

**DENON**  
*PROFESSIONAL*

**DN-700AVP**

**Serial Command Protocol Guide**  
English

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## Introduction

Thank you for purchasing the DN-700AVP. At Denon Professional, performance and reliability mean as much to us as they do to you. That's why we design our equipment with only one thing in mind—to make your performance the best it can be.

## Support

For the latest information about this product (documentation, technical specifications, system requirements, compatibility information, etc.) and product registration, visit [denonpro.com](http://denonpro.com).

For additional product support, visit [denonpro.com/support](http://denonpro.com/support).

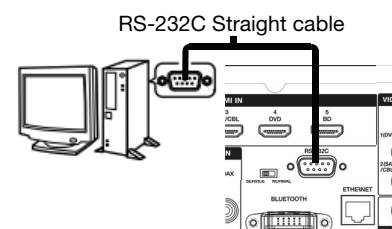
## General

The serial remote control function is used by connecting the host machine such as a PC to the device (DN-700AVP). The host can control the device by sending the Control command, and the host can detect the current device status by sending the Status Request command.

Two types of the connectivity, RS-232C and IP, are selectable. In addition, in this document, the controlled equipment is called the **Device** (DN-700AVP) and the controlling equipment is called the **Host** (PC, etc.).

## RS-232C Control

The host can control the device by connecting a D-sub 9-pin straight cable to the RS-232C connector on the rear panel of the device.



## Specifications

<b>Connector</b>	9-pin D-sub male
<b>Transfer Rate</b>	9,600 bps
<b>Data Length</b>	8 bits
<b>Parity</b>	None
<b>Stop Bit</b>	1 bit
<b>Flow Control</b>	None

## Pin Arrangement

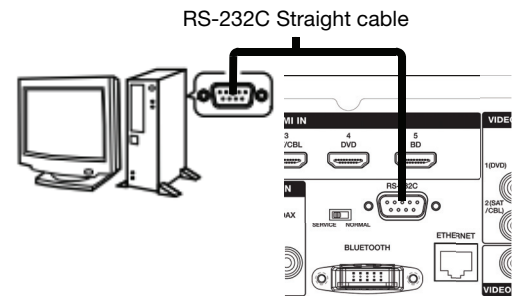
Pin Number	Signal Name
1	Ground
6	NC
2	TxD
7	NC
3	RxD
8	NC
4	NC
9	NC
5	S. Ground

## IP Control

The host can control the device by connecting a D-sub 9-pin straight cable to the RS-232C connector on the rear panel of the device.

### Specifications

<b>Transmission</b>	Full duplex
<b>Connector</b>	9-pin D-sub female
<b>Transfer Rate</b>	10 Mbps / 100 Mbps
<b>TCP Port No.</b>	23
<b>Data Length</b>	135 bytes maximum



## Communication Protocol

### Basic Specification

Communication with DN-700AVP uses ASCII Code from 0x20 to 0x7F, which includes the alphabet, numbers 0–9, space (0x20), some signs, and carriage return (CR, 0x0D).

There are three types of communication used by DN-700AVP:

#### 1. Controlling DN-700AVP from the host

When DN-700AVP receives a control command from the host, the device executes the command.

See [Control Command Codes](#) for the complete list of command codes.

#### 2. Sending status information for a status request command from the host

When DN-700AVP receives a status request command (**Command + ? + CR [0x0D]**) from the host, the device responds with the status information command.

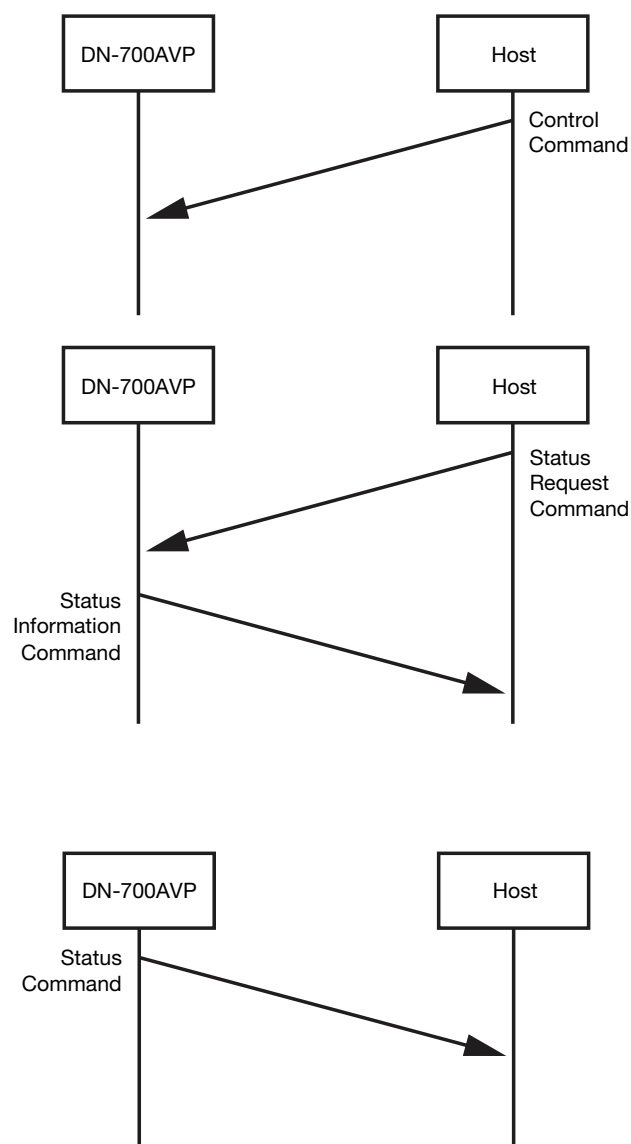
The response should be sent within 200 milliseconds (ms) of receiving the command.

See [Status Request/Information Codes](#) for the complete list of status commands.

#### 3. Sending status information automatically when there is a change to the device status

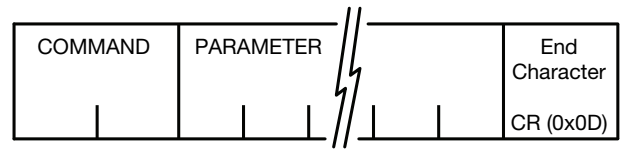
When a change to DN-700AVP is made from the device, it automatically sends the status information to the host.

The form of the status commands is the same as the status information commands, [above](#).



## Structure of Control Commands

Each packet of a control command begins with the **command** and ends with the **end character** (0x0D) as shown.



**Command:** ASCII Code of 2 characters

**Parameter:** ASCII Code (up to 25 characters)

**Note:** To confirm the status information of the device, send **Command + ? + CR** to the device from the host. The device status information is sent to the host.

## Structure of Command Codes

Item	Value (Hex value indicated in parentheses)
Command	Indicate a description of the command
Parameter	Indicate a description of the parameter
End Character	CR (0x0D)

- When a command is received, the device will respond within 200 ms.
- Allow an interval of at least 200 ms between commands when sending a series of commands from the host. DN-700AVP will not receive commands when the interval is less than 200 ms.
- The device can receive control command data during transmission of status command data.
- Do not send request commands from the host until the device returns a response.
- Wait 1 second after transmitting a Power On command (PWON<CR>) before transmitting the next command.

## Control Command Codes

CATEGORY	CONTENTS		COMMAND	PARAMETER	CODE	NOTES
Power	Power On		PW	ON	PWON<CR>	
	Standby			STANDBY	PWSTANDBY<CR>	
Master Volume	Up		MV	UP	MVUP<CR>	
	Down			DOWN	MVDOWN<CR>	
	0-90			**	MV**<CR>	** : 0 to 90 by ASCII 0 (Max), 90 (Min)
Channel Volume	Front Lch	Up	CV	FL UP	CVFL UP<CR>	
		Down		FL DOWN	CVFL DOWN<CR>	
		Direct change to **dB		FL **	CVFL **<CR>	** : 40 to 60 by ASCII 40 (-10 dB), 50 (0 dB), 60 (10 dB)
	Front Rch	Up		FR UP	CVFR UP<CR>	
		Down		FR DOWN	CVFR DOWN<CR>	
		Direct change to **dB		FR **	CVFR **<CR>	** : 40 to 60 by ASCII 40 (-10 dB), 50 (0 dB), 60 (10 dB)
	Center ch	Up		C UP	CVC UP<CR>	
		Down		C DOWN	CVC DOWN<CR>	
		Direct change to **dB		C **	CVC **<CR>	** : 40 to 60 by ASCII 40 (-10 dB), 50 (0 dB), 60 (10 dB)
	Subwoofer ch	Up		SW UP	CVSW UP<CR>	
		Down		SW DOWN	CVSW DOWN<CR>	
		Direct change to **dB		SW **	CVSW **<CR>	** : 40 to 60 by ASCII 40 (-10 dB), 50 (0 dB), 60 (10 dB)
	Surround Lch	Up		SL UP	CVSL UP<CR>	
		Down		SL DOWN	CVSL DOWN<CR>	
		Direct change to **dB		SL **	CVSL **<CR>	** : 40 to 60 by ASCII 40 (-10 dB), 50 (0 dB), 60 (10 dB)
	Surround Rch	Up		SR UP	CVSR UP<CR>	
		Down		SR DOWN	CVSR DOWN<CR>	
		Direct change to **dB		SR **	CVSR **<CR>	** : 40 to 60 by ASCII 40 (-10 dB), 50 (0 dB), 60 (10 dB)
	Surround Back Lch	Up		SBL UP	CVSBL UP<CR>	
		Down		SBL DOWN	CVSBL DOWN<CR>	
		Direct change to **dB		SBL **	CVSBL **<CR>	** : 40 to 60 by ASCII 40 (-10 dB), 50 (0 dB), 60 (10 dB)
	Surround Back Rch	Up		SBR UP	CVSBR UP<CR>	
		Down		SBR DOWN	CVSBR DOWN<CR>	
		Direct change to **dB		SBR **	CVSBR **<CR>	** : 40 to 60 by ASCII 40 (-10 dB), 50 (0 dB), 60 (10 dB)

CATEGORY	CONTENTS		COMMAND	PARAMETER	CODE	NOTES
Channel Delay	Front Lch	Up	CD	FL UP	CDFL UP<CR>	
		Down		FL DOWN	CDFL DOWN<CR>	
		Direct change to **		FL **	CDFL **<CR>	** : 0 to 100 by ASCII
	Front Rch	Up		FR UP	CDFR UP<CR>	
		Down		FR DOWN	CDFR DOWN<CR>	
		Direct change to **		FR **	CDFR **<CR>	** : 0 to 100 by ASCII
	Center ch	Up		C UP	CDC UP<CR>	
		Down		C DOWN	CDC DOWN<CR>	
		Direct change to **		C **	CDC **<CR>	** : 0 to 100 by ASCII
	Subwoofer ch	Up		SW UP	CDSW UP<CR>	
		Down		SW DOWN	CDSW DOWN<CR>	
		Direct change to **		SW **	CDSW **<CR>	** : 0 to 100 by ASCII
	Surround Lch	Up		SL UP	CDSL UP<CR>	
		Down		SL DOWN	CDSL DOWN<CR>	
		Direct change to **		SL **	CDSL **<CR>	** : 0 to 100 by ASCII
	Surround Rch	Up		SR UP	CDSR UP<CR>	
		Down		SR DOWN	CDSR DOWN<CR>	
		Direct change to **		SR **	CDSR **<CR>	** : 0 to 100 by ASCII
	Surround Back Lch	Up		SBL UP	CDSBL UP<CR>	
		Down		SBL DOWN	CDSBL DOWN<CR>	
		Direct change to **		SBL **	CDSBL **<CR>	** : 0 to 100 by ASCII
	Surround Back Rch	Up		SBR UP	CDSBR UP<CR>	
		Down		SBR DOWN	CDSBR DOWN<CR>	
		Direct change to **		SBR **	CDSBR **<CR>	** : 0 to 100 by ASCII
Output Mute	On		MU	ON	MUON<CR>	
	Off			OFF	MUOFF<CR>	
Main-Zone	On		ZM	ON	ZMON<CR>	
	Off			OFF	ZMOFF<CR>	



CATEGORY	CONTENTS	COMMAND	PARAMETER	CODE
Select <b>Input</b> Source	DVD	SI	DVD	SIDVD<CR>
	Dock		DOCK	SIDOCK<CR>
	BD		BD	SIBD<CR>
	SAT		SAT	SISAT<CR>
	Game1		GAME1	SIGAME1<CR>
	Game2		GAME2	SIGAME2<CR>
	CD		CD	SICD<CR>
	Media		MEDIA	SIMEDIA<CR>
	Bluetooth		BLUETOOTH	SIBLUETOOTH<CR>
	TV		TV	SITV<CR>
	Tuner		TUNER	SITUNER<CR>
Select <b>Surround</b> Mode	Direct	MS	DIRECT	MSDIRECT<CR>
	Stereo		STEREO	MSSTEREO<CR>
	Movie		MOVIE	MSMOVIE<CR>
	Music		MUSIC	MSMUSIC<CR>
	Game		GAME	MSGAME<CR>
	Neo:6 Cinema		NEO6CINEMA	MSNEO6CINEMA<CR>
	Neo:6 Music		NEO6MUSIC	MSNEO6MUSIC<CR>
Quick Select 1-4 Mode	Quick1		QUICK1	MSQUICK1<CR>
	Quick2		QUICK2	MSQUICK2<CR>
	Quick3		QUICK3	MSQUICK3<CR>
	Quick4		QUICK4	MSQUICK4<CR>

CATEGORY	CONTENTS		COMMAND	PARAMETER	CODE	NOTES		
SD Status	Set force <b>Auto</b> mode (Priority: <b>HDMI</b> > <b>Digital</b> > <b>Analog</b> )		SD	AUTO	SDAUTO<CR>			
	Set force <b>HDMI Input</b> Mode			HDMI	SDHDMI<CR>			
	Set force <b>Digital Input</b> (Optical, Coaxial) Mode			DIGITAL	SDDIGITAL<CR>			
	Set force <b>Analog Input</b> Mode			ANALOG	SDANALOG<CR>			
Parameter Setting	Bass	Up	PS	BAS UP	PSBAS UP<CR>			
		Down		BAS DOWN	PSBAS DOWN<CR>			
		Direct change to **dB		BAS **	PSBAS **<CR>	** : 40 to 60 by ASCII 40 (-10 dB), 50 (0 dB), 60 (10 dB)		
	Treble	Up		TRE UP	PSTRE UP<CR>			
		Down		TRE DOWN	PSTRE DOWN<CR>			
		Direct change to **dB		TRE **	PSTRE **<CR>	** : 40 to 60 by ASCII 40 (-10 dB), 50 (0 dB), 60 (10 dB)		
	DRC Direct Change	Auto		DRC AUTO	PSDRC AUTO<CR>			
		On		DRC ON	PSDRC ON<CR>			
		Off		DRC OFF	PSDRC OFF<CR>			
	LFE	Up		LFE UP	PSLFE UP<CR>			
		Down		LFE DOWN	PSLFE DOWN<CR>			
		Direct change to **dB		LFE **	PSLFE **<CR>	** : 0 to 10 by ASCII 0 (0 dB), 10 (-10 dB)		
	Panorama	On		PAN ON	PSPAN ON<CR>			
		Off		PAN OFF	PSPAN OFF<CR>			
	Dimension	Up		DIM UP	PSDIM UP<CR>			
		Down		DIM DOWN	PSDIM DOWN<CR>			
		Direct change to **dB		DIM **	PSDIM **<CR>	** : 0 to 14 by ASCII 0 (-7), 7 (0), 14 (+7)		
	Center Width	Up		CEN UP	PSCEN UP<CR>			
		Down		CEN DOWN	PSCEN DOWN<CR>			
		Direct change to **dB		CEN **	PSCEN **<CR>	** : 0 to 7 by ASCII		
	Zone 2 Control	Zone2 Mode Set and Select Source		DVD	Z2	DVD	Z2DVD<CR>	
				Dock		DOCK	Z2DOCK<CR>	
				BD		BD	Z2BD<CR>	
				SAT/CBL		SAT/CBL	Z2SAT<CR>	
CD			CD	Z2CD<CR>				
Tuner			TUNER	Z2TUNER<CR>				

CATEGORY	CONTENTS	COMMAND	PARAMETER	CODE	
NET/USB/BT Control	"Cursor Up" Control	NS	90	NS90<CR>	
	"Cursor Down" Control		91	NS91<CR>	
	"Cursor Left" Control		92	NS92<CR>	
	"Cursor Right" Control		93	NS93<CR>	
	"Enter" Control		94	NS94<CR>	
	"Play" Control		9A	NS9A<CR>	
	"Stop" Control		9C	NS9C<CR>	
	"Skip Plus" Control		9D	NS9D<CR>	
	"Skip Minus" Control		9E	NS9E<CR>	
	Menu		MENU	NSMEN<CR>	
	Return		RETURN	NSRTN<CR>	
System Control	"Cursor Up" Control	MN	CUP	MNCUP<CR>	
	"Cursor Down" Control		CDN	MNCDN<CR>	
	"Cursor Left" Control		CLT	MNCLT<CR>	
	"Cursor Right" Control		CRT	MNCRT<CR>	
	"Enter" Control		ENT	MNENT<CR>	
	OSD Menu		On	MEN ON	MNMEN ON<CR>
		Off	MEN OFF	MNMEN OFF<CR>	
	Remote Control Lock On/Off	On	SY	REMOTE LOCK ON	SYREMOTE LOCK ON<CR>
		Off		REMOTE LOCK OFF	SYREMOTE LOCK OFF<CR>
	Panel Button (Except Master Vol.) Control Lock On	PANEL LOCK ON		SYPANEL LOCK ON<CR>	
	Panel Button & Master Vol. Control Lock On	PANEL+V LOCK OFF		SYPANEL+V LOCK ON<CR>	
	Panel Button & Master Vol. Control Lock Off	PANEL LOCK OFF		SYPANEL LOCK OFF<CR>	

## Status Request/Information Codes

Status Request Command (Host → DN-700AVP)		Status Information Command and Status Command (DN-700AVP → Host)			NOTES	
REQUEST	COMMAND	CONTENTS		COMMAND		
Power	PW Status	PW?<CR>		Power On	PWON<CR>	
				Standby	PWSTANDBY<CR>	
Master Volume	MV?<CR>	**dB		MV **<CR>	** : 0 to 90 by ASCII 0 (Max), 90 (Min)	
Channel Volume	CV?<CR>	Front Lch	Direct change to **dB	CVFL **<CR>	** : 40 to 60 by ASCII 40 (-10 dB), 50 (0 dB), 60 (10 dB)	
		Front Rch	Direct change to **dB	CVFR **<CR>	** : 40 to 60 by ASCII 40 (-10 dB), 50 (0 dB), 60 (11 dB)	
		Center ch	Direct change to **dB	CVC **<CR>	** : 40 to 60 by ASCII 40 (-10 dB), 50 (0 dB), 60 (12 dB)	
		Subwoofer ch	Direct change to **dB	CVSW **<CR>	** : 40 to 60 by ASCII 40 (-10 dB), 50 (0 dB), 60 (13 dB)	
		Surround Lch	Direct change to **dB	CVSL **<CR>	** : 40 to 60 by ASCII 40 (-10 dB), 50 (0 dB), 60 (14 dB)	
		Surround Rch	Direct change to **dB	CVSR **<CR>	** : 40 to 60 by ASCII 40 (-10 dB), 50 (0 dB), 60 (15 dB)	
		Surround Back Lch	Direct change to **dB	CVSBL **<CR>	** : 40 to 60 by ASCII 40 (-10 dB), 50 (0 dB), 60 (16 dB)	
		Surround Back Rch	Direct change to **dB	CVSBR **<CR>	** : 40 to 60 by ASCII 40 (-10 dB), 50 (0 dB), 60 (17 dB)	
Output Mute	MU?<CR>	On		MUON<CR>		
		Off		MUOFF<CR>		
Main-Zone	ZM?<CR>	On		ZMON<CR>		
		Off		ZMOFF<CR>		

Status Request Command (Host → DN-700AVP)		Status Information Command and Status Command (DN-700AVP → Host)		COMMAND	NOTES
REQUEST	COMMAND	CONTENTS			
Channel Delay	CD?<CR>	Front Lch	Direct change to **dB	CDFL **<CR>	** : 0 to 100 by ASCII
		Front Rch	Direct change to **dB	CDFR **<CR>	** : 0 to 100 by ASCII
		Center ch	Direct change to **dB	CDC **<CR>	** : 0 to 100 by ASCII
		Subwoofer ch	Direct change to **dB	CDSW **<CR>	** : 0 to 100 by ASCII
		Surround Lch	Direct change to **dB	CDSL **<CR>	** : 0 to 100 by ASCII
		Surround Rch	Direct change to **dB	CDSR **<CR>	** : 0 to 100 by ASCII
		Surround Back Lch	Direct change to **dB	CDSBL **<CR>	** : 0 to 100 by ASCII
		Surround Back Rch	Direct change to **dB	CDSBR **<CR>	** : 0 to 100 by ASCII
Select <b>Input</b> Source	SI?<CR>	DVD		SIDVD<CR>	
		Dock		SIDOCK<CR>	
		BD		SIBD<CR>	
		SAT		SISAT<CR>	
		Game1		SIGAME1<CR>	
		Game2		SIGAME2<CR>	
		CD		SICD<CR>	
		Media		SIMEDIA<CR>	
		Bluetooth		SIBLUETOOTH<CR>	
		TV		SITV<CR>	
		Tuner		SITUNER<CR>	

Status Request Command (Host → DN-700AVP)		Status Information Command and Status Command (DN-700AVP → Host)			NOTES	
REQUEST	COMMAND	CONTENTS	COMMAND			
Select Surround Mode		MS?<CR>	Direct	MSDIRECT<CR>		
			Stereo	MSSTEREO<CR>		
			Movie	MSMOVIE<CR>		
			Music	MSMUSIC<CR>		
			Game	MSGAME<CR>		
			Neo:6 Cinema	MSNEO6CINEMA<CR>		
			Neo:6 Music	MSNEO6MUSIC<CR>		
			Hall	MSHALL<CR>		
			Room	MSROOM<CR>		
			Stadium	MSSTADIUM<CR>		
			Theater	MSTHEATER<CR>		
	Quick Select Mode	MSQUICK?<CR>	Not Select	MSQUICK0<CR>		
			Quick1	MSQUICK1<CR>		
			Quick2	MSQUICK2<CR>		
Quick3			MSQUICK3<CR>			
Quick4			MSQUICK4<CR>			
SD Status		SD?<CR>	Set force <b>HDMI Input</b> Mode	SDHDMI<CR>		
			Set force <b>Digital Input</b> (Optical, Coaxial) Mode	SDDIGITAL<CR>		
			Set force <b>Analog Input</b> Mode	SDANALOG<CR>		
Parameter Setting	Bass	PSBAS ?<CR>	Direct change to **dB	PSBAS **<CR>	** : 40 to 60 by ASCII 40 (-10 dB), 50 (0 dB), 60 (10 dB)	
	Treble	PSTRE ?<CR>	Direct change to **dB	PSTRE **<CR>	** : 40 to 60 by ASCII 40 (-10 dB), 50 (0 dB), 60 (10 dB)	
	DRC Direct Change	PSDRC ?<CR>	Auto	PSDRC AUTO<CR>		
			On	PSDRC ON<CR>		
			Off	PSDRC OFF<CR>		
	LFE	PSLFE ?<CR>	Direct change to **dB	PSLFE **<CR>	** : 40 to 60 by ASCII 40 (-10 dB), 50 (0 dB), 60 (10 dB)	
	Panorama	PSPAN ?<CR>	On	PSPAN ON<CR>		
			Off	PSPAN OFF<CR>		
Dimension	PSDIM ?<CR>	Direct change to **dB	PSDIM **<CR>	** : 40 to 60 by ASCII 40 (-10 dB), 50 (0 dB), 60 (10 dB)		
Center Width	PSCEN ?<CR>	Direct change to **dB	PSCEN **<CR>	** : 0 to 7 by ASCII		
Zone2 Control	Status	Z2?<CR>	Zone2 Mode Set, and Select Source	DVD	Z2DVD<CR>	
				Dock	Z2DOCK<CR>	
				BD	Z2BD<CR>	
				SAT/CBL	Z2SAT<CR>	
				CD	Z2CD<CR>	
				Tuner	Z2TUNER<CR>	

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