

dorpo RS232 Control Protocol V4.0

1. Version History

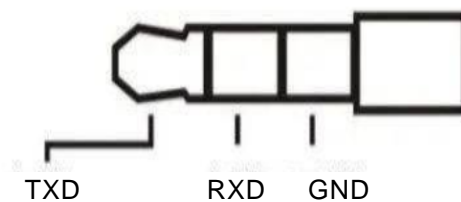
Author	Date	Version	Models	Remark
Peter	20/4/2023	V1.0	dp X3	Initial release
Peter	14/5/2024	V2.0	dp X3 UHP3001	Update
Peter	6/9/2024	V3.0	dp X3 UHP3001	Update
Peter	28/11/2024	V4.0	dp X3 HUP-3001 X300	Update

2. Document Overview

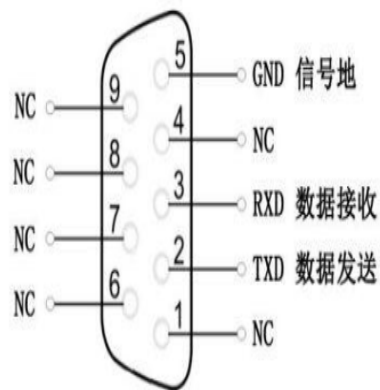
dorpo media players feature an RS-232 control port compliant with 3.5mm/DB9 serial communication standards (DCE). This document specifies the control protocol for dorpo 8K players, including communication configurations and command definitions, enabling centralized control via RS-232.

3. RS-232 Port Pinout

Signal	TXD	RXD	GND
Position of 3.5 port pin	Top	Middle	end
Position of BD9 9pin	#2	#3	#5



3.5mm terminal (X3)



BD9 9-pin pin position illustration (Applicable to standard RS 232 interfaces such as UHP-3001/X300)

4. RS-232 Port communication configuration

Baud rate	Data bits	Stop bit	Parity check	Flow Control
9600	8	1	N/A	N/A

5. Structure of command

Each command begins with the # symbol (0x23 in ASCII) followed by a 3-character command code. At the end of the command, the carriage return character (ASCII code 0x0d) is used as the end symbol. The line breaks (ASCII 0xa) can follow the carriage return character as needed, but is ignored when processing command. The maximum length of an command, including the start symbol and the end symbol, must not exceed 25 bytes.

The following is an example of the command structure:

<command> = <command start symbol><command code><command end symbol>

< command start symbol > = # (ASCII 0x23)

<ommand code> =<byte>< byte >< byte >

< command end symbol >= carriage return (ASCII 0x0d)[line breaks(ASCII 0x0a)]

i.e. : #PON\r

#POF\r

6. Respond structure

When the player receives the command, it executes it and sends back a response. The response starts with the "@" symbol (0x40 for ASCII), followed by the original script, followed by the resulting code of the command execution, "OK" (successful execution) or "ER" (error execution), and separated by a space (0x20 for ASCII) before the resulting code. The response is terminated by a carriage return (ASCII 0x0d).

A response contains a maximum of 25 bytes including the start and end symbols.

The following is an example of the respond structure:

<respond> = <start symbol><command code><space><result code><end symbol>

<start symbol> = @ (ASCII 0x40)

<command code> = <byte><byte><byte>

<result code> = OK(successful execution) / ER(error execution)

<space> = space (ASCII 0x20)

<end symbol > = carriage return (ASCII 0x0d)

i.e. : @PON OK\r

 @POF ER\r

7. Order of respond

Commands are executed in the order received, and the control terminal sends the next command after receiving the response from the player. If the player receives a new command and is still executing the previous command, the player will put the new command into the command sequence or give up the previous command, the specific behavior depends on the internal program of the player. The control terminal should try to avoid sending multiple commands frequently before receiving a response.

If the control terminal does not receive a response 10 seconds after the player sends the command the command can be considered lost in the execution of the command or in the response transmission, and the command can be retransmitted.

8. RS-232 command code list

The table below is a direct mapping between the dp player infrared remote control keys and RS232 command, which do not require any parameters. The player receives these commands equivalent to receiving the key commands of the corresponding mapping infrared remote control. Sending commands is similar to sending keys through the remote control. After receiving the

commands, the player responds OK or ER according to the processing result.

Code	Hexadecimal code	RC Key	Response Example	Function
POW	23 50 4F 57 0D	Power	OK ON OK OFF	Power on or off the player
PON	23 50 4F 4E 0D	Power	OK ON	Power on the player
POF	23 50 4F 46 0D	Power	OK OFF	Power off the player
MUT	23 4D 55 54 0D	Mute	OK MUTE OK UNMUTE	Mute or Unmute
NUP	23 4E 55 50 0D	Navigation Up	OK	Navigation Up
NDN	23 4E 44 4E 0D	Navigation Down	OK	Navigation Down
NLT	23 4E 4C 54 0D	Navigation Left	OK	Navigation Left
NRT	23 4E 52 54 0D	Navigation Right	OK	Navigation Right
ENT	23 45 4E 54 0D	Enter	/	Navigation confirm
RET	23 52 45 54 0D	Return	OK	Return last menu or status
HOM	23 48 4F 4D 0D	Home	/	To Homepage
VOP	23 56 4F 50 0D	Volume+	OK	Increase volume
VOD	23 56 4F 44 0D	Volume-	OK	Decrease volume
PLU	23 50 4C 55 0D	Play/Pause	/	Play or Pause
PLA	23 50 4C 41 0D	Play/Pause	/	Play
PAU	23 50 41 55 0D	Play/Pause	/	Pause
INF	23 49 4E 46 0D	Information	OK	Information
OPT	23 4F 50 54 0D	Option	OK	Option
SET	23 53 45 54 0D	Set	OK	Settings
NU1	23 4E 55 31 0D	1	OK	Number 1
NU2	23 4E 55 32 0D	2	OK	Number 2
NU3	23 4E 55 33 0D	3	OK	Number 3
NU4	23 4E 55 34 0D	4	OK	Number 4
NU5	23 4E 55 35 0D	5	OK	Number 5
NU6	23 4E 55 36 0D	6	OK	Number 6
NU7	23 4E 55 37 0D	7	OK	Number 7

NU8	23 4E 55 38 0D	8	OK	Number 8
NU9	23 4E 55 39 0D	9	OK	Number 9
NU0	23 4E 55 30 0D	0	OK	Number 0
CLR	23 43 4C 52 0D	Delete	OK	Delete content
UHD	23 55 48 44 0D	Resolution	OK	Resolution
SUB	23 53 55 42 0D	Subtitle	OK	Subtitle
AUD	23 41 55 44 0D	Audio Track	OK	Audio Track
PUD	23 50 55 44 0D	Previous/Pag e up	OK	Previous/Page up
PDN	23 50 44 4E 0D	Next/Page Down	OK	Next/Page Down
RED	23 52 45 44 0D	Red	OK	Customize
GRN	23 47 52 4E 0D	Green	OK	Customize
YLW	23 59 4C 57 0D	Yellow	OK	Customize
BLU	23 42 4C 55 0D	Blue	OK	Customize
MOV	23 4D 4F 56 0D	Movie	OK	Movie
MUS	23 4D 55 53 0D	Music	OK	Music
PHO	23 50 48 4F 0D	Photo	OK	Photo
FIL	23 46 49 4C 0D	File	OK	File
STP	23 53 54 50 0D	Stop	/	Stop
FWD	23 46 57 44 0D	Fast Forward	OK	Fast Forward
REV	23 52 45 56 0D	Fast Reverse	OK	Fast Reverse

9. System event-triggered response code

System event	Output the response ASCII code	Output the response hexadecimal code
Start playing video	MOV_Play	40 4D 4F 56 5F 50 6C 61 79 20 4F 4B 0D
Pause playing video	MOV_Pause	40 4D 4F 56 5F 50 61 75 73 65 20 4F 4B 0D
The video is paused for 5 minutes	MOV_Pause5m	40 4D 4F 56 5F 50 61 75 73 65 35 6D 20 4F 4B 0D
The video is paused for 10 minutes	MOV_Pause10m	40 4D 4F 56 5F 50 61 75 73 65 31 30 6D 20 4F 4B 0D
The video resumed playing.	MOV_RCYPlay	40 4D 4F 56 5F 52 43 59 50 6C 61 79 20 4F

		4B 0D
The video has stopped playing.	MOV_Stop	40 4D 4F 56 5F 53 74 6F 70 20 4F 4B 0D
The music begins to play.	MUS_Play	40 4D 55 53 5F 50 6C 61 79 20 4F 4B 0D
The music has paused.	MUS_Pause	40 4D 55 53 5F 50 61 75 73 65 20 4F 4B 0D
The music is paused for 5 minutes	MUS_Pause5m	40 4D 55 53 5F 50 61 75 73 65 35 6D 20 4F 4B 0D
The music is paused for 10 minutes	MUS_Pause10m	40 4D 55 53 5F 50 61 75 73 65 31 30 6D 20 4F 4B 0D
The music resumed playing.	MUS_RCYPlay	40 4D 55 53 5F 52 43 59 50 6C 61 79 20 4F 4B 0D
The music has stop playing.	MUS_Stop	40 4D 55 53 5F 53 74 6F 70 20 4F 4B 0D
Power off	POW_OFF	40 50 4F 57 5F 4F 46 46 20 4F 4B 0D
Power on	POW_ON	40 50 4F 57 5F 4F 4E 20 4F 4B 0D