

DENON
PROFESSIONAL

DN-700CB

Serial Command Protocol Guide
English

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Introduction

Thank you for purchasing the DN-700CB. 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.

For additional product support, visit denonpro.com/support.

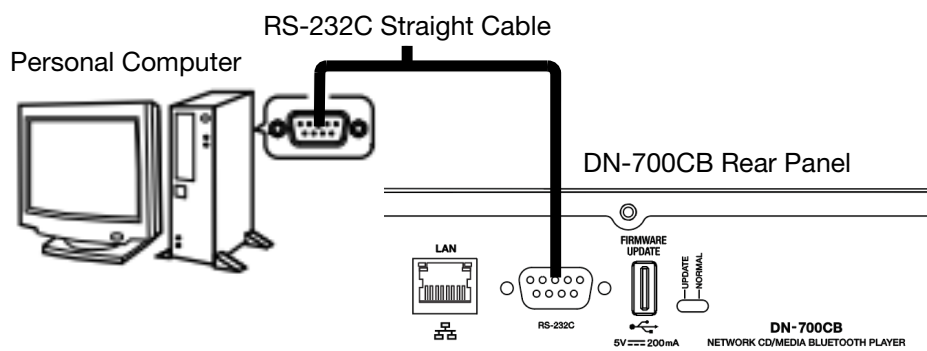
General Overview

With RS-232C serial remote control, a “host” machine such as a PC can be used to operate your DN-700CB. Throughout this document, the equipment used to control DN-700CB will be called the **Host**.

To learn more about the different types of serial communication and the code structure it requires, see the [Communication Protocol](#) section that starts on the next page. To view the complete list of serial command codes, see the [Control Command Codes](#) and [Status Request Command Codes/Status Information Codes](#) sections later in this manual.

Connecting the Host to DN-700CB

For serial remote control, you must first connect the host to your DN-700CB. Use an RS-232C Straight Cable (9-Pin D-Sub Male) to connect the RS-232C input on the rear panel of your DN-700CB to the corresponding input on the host.



Communication Protocol

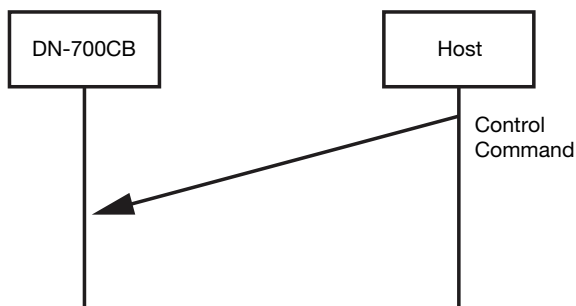
Types of Serial Communication

Three types of serial communication can be transmitted between the host and DN-700CB:

1. Control commands sent to DN-700CB from the host

You can use control commands to make DN-700CB perform a desired function (such as playing or skipping a track).

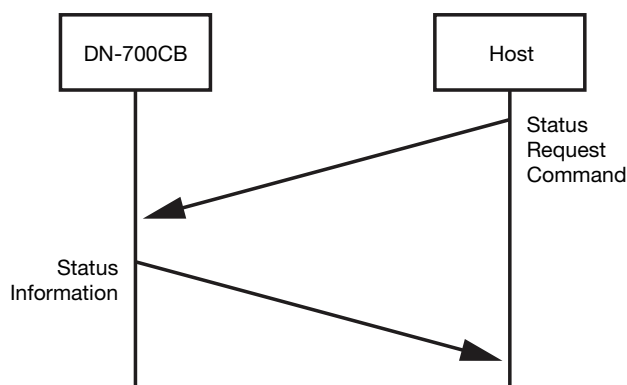
When DN-700CB receives a control command from the host, DN-700CB executes the command.



2. Status request commands sent to DN-700CB from the host

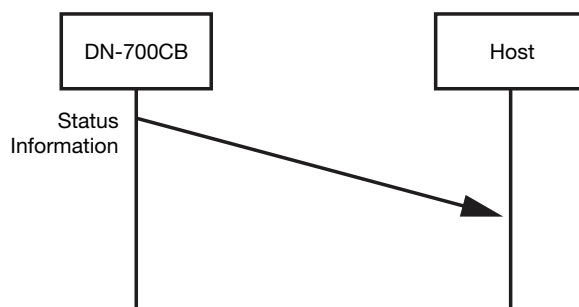
You can use a status request command to determine the current state of one of DN-700CB's components (such as whether there is a disc in the CD slot, how many tracks are in the current tracklist, etc.).

When DN-700CB receives a status request command from the host, DN-700CB answers the host with the requested status information.



3. Status information automatically sent to the host when a change is made from DN-700CB

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



Structure of the Codes

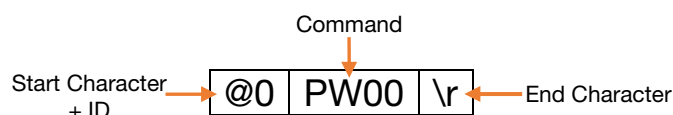
Serial communication between the host and DN-700CB uses ASCII Code from 0x20 to 0x7F.

All control command codes, status request command codes, and status information codes require three components that form a “packet.” In order, the components are the **start character + ID**, the **command**, and the **end character** (0x0D):

1. Start Character + ID: @ (0x40) + 0 (0x30)
2. Command: some letters and/or numbers that stand for a controllable feature of DN-700CB
3. End Character: \r (0x0D)

The required start character/ID and end character are the same in all codes, whereas the command portion varies with each code.

For example, the full control command code that the host would use to power on DN-700CB would be **@0PW00\r**:



Rules on Transmitting Command Codes

- When DN-700CB receives a control command or status request command from the host, DN-700CB should respond within 300 ms.
- When DN-700CB successfully executes a command that it receives from the host, DN-700CB sends an ACK signal (0x06) to the host (as well as the status information code in the case of a status request command).
- If DN-700CB receives an unknown command from the host or if a received command fails for some other reason, DN-700CB will send a NACK signal (0x15) to the host.
- When sending consecutive commands from the host, do not send the second command until DN-700CB has answered the first with the ACK (0x06) or NACK (0x15) signal. If the second command is sent before the ACK (0x06) or NACK (0x15) signal is received, DN-700CB will send the “Busy” status information code (**@0BDERBUSY**) to the host.
- If DN-700CB does not receive a command that the host sent within 300 ms, the host will automatically send the same command up to two additional times. If DN-700CB still does not receive the command after the second automatic attempt, the process will timeout, and the host will send the end character to DN-700CB.
- Do not send a second status request command from the host until DN-700CB has responded to the first.
- When sending a command to DN-700CB from the host, make sure that no longer than 5 ms passes between entering each character in the command code.
- Wait at least one second after sending the Power On command before sending the next command.
- When status information is automatically sent to the host after a change to DN-700CB is made from the device itself, the host will send an ACK (0x06) signal to DN-700CB. If DN-700CB does not receive the ACK signal within 300 ms, it will automatically send the status information to the host again. If DN-700CB then fails to receive the ACK (0x06) signal again, the process will timeout.

Control Command Codes

Control Commands (Host → DN-700CB)			
CATEGORY	CONTENTS	CODE	DESCRIPTION
Power	Power On	@0PW00	Powers on DN-700CB
	Power Off	@0PW01	Powers off DN-700CB
Track Playback	Play	@02353	Plays the current track
	Pause	@02348	Pauses the current track
	Stop	@02354	Stops the current track
	Turn Mute On	@0mt00	Mutes audio for the current track
	Turn Mute Off	@0mt01	Unmutes audio for the current track
Track Selection	Restart/Previous Track	@02333	Restarts the current track or skips to the previous track in the tracklist
	Next Track	@02332	Skips to the next track in the tracklist
	Select Track Number	@0Trnnnn	Selects the track corresponding to the entered number, where <i>nnnn</i> (number) = 0001 - 9999
Track Searching	Rewind	@0PCSLSR	Rewinds the current track
	Fast Forward	@0PCSLSF	Fast forwards the current track
Number Buttons	Enter Number	@0PCTKEY <i>n</i>	Selects the track corresponding to the entered number, where <i>n</i> (number) = 0 - 9; Selects and plays the track if Hot Start is activated
Time Display	Display Elapsed	@0PCTMDEL	Sets the Display screen to show the amount of time that has passed in the currently selected track
	Display Total Elapsed	@0PCTMDTL	Sets the Display screen to show the amount of time that has passed in the current tracklist
	Display Total Remaining	@0PCTMDTR	Sets the Display screen to show the amount of time remaining in the current tracklist

Status Request Command Codes/Status Information Codes

Status Request Commands (Host → DN-700CB)		Status Information (DN-700CB → Host)		DESCRIPTION
REQUEST	CODE	ANSWER	CODE	
Power Status	@0?PW	On	ACK	The power is on
		Off	No answer	The power is off
CD Status	@0?CD	No Disc	@0CDNC	There is no disc in the CD slot
		Disc In	@0CDCI	There is a disc in the CD slot
Track Status	@0?ST	Playing	@0STPL	The current track is playing
		Paused	@0STPP	The current track is paused
		Rewinding	@0STDVSR	The current track is rewinding
		Fast Forwarding	@0STDVSF	The current track is fast forwarding
Track Number	@0?Tr	Number of the current track	@0Trnnnn	The current track's number within the tracklist, where <i>nnnn</i> (number) = 0000 - 9999; <i>nnnn</i> = UNKN if the track number is undetectable
Tracklist Size	@0?Tt	Total number of tracks	@0Ttnnnn	The total number of tracks in the current tracklist, where <i>nnnn</i> (number) = 0000 - 9999; <i>nnnn</i> = UNKN if the total number of tracks is undetectable
Track Title	@0?ti	Title of the current track	@0tixxx	The title of the current track, where <i>xxx</i> = up to 64 characters of the title
Track Artist	@0?at	Artist on the current track	@0atxxx	The name of the artist on current track, where <i>xxx</i> = up to 64 characters of the artist name
Album Title	@0?al	Album for the current track	@0alxxx	The name of the album that the current track is on, where <i>xxx</i> = up to 64 characters of the album name
Track Time	@0?tl	Time position of the current track	@0tlMMMSS	The time position of the current track, where <i>MMM</i> (minutes) = 000 - 999 and <i>SS</i> (seconds) = 00 - 59
Elapsed Track Time	@0?ET	Time elapsed in the track	@0ETHhhmmss	The amount of time that has elapsed in the current track, where <i>hhh</i> (hours) = 000 - 999, <i>mm</i> (minutes) = 00 - 59, and <i>ss</i> (seconds) = 00 - 59
Remaining Track Time	@0?RM	Time remaining in the track	@0RMhhhhmmss	The amount of time remaining before the current track ends, where <i>hhh</i> (hours) = 000 - 999, <i>mm</i> (minutes) = 00 - 59, and <i>ss</i> (seconds) = 00 - 59

Appendix

RS-232C Specifications

Connector	9-Pin D-sub Female	
Mode	Full Duplex	
Transfer Rate	9600, 38400, or 115200 bps	
Data Length	8 bits	
Parity	None	
Start Bit	1 bit	
Stop Bit	1 bit	
Flow Control	None	
Pin Arrangement	Pin Number	Signal Name
	1	Ground
	6	NC
	2	TxD
	7	RTS*
	3	RxD
	8	NC
	4	NC
	9	NC
5	S. Ground	

*5 V / 500 mA power supply can be used for RTS.

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