateway&gt;     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.

    &lt;Primary DNS&gt;  Do not set this parameter.

    &lt;Second DNS&gt;  Do not set this parameter.

    &lt;Proxy&gt;        Set this parameter "OFF".

Protocol specification

The following three data forms are defined.

COMMAND : The message sent to a system 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
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
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
          MU  :  Mute Setting
          MV  :  Master Volume setting
          PW  :  System Power setting

PARAMETER : ASCII CODE ( up to 25 characters)

ex.       USB: function name

*Special Parameter--- ? : for request command

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

| | | |
|---|---|---|
| SIUSB<CR> | : | Select Input source USB |
| MUON<CR> | : | Mute Set to On |
| 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>' |
| AMX<CR> | : | AMX Beacon *1 |

*1 This command is very specially. It is response that UUID, SDK Class(Model Genre),
   Model Name, Implementing AMX command spec version.
   And this command doesn't has a request command.
   So, this command will notice the implementing AMX command version.
   When AMX commands client equipment has received AMX Beacon response,
   AMX commands client equipment's change the AMX command send/receive driver which was optimized by received AMX command version.

   For example
   AMX commands client : Send "AMX<CR>"
   Unit : Respond   "AMXB<-UUID=00-00-00-00-00-00><-SDKClass=Receiver><-Make=DENON><-Model=AVR-3312><-Revision=7.6.0><CR>"

Others
A) *COMMAND* is receivable also during transmission of *EVENT*.
B) 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).
C) The *PARAMETER* (with *COMMAND* and *RESPONSE, EVENT*) of minimum level of MASTER VOLUME defines "00".
D) Since Sound MODE changes simultaneously when the INPUT source changes, the Sound MODE (and   also the value of the channel volume of all channels , It described in B) ) returns as EVENT.
E) When Sound MODE is the same in between INPUT source change before and after, EVENT of Sound MODE and CHANNEL VOLUME does not return.
F) Although EVENT of Sound MODE returns when the present Sound MODE is set up again, CHANNEL VOLUME does NOT return.
G) When Sound MODE is changed, before returning Sound MODE after change as EVENT, the present Sound 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.
I) The PARAMETER (with COMMAND and RESPONSE, EVENT) of minimum level of MASTER VOLUME defines "00".
J) 1 seconds later, please transmit the next *COMMAND* after transmitting a power on *COMMAND*（PWON）.
K) When unit received a command, the unit must replay by the same command for a AMX client.
    For example:

        1)
        AMX commands client : Send "SIAIRPLAY<CR>"
        Unit : Change an input source to AirPlay and Respond "SIAIRPLAY<CR>"

        2)
        AMX commands client : Send "MUON<CR>"
        Unit : turn on a mute and Respond"MUON<CR>"

## COMMAND and PARAMETER list

| COMMAND | PARAMETER | Function | example |
|---|---|---|---|
| AMX | - | AMX Beacon | AMX<CR><br>Return<br>AMXB<-UUID=00-05-CD-00-00-00><-SDK Class= Digital Media Server><-Make= DENON><br><-Model=DSD500><-Revision=2.1.0><CR> |
| MV | UP | MASTER VOLUME UP/DOWN , direct change to **dB | MVUP<CR> |
|  | DOWN |  | MVDOWN<CR> |
|  | ** | **00 to 50 by ASCII<br><br><Firmware version under 0.189(DSD500) and 0.174(DSD300)><br>Displayed Master Volume Value 50　　　= MV command parameter is 50<br>　　　　　　　　　　　　　　　　　　　\|<br>　　　　　　　　　　　　　　　01　　= MV command parameter is 01<br>　　　　　　　　　　　　　　　00(MIN) = MV command parameter is 00<br><br>　"MV" command parameter corresponds one-to-one with Master volume value.<br><br><Firmware version greater or equal.189(DSD500) and 0.174(DSD300)><br>Please see appendix 1 "Mater Volume conversion table" about MV command parameters<br><br>This is because maximum value of "MV" command parameter does not match maximum value of actual master volume if firmware version is greater than or equal to 0.189(DSD500) and 0.174(DSD300).<br>("MV" command parameter maximum value:50, actual master volume value:99)<br><br>DSD500 and DSD300 converts "MV" command parameter to specific master volume if firmware version is greater than or equal to 0.189(DSD500) and 0.174(DSD300). | MV45<CR> |
|  | ? | Return MV Status | MV?<CR> |
| MU | ON | OUTPUT MUTE ON/OFF change | MUON<CR> |

| | | | |
|---|---|---|---|
| | OFF | | MUOFF\<CR\> |
| | ? | Return MU Status | MU?\<CR\> |
| SI | AIRPLAY | Select INPUT source | SIAIRPLAY\<CR\>*1 |
| | IDEVICE | | SIIDEVICE\<CR\> |
| | IRADIO | | SIIRADIO\<CR\> |
| | IRADIO1 | | SIIRADIO1\<CR\> |
| | IRADIO2 | | SIIRADIO2\<CR\> |
| | IRADIO3 | | SIIRADIO3\<CR\> |
| | SERVER | | SISERVER\<CR\>*1 |
| | USB | | SIUSB\<CR\>*2 |
| | ? | Return SI Status | SI?\<CR\> |
| SLP | OFF | SLEEP TIMER setting change | SLPOFF\<CR\> |
| | ** | **:01 to 90(minute) by ASCII, (90=90minute(MAX),01=01minute (MIN) and OFF=SLEEP TIMER OFF) | SLP90\<CR\> |
| | ? | Return SLEEP TIMER Status | SLP?\<CR\> |

MV *COMMAND*: "*" parameter uses two or three ASCII characters. (see page8 J) section)

*1 This command is used for only RESPONSE

*2 This command is used only in DSD500

Appendix 1 Mater Volume conversion table

| AMX parameter value | Actual master volume value on UX improvement firmware |
|---|---|
| 50 | 99 |
| 49 | 97 |
| 48 | 95 |
| 47 | 93 |
| 46 | 91 |
| 45 | 89 |
| 44 | 87 |
| 43 | 85 |
| 42 | 83 |
| 41 | 81 |
| 40 | 79 |
| 39 | 77 |
| 38 | 75 |
| 37 | 73 |
| 36 | 71 |
| 35 | 69 |
| 34 | 67 |
| 33 | 65 |
| 32 | 63 |
| 31 | 62 |
| 30 | 61 |
| 29 | 60 |
| 28 | 59 |
| 27 | 58 |
| 26 | 57 |
| 25 | 56 |
| 24 | 55 |
| 23 | 54 |
| 22 | 53 |
| 21 | 52 |
| 20 | 51 |
| 19 | 50 |
| 18 | 49 |
| 17 | 48 |
| 16 | 47 |

| | |
|---|---|
| 15 | 46 |
| 14 | 45 |
| 13 | 44 |
| 12 | 43 |
| 11 | 42 |
| 10 | 41 |
| 9 | 38 |
| 8 | 33 |
| 7 | 28 |
| 6 | 23 |
| 5 | 18 |
| 4 | 11 |
| 3 | 8 |
| 2 | 7 |
| 1 | 6 |
| 0 | 0 |

This table means to convert "MV" command parameter to actual master volume value if firmware version is greater than or equal to 0.189(DSD500) and 0.174(DSD300).

For example:
When the DSD500 or DSD300 receive "MV20", DSD500 and DSD300 sets master volume value to 51.

This is because DSD500 and DSD300 change maximum volume value to 99 if firmware version is greater than or equal to 0.189(DSD500) and 0.174(DSD300).
However, "MV" command parameter prepared maximum volume value 50.
Therefore, "MV" command parameter does not match actual master volume value.

DSD500 and DSD300 converts "MV" command parameter to specific master volume value If firmware version is greater than or equal to 0.189(DSD500) and 0.174(DSD300).
If firmware version is less than 0.189(DSD500) and 0.174(DSD300), DSD500 and DSD300 directly sets master volume value to "MV" command parameter without conversion

※Network/Rhapsody/Napster/USB/iPod Direct Extended Control

| COMMAND | PARAMETER | Function | example |
|---|---|---|---|
| NS | 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> |
| | P1 MEM | Preset1 Memory | NSP1 MEM\<CR> |
| | P2 MEM | Preset2 Memory | NSP2 MEM\<CR> |
| | P3 MEM | Preset3 Memory | NSP3 MEM\<CR> |
| | P | Net Audio Preset 1-3 status（UTF-8） | NSP\<CR><br>(Return)<br>NSP01********** (20 digits)\<CR><br>(Preset Name：P1)<br>NSP02********** (20 digits)\<CR><br>(Preset Name：P2)<br>NSP03********** (20 digits)\<CR><br>(Preset Name：P3) |
| NSE | | Request Onscreen Display Information List<br>(UTF-8 CODE Character) | NSE\<CR><br>(Return NSE0-NSE8,Refer to Page 12） |

| COMMAND | PARAMETER | Function | example |
|---|---|---|---|
| CC | MAN**** | Clock Manual Adjust(Using 24 hour clock)<br>****:0000 to 2359 by ASCII | CCMAN1450<CR> |
| | TMZN** | Time Zone Setting for Clock Auto Adjust<br>**:00 to 99 by ASCII, 50 = UTC<br>from -12 to 12(38 to 62):Refer to table 1 | CCTMZN50<CR> |
| | SMTM ON | Summer Time ON | CCSMTM ON<CR> |
| | SMTM OFF | Summer Time OFF | CCSNTN OFF<CR> |
| | AUTO | Clock Auto Adjust Done | CCAUTO<CR> |
| | ? | Return Clock Display Mode Status | CC?<CR><br>Return<br>CCON<CR><br>CCTMZN<50><br>CCSMTM OFF<CR><br>CCDIG<CR> |

| COMMAND | PARAMETER | Function | Example |
|---|---|---|---|
| BS | FULL | Battery Status: FULL | BSFULL<CR>*3 |
| | MID | Battery Status: MIDDLE | BSMID<CR>*3 |
| | LOW | Battery Status: LOW | BSLOW<CR>*3 |
| | FEW | Battery Status: FEW | BSFEW<CR>*3 |
| | ? | Return Battery Status | BS?<CR>*4 |

*3 These commands are used for only DSD300, and these commands are used for only RESPONSE.

*4 This command is used for only DSD300

Table 1 Time Zone Table

| Option Parameter | Time Zone | Typical City |
|---|---|---|
| 38 | UTC +12H | Petropavlovsk-Kamchatsky Time |
| 39 | UTC +11H | Magadan Time |
| 40 | UTC +10H | Australian Eastern Standard Time, Vladivostok Time |
| 41 | UTC +9H | Japan Standard Time, Korea Standard Time, Yakutsk Time |
| 42 | UTC +8H | Chinese Standard Time, Australian Western Standard Time Irkutsk Time |
| 43 | UTC +7H | Krasnoyarsk Time |
| 44 | UTC +6H | Omsk Time |
| 45 | UTC +5H | Yekaterinburg Time |
| 46 | UTC +4H | Samara Time |
| 47 | UTC +3H | Moscow Standard Time |
| 48 | UTC +2H | Eastern European Time, Kaliningrad Time |
| 49 | UTC +1H | Central European Time |
| 50 | UTC | Greenwich Mean Time, Western European Time |
| 51 | UTC -1H | None |
| 52 | UTC -2H | None |
| 53 | UTC -3H | None |
| 54 | UTC -4H | Atlantic Standard Time |
| 55 | UTC -5H | Eastern Standard Time |
| 56 | UTC -6H | Central Standard Time |
| 57 | UTC -7H | Mountain Standard Time |
| 58 | UTC -8H | Pacific Standard Time |
| 59 | UTC -9H | Alaska Standard Time |
| 60 | UTC -10H | Hawaii-Aleutian Standard Time |
| 61 | UTC -11H | None |
| 62 | UTC -12H | None |

# EVENT(or RESPONSE) and PARAMETER list

| EVENT | PARAMETER | Function | example |
|---|---|---|---|
| AMXB | <-UUID=XX-XX-XX-XX-XX-XX><-SDKClass=$$$$$$><-Make=?????><-Model=++++++><-Revision=*.*.*><br>X:0-9, or A-F<br>$:A-Z or a-z<br>?:A-Z or a-z<br>+:A-Z or a-z<br>*:0-9 | AMX Beacon response(UUID, SDKClass(Model Genre), Brand Name, Model Name, AMX command spec version)<br><br><-UUID=XX-XX-XX-XX-XX-XX><-SDKClass=Digital Media Server><-Make=?????><-Model=++++++><-Revision=*.*.*><CR><br>X:0-9, or A-F(= MAC Address)<br>?:A-Z or a-z(= Brand Name)<br>+:A-Z or a-z(= Model Name)<br>*:0-9(= Spec Version) | AMXB<-UUID=00-05-CD-00-00-00><-SDKClass= Digital Media Server ><-Make=DENON><-Model=DSD500><-Revision=2.2.0><CR> |
| MV | ** | MASTER VOLUME change , **:00 to 50 by ASCII*1<br><br><Firmware version under 0.189(DSD500) and 0.174(DSD300)><br>Displayed Master Volume Value 50    = MV command parameter is 50<br>                \|<br>          01    = MV command parameter is 01<br>          00(MIN) = MV command parameter is 00<br><br> "MV" command parameter corresponds one-to-one with Master volume value.<br><br><Firmware version greater or equal.189(DSD500) and 0.174(DSD300)><br>Please see appendix 2 "Return AMX parameter conversion table" about MV command parameter.<br><br>This is because maximum value of AMX parameter does not match maximum value of actual master volume if firmware version is greater than or equal to 0.189(DSD500) and 0.174(DSD300).<br>(AMX parameter maximum value:50, actual master volume value:99)<br><br>DSD500 and DSD300 convert master volume value to specific "MV" command parameter value if firmware version is greater than or equal to 0.189(DSD500) and 0.174(DSD300). | MV045<CR> |
| MU | ON | OUTPUT MUTE ON/OFF change | MUON<CR> |
| | OFF | | MUOFF<CR> |

| SI | AIRPLAY | Selected Input source | SIAIRPLAY<CR>*1 |
|---|---|---|---|
| | IDEVICE | | SIIDEVICE<CR> |
| | AUX | | SIAUX<CR> |
| | IRADIO1 | | SIIRADIO1<CR> |
| | IRADIO2 | | SIIRADIO2<CR> |
| | IRADIO3 | | SIIRADIO3<CR> |
| | SERVER | | SISERVER<CR>*1 |
| | USB | | SIUSB<CR>*2 |
| SLP | OFF | SLEEP TIMER setting change | SLPOFF<CR> |
| | ** | | SLP90<CR> |

MV *COMMAND*: "*" parameter uses two or three ASCII characters. (see page8 J) section)

*1 This command is used for only RESPONSE

*2 This command is used only in DSD500

Appendix 2:Return AMX parameter conversion table

| Actual master volume value on UX improvement firmware | Converted AMX command parameter value |
| --- | --- |
| 99 | 50 |
| 98 | 50 |
| 97 | 49 |
| 96 | 49 |
| 95 | 48 |
| 94 | 48 |
| 93 | 47 |
| 92 | 47 |
| 91 | 46 |
| 90 | 46 |
| 89 | 45 |
| 88 | 45 |
| 87 | 44 |
| 86 | 44 |
| 85 | 43 |
| 84 | 43 |
| 83 | 42 |
| 82 | 42 |
| 81 | 41 |
| 80 | 41 |
| 79 | 40 |
| 78 | 40 |
| 77 | 39 |
| 76 | 39 |
| 75 | 38 |
| 74 | 38 |
| 73 | 37 |
| 72 | 37 |
| 71 | 36 |
| 70 | 36 |
| 69 | 35 |
| 68 | 35 |
| 67 | 34 |
| 66 | 34 |
| 65 | 33 |

| | |
|---|---|
| 64 | 33 |
| 63 | 32 |
| 62 | 31 |
| 61 | 30 |
| 60 | 29 |
| 59 | 28 |
| 58 | 27 |
| 57 | 26 |
| 56 | 25 |
| 55 | 24 |
| 54 | 23 |
| 53 | 22 |
| 52 | 21 |
| 51 | 20 |
| 50 | 19 |
| 49 | 18 |
| 48 | 17 |
| 47 | 16 |
| 46 | 15 |
| 45 | 14 |
| 44 | 13 |
| 43 | 12 |
| 42 | 11 |
| 41 | 10 |
| 40 | 10 |
| 39 | 10 |
| 38 | 9 |
| 37 | 9 |
| 36 | 9 |
| 35 | 9 |
| 34 | 9 |
| 33 | 8 |
| 32 | 8 |
| 31 | 8 |
| 30 | 8 |
| 29 | 8 |
| 28 | 7 |
| 27 | 7 |

| | |
|---|---|
| 26 | 7 |
| 25 | 7 |
| 24 | 7 |
| 23 | 6 |
| 22 | 6 |
| 21 | 6 |
| 20 | 6 |
| 19 | 6 |
| 18 | 5 |
| 17 | 5 |
| 16 | 5 |
| 15 | 5 |
| 14 | 5 |
| 13 | 5 |
| 12 | 5 |
| 11 | 4 |
| 10 | 4 |
| 9 | 4 |
| 8 | 3 |
| 7 | 2 |
| 6 | 1 |
| 5 | 1 |
| 4 | 1 |
| 3 | 1 |
| 2 | 1 |
| 1 | 1 |
| 0 | 0 |

This table means to convert actual master volume value to specific "MV" command parameter value if firmware version is greater than or equal to 0.189(DSD500) and 0.174(DSD300).

For example:
When DSD500 or DSD300 receives "MV?" and current master volume value is 20, DSD500/300 MCU returns "MV06".

This is because DSD500 and DSD300 changes maximum volume value to 99 if firmware version is greater than or equal to 0.189(DSD500) and 0.174(DSD300).
However, "MV" command parameter prepared maximum volume value 50.
Therefore, "MV" command parameter does not match actual master volume value.

DSD500 and DSD300 converts current master volume value to specific "MV" command parameter If firmware version is greater than or equal to 0.189(DSD500) and 0.174(DSD300).
And if firmware version is less than 0.189(DSD500) and 0.174(DSD300), DSD500 and DSD300 directly returns "MV" command parameter value using actual master volume value without conversion.

Network/USB/iPod Direct Extended Control

| *EVENT* | *PARAMETER* | function | |
|---|---|---|---|
| NSE | | Onscreen Display Information(mServer/iRadio) is Answered By the NSE Command. | |
| | 0 | Display Line1 Information | NSE0*************_?????<CR> |
| | 1 | Display Line2 Information | NSE1※***********_?????<CR> |
| | 2 | Display Line3 Information | NSE2※***********_?????<CR> |
| | 3 | Display Line4 Information | NSE3※***********_?????<CR> |
| | 4 | Display Line5 Information | NSE4※***********_?????<CR> |
| | 5 | Display Line6 Information | NSE5※***********_?????<CR> |
| | 6 | Display Line7 Information | NSE6※***********_?????<CR> |
| | 7 | Display Line8 Information | NSE7*************_?????<CR> |
| | 8 | Display Line9 Information | NSE8*************_?????<CR><br>*:UTF-8 CODE Character(MAX95byte)<br>_:Null<br>?: Don't Care (The character after Null should be disregarded)<br>※:Cursor&Playable Music Information Data(1Byte)<br>　Bit1:Playable Music =1<br>　Bit2,3:Don't Care<br>　Bit4:CURSOR SELECT=1<br>　Bit5,6,7,8:Don't Care<br>***********_?????:96byte Fixed |
| | <example> | | NSE0 Now Playing***************<CR><br>NSE1 Dear Prudence*************<CR><br>NSE2 The Beatles**************<CR><br>NSE3 8************************<CR><br>NSE4 *The Beatles (White Album)*<CR><br>NSE5 *　　00:00　　　100%*a*******<CR><br>NSE6 **The Continuing Story of B<CR><br>NSE7 **While My Guitar Gently We<CR><br>NSE8 　　[　　2/31　　]***********<CR> |

| COMMAND | PARAMETER | Function | example |
|---|---|---|---|
| CC | MAN**** | Clock Manual Adjust(Using 24 hour clock)<br>****:0000 to 2359 by ASCII | CCMAN1450<CR> |
| | TMZN** | Time Zone Setting for Clock Auto Adjust<br>**:00 to 99 by ASCII, 50 = UTC<br>from -12 to 12(38 to 62):Refer to Table 1 | CCTMZN50<CR> |
| | SMTM ON | Summer Time ON | CCSMTM ON<CR> |
| | SMTM OFF | Summer Time OFF | CCSNTN OFF<CR> |
| | AUTO | Clock Auto Adjust Done | CCAUTO<CR> |

| COMMAND | PARAMETER | Function | Example |
|---|---|---|---|
| BS | FULL | Battery Status: FULL | BSFULL<CR>*3 |
| | MID | Battery Status: MIDDLE | BSMID<CR>*3 |
| | LOW | Battery Status: LOW | BSLOW<CR>*3 |
| | FEW | Battery Status: FEW | BSFEW<CR>*3 |

*3 These commands are used for only DSD300