

DENON ASD-51 control protocol

Ver. 1.0.0

Application model : ASD-51N/W
Revision: 1.0.0
Application terminal: Ethernet

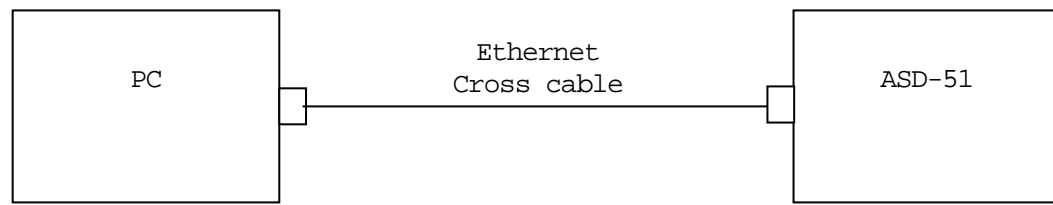
Connector specification

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1.0.0	28.Sep.'09	Original	

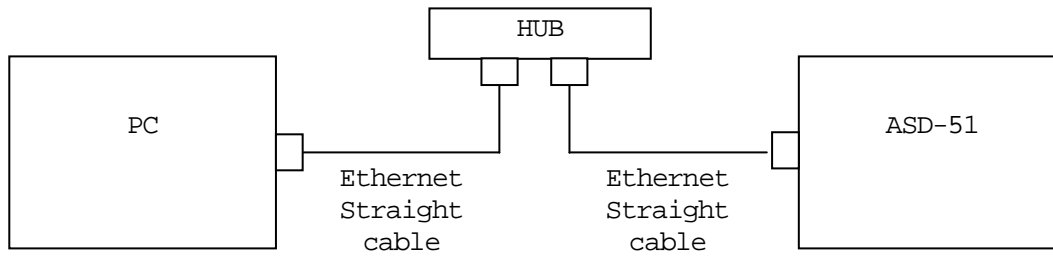
1. Ethernet

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 ASD-51N/W

>Procedure of Network Setup mode.

(1)Select "Setup > Network > Network Setup > Detail" .

(2)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".

Protocol specification

The following three data forms are defined.

- COMMAND** : The message sent to a system(ASD-51N/W) 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 (ASD-51N/W)
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 (ASD-51N/W)
if the 'request command' (**COMMAND**+?**CR**(0x0D)) has come from a controller.
The **RESPONSE** should be sent within 200ms of receiving the **COMMAND**.
*The form of **RESPONSE** presupposes that it is the same as that of **EVENT**.

Basic specification: The command by ASCII CODE, parameter expression

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

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

COMMAND: ASCII CODE of 2 characters

Ex. SI : Select Input source
 MV : Master Volume setting
 PW : system Power setting

PARAMETER : ASCII CODE (up to 25 characters)

ex. IPOD : function name

*Special Parameter--- ? : for request command

The example of a command

* <CR> is the meaning of 0x0D.

SIIPOD<CR> : Select source iPod

MVUP<CR> : Master Volume UP

PW<CR> : system Power ON/Standby toggle

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

Others

A) **COMMAND** is receivable also during transmission of **EVENT**.

B) 1 seconds later, please transmit the next **COMMAND** after transmitting a power on **COMMAND** (PW).

COMMAND and PARAMETER list

Control command

	Remote control function name	Command(ASCII)
1	Power on/standby toggle	PW<CR>
2	Volume Up	MVUP<CR>
3	Volume Down	MVDOWN<CR>
4	Home	SITOP<CR>
5	Start Fast Forward	NSFF<CR>
6	Start Fast Reverse	NSRE<CR>
7	End of Fast Forward/Reverse	NSED<CR>
8	iPod Browse/Remote toggle	IP9W<CR>
9	Scroll up	NS90<CR>
10	Scroll down	NS91<CR>
11	Select	NS93<CR>
12	Cancel	NS92<CR>
13	Page Up	NS9X<CR>
14	Page Down	NS9Y<CR>
15	Next	NS9D<CR>

16	Play/Pause	NS9A<CR>
17	Previous	NS9E<CR>
18	Stop	NS9C<CR>
19	Repeat	NS9H<CR>
20	Shuffle	NS9K<CR>
21	Favorites	SIFAV<CR>
22	Go To content browser iPod	SIIPOD<CR>
	Go To content browser Internet Radio	SINET<CR>
23	Mute on/off toggle	MU<CR>
24	Set NTSC mode	SSFORNT<CR>
25	Set PAL mode	SSFORPL<CR>
26	MEMORY	NSMEM<CR>

State check command			
	Command	Return Command	Dock Status
1	PW?<CR>	PWON<CR>	Power status is "ON"
		PWSTANDBY<CR>	Power status is "STANDBY"
2	MV?<CR>	MV**<CR>	Master Volume value *1
3	SI?<CR>	SIIPOD<CR>	Function status is "iPod"
		SINET<CR>	Function status is "NetAudio"
		SITOP<CR>	Function status is "Top Menu"
4	MU?<CR>	MUON<CR>	Mute status is "ON"
		MUOFF<CR>	Mute status is "OFF"
5	SSFOR?<CR>	SSFORNT<CR>	Video format is "NTSC"
		SSFORPL<CR>	Video format is "PAL"
6	NSE<CR>	NSE0 *****<CR> NSE1 *****<CR> NSE2 *****<CR> NSE3 *****<CR> NSE4 *****<CR> NSE5 *****<CR> NSE6 *****<CR> NSE7 *****<CR> NSE8 *****<CR>	Display Information *2

*1 MV StatusMV000-MV100: MV004,MV007,MV010,MV014...MV090,MV094,MV097,MV100

*2 Display Information

EVENT	PARAMETER	function	
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> *:UTF-8 CODE Character(MAX95byte) _:Null ?: Don't Care (The character after Null should be disregarded) :Cursor&Playable Music Information Data(1Byte) Bit1:Playable Music =1 Bit2,3:Don't Care Bit4:CURSOR SELECT=1 Bit5,6,7,8:Don't Care *****_????:96byte Fixed	
		NSE0Now Playing USB_????<CR> NSE1 Come Away With Me_????<CR> NSE2 Norah Jones_????????<CR> NSE3 _????????????????<CR> NSE4 _????????????????<CR> NSE5 00:11 100%_????<CR> NSE6 _????????????????<CR> NSE7_????????????????<CR> NSE8_????????????????<CR>	