

Kommander Central Control Protocol Documentation

Applicable to all Kommander series and customized versions.
Latest update corresponds to software versions **v8.1 and later**.

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1. Revision History

Update Description	Details	Modifier	Date
Added "3D Left/Right Switching" command for window control	Implemented in v6.4.12	Ren Xian	2022/01/19
Play/Pause/Stop/Scenario invocation now affects timelines	Implemented in v6.8.8	Ren Xian	2022/07/09
Added Office window controls: Home/End/Specific Page	Implemented in v6.14.3 and 6.11.64+	Ren Xian	2023/02/28
Added timeline-specific Play/Pause/Stop controls	Implemented in v7.0	Ren Xian	2023/03/01
Scenario invocation now checks current scenario status	Implemented in v7.0 branch	Ren Xian	2023/07/27
Added global brightness control to general commands	Initial implementation in T0 8.0.2 (v7.0 branch)	Ren Xian	2023/10/19
Added "Replace Window Content with Specified Media" command	Implemented in 8.1.x	Ren Xian	2024/12/12
Added global Fast Forward/Rewind (by seconds) commands	Implemented in 6.11.x	Ren Xian	2025/01/15

2. Connection Parameters

1) RS232:

- Baud Rate: 115200
- Data Bits: 8
- Stop Bits: 1
- Parity: None

2) Chassis Rear 485 Interface:

- Baud Rate: 9600
- Stop Bits: 1

- Data Bits: 8
- Parity: None
- 3) **Ethernet (UDP):**
 - Port: 5000

3. Frame Format

Command Frame Structure:

Field	Description	Size
ProHead	Frame start identifier (0x14)	1 byte
CmdH	Command code high byte	1 byte
CmdL	Command code low byte	1 byte
FrameLenL	Frame length low byte	1 byte
FrameLenH	Frame length high byte	1 byte
Data1	Data field 1	1 byte
Data2	Data field 2	1 byte
Sum	Checksum (see calculation below)	1 byte
ProEnd	Frame end markers (0x0D 0x0A)	2 bytes

Checksum Calculation:

$$\text{Sum} = \text{ProHead} + \text{CmdH} + \text{CmdL} + \text{FrameLenL} + \text{FrameLenH} + \text{Data1} + \text{Data2}$$

Notes:

- **Frame Length:** Total bytes in the frame. Default length is 0x0A. For example, specifying a PPT page jump increases the length to 0x0B.

Response Frame Structure:

Field	Description	Size
ProHead	Frame start identifier (0x14)	1 byte
CmdH	Command code high byte	1 byte
CmdL	Command code low byte	1 byte
FrameLenL	Frame length low byte	1 byte
FrameLenH	Frame length high byte	1 byte
Data	Variable-length response data	n bytes
Sum	Checksum (see calculation below)	1 byte
ProEnd	Frame end markers (0x0D 0x0A)	2 bytes

Checksum Calculation:

Sum = ProHead + CmdH + CmdL + FrameLenL + FrameLenH + Data

4. Protocols

4.1 Control Commands

4.1.1 Cmd 0x0000 – Power-On Self-Test

Command Example: 14 00 00 0A 00 00 00 1E 0D 0A

Command Frame Content:

Field	Value	Description
CmdH	0x00	
CmdL	0x00	
FrameLenL	0x0a	
FrameLenH	0x00	

Field	Value	Description
Data1	0x00	
Data2	0x00	

Response Frame Content:

Field	Value	Description
CmdH	0x00	
CmdL	0x00	
FrameLenL	0x0C	
FrameLenH	0x00	
Data1	0x11/0x10	Human-Machine Interface (HMI) Status: 0x11 = Normal, 0x10 = Faulty.
Data2	0x11/0x10	Central Processing Engine Status: 0x11 = Normal, 0x10 = Faulty.
Data3	0x11/0x10	Image Processing Engine Status: 0x11 = Normal, 0x10 = Faulty.
Data4	0x11/0x10	System Memory Status: 0x11 = Normal, 0x10 = Faulty.

4.1.2 Cmd 0x000A – Black Screen/Normal

Command Example: 14 00 0A 0A 00 00 00 28 0D 0A

Command Frame Content:

Field	Value	Description
CmdH	0x00	
CmdL	0x0A	
FrameLenL	0x0A	
FrameLenH	0x00	

Field	Value	Description
Data1	0x00	
Data2	0x00	

Response Frame Content:

Field	Value	Description
CmdH	0x00	
CmdL	0x0A	
FrameLenL	0x0A	
FrameLenH	0x00	
Data1	0x11/0x10	Status: 0x11 = Black Screen Enabled, 0x10 = Normal Mode.
Data2	0xFF	

4.1.3 Cmd 0x0015 – Play

Command Example:1400150a000000330d0a

Command Frame Content:

Field	Value	Description
CmdH	0x00	
CmdL	0x15	
FrameLenL	0x0a	
FrameLenH	0x00	
Data1	0x00	
Data2	Timeline ID	Status: 00: Resumes playback for all active timelines. 01–ff: Plays the timeline corresponding to the specified ID.

Response Frame Content:

Field	Value	Description
CmdH	0x00	
CmdL	0x15	
FrameLenL	0x0a	
FrameLenH	0x00	
Data 1	Sta	Status: 0x11 = Play, Others: none.
Data 2	Timeline ID	

4.1.4 Cmd 0x0016 – Pause

Command Example: 1400160a000000340d0a

Command Frame Content:

Field	Value	Description
CmdH	0x00	
CmdL	0x16	
FrameLenL	0x0a	
FrameLenH	0x00	
Data1	0x00	
Data2	Timeline ID	Status: 00: Pauses playback for all active timelines. 01–ff: Pauses the timeline corresponding to the specified ID.

Response Frame Content:

Field	Value	Description
CmdH	0x00	
CmdL	0x16	
FrameLenL	0x0a	
FrameLenH	0x00	
Data 1	Sta	Status: 0x11 = Pause, Others: none.
Data 2	Timeline ID	

4.1.5 Cmd 0x0017 – Stop

Command Example: 1400170a000000350d0a

Command Frame Content:

Field	Value	Description
CmdH	0x00	
CmdL	0x17	
FrameLenL	0x0a	
FrameLenH	0x00	
Data1	0x00	
Data2	Timeline ID	Status: 00: Stops playback for all active timelines. 01–ff: Stops the timeline corresponding to the specified ID.

Response Frame Content:

Field	Value	Description
CmdH	0x00	
CmdL	0x17	
FrameLenL	0x0a	
FrameLenH	0x00	
Data 1	Sta	Status: 0x11 =Stop, Others: none.
Data 2	Timeline ID	

4.1.6 Cmd 0x0019 – Shut down

Command Example: 1400190a000000370d0a

Command Frame Content:

Field	Value	Description
CmdH	0x00	
CmdL	0x19	
FrameLenL	0x0a	
FrameLenH	0x00	
Data1	0x00	
Data2	0x00	

Response Frame Content:

Field	Value	Description
CmdH	0x00	
CmdL	0x19	
FrameLenL	0x0a	
FrameLenH	0x00	
Data 1	ResultH	0xaaaa: Success
Data 2	ResultL	Others: Failure

4.1.7 Cmd 0x001a – Volume +

Command Example: 14001a0a000000380d0a

Command Frame Content:

Field	Value	Description
CmdH	0x00	
CmdL	0x1a	
FrameLenL	0x0a	
FrameLenH	0x00	
Data1	0x00	Status: 00: Adjusts the global volume . 01-ff: Adjusts the volume of the specified timeline (by index). This setting has no effect on plan projects. (v8.1)
Data2	0x00	

Response Frame Content:

Field	Value	Description
CmdH	0x00	
CmdL	0x1a	
FrameLenL	0x0a	
FrameLenH	0x00	
Data 1	ResultH	0xaaaa: Success
Data 2	ResultL	Others: Failure

4.1.8 Cmd 0x001b – Volume -

Command Example: 14001b0a000000390d0a

Command Frame Content:

Field	Value	Description
CmdH	0x00	
CmdL	0x1b	
FrameLenL	0x0a	
FrameLenH	0x00	
Data1	0x00	Status: 00: Adjusts the global volume . 01-ff: Adjusts the volume of the specified timeline (by index). This setting has no effect on plan projects. (v8.1)
Data2	0x00	

Response Frame Content:

Field	Value	Description
CmdH	0x00	
CmdL	0x1b	
FrameLenL	0x0a	
FrameLenH	0x00	
Data 1	ResultH	0xaaaa: Success
Data2	ResultL	Others: Failure

4.1.9 Cmd 0x001c – Mute**Command Example: 14001c0a0000003a0d0a****Command Frame Content:**

Field	Value	Description
CmdH	0x00	
CmdL	0x1c	
FrameLenL	0x0a	
FrameLenH	0x00	
Data1	0x00	Status: 0x00: Toggle mute state based on current status. 0x55: Unmute 0xaa: Mute
Data2	0x00	01-ff: For timeline projects, adjusts the volume of the specified timeline (by index). This has no effect on plan projects. (v8.1)

Response Frame Content:

Field	Value	Description
CmdH	0x00	
CmdL	0x1c	
FrameLenL	0x0a	
FrameLenH	0x00	
Data 1	sta	0x11: Mute 0x10: Unmute
Data2	xx	

4.1.10 Cmd 0x001d – “Multi-device” Sync

Command Example: 14001d0a0000003b0d0a

Command Frame Content:

Field	Value	Description
CmdH	0x00	
CmdL	0x1d	
FrameLenL	0x0a	
FrameLenH	0x00	
Data1	0x00	
Data2	0x00	

Response Frame Content:

Field	Value	Description
CmdH	0x00	
CmdL	0x1c	
FrameLenL	0x0a	
FrameLenH	0x00	
Data 1	ResultH	0xaaaa: Success Others: Failure
Data2	ResultL	

4.1.11 Cmd 0x001e – End mode of main file

Command Example: 14001e0a0000003c0d0a

Command Frame Content:

Field	Value	Description
CmdH	0x00	
CmdL	0x1e	
FrameLenL	0x0a	
FrameLenH	0x00	
Data1	mode	0x00: Loop 0x01: Pause on Last Frame 0x02: Stop 0x03: Jump to Next Plan
Data2	0x00	

Response Frame Content:

Field	Value	Description
CmdH	0x00	
CmdL	0x1e	
FrameLenL	0x0a	
FrameLenH	0x00	
Data 1	ResultH	0xaaaa: Success Others: Failure
Data2	ResultL	

4.1.12 Cmd 0x001f – Plan name query

Command Example: 14001f0a0000003d0d0a

Command Frame Content:

Field	Value	Description
CmdH	0x00	
CmdL	0x1f	
FrameLenL	0x0a	
FrameLenH	0x00	
Data1	type	0x00 : Current Active Plan (real-time playback) 0x01 : Plans
Data2	Preset Id	If type is 0x00: This mode is invalid. If type is 0x01: Queries plan numbers (1~n).

Response Frame Content:

Field	Value	Description
CmdH	0x00	
CmdL	0x1f	
FrameLenL	frameLen L	
FrameLenH	frameLen H	
Data1	type	
Data2	presetId	Plan No. 1~n
Data3	Name data 0	
Data4	Name data 1	
...	...	
DataN	Name data m	

4.1.13 Cmd 0x0021 – General global commands

Command Example: 1400210a000100400d0a

Command Frame Content:

Field	Value	Description
CmdH	0x00	
CmdL	0x21	
FrameLenL	0x0a	
FrameLenH	0x00	
Data1	type	0x00: None 0x01: Last plan 0x02: Next plan 0x03: Last page of office 0x04: Next page of office 0x05: Global brightness +10 0x06: Global brightness -10 0x07: Set global brightness 0x08: Global fast forward 0x09: Global rewind
Data2	Param	For 07: brightness value For 08&09: the length(s) of fast-forward or rewind

Response Frame Content:

Field	Value	Description
CmdH	0x00	
CmdL	0x21	
FrameLenL	frameLen L	
FrameLenH	frameLen H	
Data1	type	
Data2	Result	0xaa: Success Others: Failure

4.1.14 Cmd 0x0022 – Global control command

Note:

1. The window number is the serial number in front of the material in the playback progress, you can also refer to the canvas file right-click menu under the Properties panel serial number
2. The date3 is added when the specified PPT is turned over, the low byte of the frame length should be 0b.
3. The id of the material in the media library can be viewed in tip or list mode.

Command Example: 1400220b00010100430d0a

Command Frame Content:

Field	Value	Description
CmdH	0x00	
CmdL	0x22	
FrameLenL	0x0b	
FrameLenH	0x00	
Data1	WinId	Window No. (1~N)
Data2	Opr	0x00: None 0x01: Play 0x02: Pause 0x03: Stop 0x05: 3D switch 0x06: Office (PDF) last page 0x07: Office (PDF) next page 0x08: Window on 0x09: Window hide 0x0a: Mute 0x0b: Unmute 0x0c: Volume +10 0x0d: Volume -10

		0x0e: Office (include PDF) go to the first page 0x0f: Office (include PDF) go to the last page 0x10: Office (include PDF) go to the specified page 0x11: Replace specified clips
Data3	0xxx	Xx is the page number of PowerPoint, the id of clips

Response Frame Content:

Field	Value	Description
CmdH	0x00	
CmdL	0x22	
FrameLenL	frameLen L	
FrameLenH	frameLen H	
Data1	WinId	
Data2	Opr	
Data3	Result	0xaa: Success Others: Failure

4.1.15 Cmd 0x0023 – Output(Display ports) control command

Command Example: 1400**23**0a00**0004**10d0a

Command Frame Content:

Field	Value	Description
CmdH	0x00	
CmdL	0x23	
FrameLenL	0x0a	
FrameLenH	0x00	
Data1	0x00	All outputs, will be adjusted later by id if supported.
Data2	Opr	0x00: enable all outputs 0x01: disable all outputs

Response Frame Content:

Field	Value	Description
CmdH	0x00	
CmdL	0x23	
FrameLenL	frameLen L	
FrameLenH	frameLen H	
Data1	0x00	
Data2	Opr	
Data3	Result	0xaa: Success Others: Failure

4.1.16 Cmd 0x0024 –File control command

Command Example: 1400240a0001022450d0a

Command Frame Content:

Field	Value	Description
CmdH	0x00	
CmdL	0x23	
FrameLenL	0x0a	
FrameLenH	0x00	
Data1	0xxx	Window id, the serial number in front of the material in the playback progress
Data2	Opr	0x00: For number type, reset 0x01: For number type, undo last operation 0x02: For number type, +1 0x03: For number type, +2 0x04: For number type, +3

Response Frame Content:

Field	Value	Description
CmdH	0x00	
CmdL	0x23	
FrameLenL	frameLen L	
FrameLenH	frameLen H	
Data1	Opr	
Data2	Opr	
Data3	Result	0xaa: Success Others: Failure

4.1.17 Cmd 0x0111~0x0174 – Call plan(1~100)

Command Frame Content:

Field	Value	Description
CmdH	0x01	
CmdL	0x10+n	n: Plan number (1, 2, 3... 100)
FrameLenL	0x0a	
FrameLenH	0x00	
Data1	0xxx	0x00: Call and play 0x01: Call and pause 0x02: Call and follow current status
Data2	0x00	00: Call and play from begining 01: Call and continue playback

Response Frame Content:

Field	Value	Description
CmdH	0x01	
CmdL	0x10 + n	
FrameLenL	0x0a	
FrameLenH	0x00	
Data1	ResultH	0xaaaa: Success
Data2	ResultL	Others: Failure

Timeline Effect Description: Corresponds to the playback of the specified timeline and stops other timelines.

Command example - call and play:

Call plan 1 : 1401**11**0a000000**30**0d0a

Call plan 2 : 1401**12**0a000000**31**0d0a

Call plan 3 : 1401**13**0a000000**32**0d0a

Call plan 4 : 1401**14**0a000000**33**0d0a

Call plan 5 : 1401**15**0a000000**34**0d0a

Call plan 6 : 1401**16**0a000000**35**0d0a

Call plan 7 : 1401**17**0a000000**36**0d0a

Call plan 8 : 1401**18**0a000000**37**0d0a

Call plan 9 : 1401**19**0a000000**38**0d0a

Call plan 10: 1401**1a**0a000000**39**0d0a

Call plan 11: 1401**1b**0a000000**3a**0d0a

Call plan 12: 1401**1c**0a000000**3b**0d0a

Call plan 13: 1401**1d**0a000000**3c**0d0a

Call plan 14: 14011e0a0000003d0d0a

Call plan 15: 14011f0a0000003e0d0a

Call plan 16: 1401200a0000003f0d0a

Call plan 17: 1401210a000000400d0a

Call plan 18: 1401220a000000410d0a

Call plan 19: 1401230a000000420d0a

Call plan 20: 1401240a000000430d0a

4.1.18 Cmd 0x0211~X –Call the specified plan in the specified plan group

Command Example: 1402110a000000310d0a

Command Frame Content:

Field	Value	Description
CmdH	0x02	
CmdL	0x10+n	n: Plan number (1, 2, 3... 100), numbered from 1
FrameLenL	0x0a	
FrameLenH	0x00	
Data1	m	M: hexadecimal profile group number, numbered from 0
Data2	Operate	0x00: Call and play 0x01: Save plan 0x02: Delete plan

Response Frame Content:

Field	Value	Description
CmdH	0x01	
CmdL	0x10 + n	
FrameLenL	0x0a	
FrameLenH	0x00	
Data1	m	M: hexadecimal profile group number
Data2	ResultL	0x00: Call plan successfully 0xf0: Call plan failed 0x01: Save plan successfully 0xf1: Save plan failed 0x02: Delete plan successfully 0xf2: Delete plan failed