Appendix D: Network control protocol codes

Introduction

This appendix is part of the *SMART Board T Pro series installation and maintenance guide* (docs.smarttech.com/kb/172043) and is published as a standalone technical appendix. This document provides a complete list of control commands for managing the SMART Board T Pro series interactive display using the network control protocol. All commands follow the standard data frame and use `get` and `set` operations to retrieve or adjust display settings. Follow the instructions in *Appendix C* (docs.smarttech.com/kb/172043) to configure the control system application to match the display's network settings, then refer to this appendix to manage the display.

LAN details

LAN Detail	Value
Network protocol	IP
Transport protocol	Must support both TCP and UDP
TCP/IP port	4664

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Packet frame

The device communicating with the display is the master. It sends requests to the display, and the display replies with responses. The display will not send packets autonomously. There are only two fundamental operations, `set` and `get`.

> **Note**
> Unsupported values may return Success response, but do not result in an actual change in state.

Set request

Byte index	Function	Value	Notes
0	Start of frame	0x3A	
1	Source address	0x30	This is the device sending the Room Control command
2	Dest address	0x31	This is the SMART Board display
3	Function code	0x53	Set request
4	Room control code	Varies	Identifies the value to `set`
5	Setting value	Varies	Hexadecimal representation of ASCII characters, 3 bytes in length, used to represent a single value where the most significant byte appears first. For example, 0x30 0x31 0x32 is equal to 012.
6			
7			
8	End of frame	0x0D	

Set response

Byte index	Function	Value	Notes
0	Start of frame	0x34	
1	Source address	0x30	This is the device that sent the Room Control command
2	Dest address	0x31	This is the SMART Board display
3	Status	Varies	Either 0x2B for success, or 0x2D for failure
4	End of frame	0x0D	

Get request

Byte index	Function	Value	Notes
0	Start of Frame	0x3A	
1	Source address	0x30	This is the device sending the Room Control command
2	Dest address	0x31	This is the SMART Board display
3	Function code	0x47	Get request
4	Room control code	Varies	Identifies the value to get
5	Unused	0x30	
6		0x30	
7		0x30	
8	End of Frame	0x0D	

Get response

Byte index	Function	Value	Notes
0	Start of Frame	0x3A	
1	Source address	0x30	This is the device that sent the Room Control command
2	Dest address	0x31	This is the SMART Board display
3	Function code	0x72	Get response
4	Room control code	Varies	Identifies the value to get
5	Setting value	Varies	Hexadecimal representation of ASCII characters, 3 bytes in length, used to represent a single value where the most significant byte appears first. For example, 0x30 0x31 0x32 is equal to 12.
6			
7			
8	End of frame	0x0D	

Room control commands

Notes

- Unsupported values may return a Success response, but do not result in an actual change in state.
- While in POWERSAVE, network control does not function. Transition to ON only works while in READY state.

Command name	Code (Hex)	Value (Decimal)	Set request Example (Hex)	Set response (Hex)	Get request (Hex)	Get response (Hex)
Power State	30	000: READY	3A 30 31 53 30 30 30 30 0D	34 30 31 2B 0D (Success) 34 30 31 2D 0D (Failure)	3A 30 31 47 30 30 30 30 0D	3A 30 31 72 30 XX XX XX 0D
		001: ON	3A 30 31 53 30 30 30 31 0D			
		002: POWERSAVE	3A 30 31 53 30 30 30 32 0D			
Treble	31	-06 to 00	3A 30 31 53 31 2D 30 36 0D (Set to -06)		3A 30 31 47 31 30 30 30 0D	3A 30 31 72 31 XX XX XX 0D
		00 to +06	3A 30 31 53 31 2B 30 36 0D (Set to +06)			
Bass	32	-06 to 00	3A 30 31 53 32 2D 30 36 0D (Set to -06)		3A 30 31 47 32 30 30 30 0D	3A 30 31 72 32 XX XX XX 0D
		00 to +06	3A 30 31 53 32 2B 30 36 0D (Set to +06)			
Balance	33	-50 to -00	3A 30 31 53 35 2D 35 30 0D (Set to -50)		3A 30 31 47 33 30 30 30 0D	3A 30 31 72 33 XX XX XX 0D
		+00 to +50	3A 30 31 53 35 2B 35 30 0D (Set to +50)			
Contrast	34	000 to 100	3A 30 31 53 34 30 35 30 0D (Set to 050)		3A 30 31 47 34 30 30 30 0D	3A 30 31 72 34 XX XX XX 0D
Volume	38	000 to 030	3A 30 31 53 38 30 33 30 0D (Set to 030)		3A 30 31 47 38 30 30 30 0D	3A 30 31 72 38 XX XX XX 0D
Mute (Speaker)	39	000: Off	3A 30 31 53 39 30 30 30 0D		3A 30 31 47 39 30 30 30 0D	3A 30 31 72 39 XX XX XX 0D
		001: On	3A 30 31 53 39 30 30 31 0D			
Video Source	3A	001: HDMI1	3A 30 31 53 3A 30 30 31 0D		3A 30 31 47 3A 30 30 30 0D	3A 30 31 72 3A XX XX XX 0D
		002: HDMI2	3A 30 31 53 3A 30 30 32 0D			

Command name	Code (Hex)	Value (Decimal)	Set request Example (Hex)	Set response (Hex)	Get request (Hex)	Get response (Hex)
		021: HDMI3	3A 30 31 53 3A 30 32 31 0D			
		103: OPS	3A 30 31 53 3A 31 30 33 0D			
		104: USB Type-C1	3A 30 31 53 3A 31 30 34 0D			
		105: USB Type-C2	3A 30 31 53 3A 31 30 35 0D			
Language	3C	000: English	3A 30 31 53 3C 30 30 30 0D		3A 30 31 47 3C 30 30 30 0D	3A 30 31 72 3C XX XX XX 0D
		001: French	3A 30 31 53 3C 30 30 31 0D			
		002: Spanish	3A 30 31 53 3C 30 30 32 0D			
		004: Simplified Chinese	3A 30 31 53 3C 30 30 34 0D			
		006: German	3A 30 31 53 3C 30 30 36 0D			
		007: Dutch	3A 30 31 53 3C 30 30 37 0D			
		011: Danish	3A 30 31 53 3C 30 31 31 0D			
		013: Italian	3A 30 31 53 3C 30 31 33 0D			
		015: Norwegian	3A 30 31 53 3C 30 31 35 0D			
		016: Finnish	3A 30 31 53 3C 30 31 36 0D			
Backlight	3F	000 to 100	3A 30 31 53 3F 30 35 30 0D (Set to 050)		3A 30 31 47 3F 30 30 30 0D	3A 30 31 72 3F XX XX XX 0D
Color Temp	40	000: Cool	3A 30 31 53 40 30 30 30 0D		3A 30 31 47 40 30 30 30 0D	3A 30 31 72 40 XX XX XX 0D
		001: Neutral	3A 30 31 53 40 30 30 31 0D			
		002: Warm	3A 30 31 53 40 30 30 32 0D			
		003: Very Cool	3A 30 31 53 40 30 30 33 0D			
		004: Very Warm	3A 30 31 53 40 30 30 34 0D			
Remote Control	41	000: Vol +	3A 30 31 53 41 30 30 30 0D			
		001: Vol -	3A 30 31 53 41 30 30 31 0D			
		010: Up	3A 30 31 53 41 30 31 30 0D			
		011: Down	3A 30 31 53 41 30 31 31 0D			
		012: Left	3A 30 31 53 41 30 31 32 0D			
		013: Right	3A 30 31 53 41 30 31 33 0D			
		014: Enter	3A 30 31 53 41 30 31 34 0D			

Command name	Code (Hex)	Value (Decimal)	Set request Example (Hex)	Set response (Hex)	Get request (Hex)	Get response (Hex)
		020: Menu/Settings	3A 30 31 53 41 30 32 30 0D			
		021: Input	3A 30 31 53 41 30 32 31 0D			
		022: Back/Exit	3A 30 31 53 41 30 32 32 0D			
		032: Freeze	3A 30 31 53 41 30 33 32 0D			
		033: Mute	3A 30 31 53 41 30 33 33 0D			
		034: Home	3A 30 31 53 41 30 33 34 0D			
		100: Screen Shade	3A 30 31 53 41 31 30 30 0D			
Infrared (Remote)	42	000: Enable	3A 30 31 53 42 30 30 30 0D		3A 30 31 47 42 30 30 30 0D	3A 30 31 72 42 XX XX XX 0D
		001: Disable	3A 30 31 53 42 30 30 31 0D			
Speaker	43	000: Off (L and R)	3A 30 31 53 43 30 30 30 0D		3A 30 31 47 43 30 30 30 0D	3A 30 31 72 43 XX XX XX 0D
		001: On (L and R)	3A 30 31 53 43 30 30 31 0D			
		002: Auto	3A 30 31 53 43 30 30 32 0D			
		003: Subwoofer Off	3A 30 31 53 43 30 30 33 0D			
		004: Subwoofer On	3A 30 31 53 43 30 30 34 0D			
Touch	44	000: Off	3A 30 31 53 44 30 30 30 0D		3A 30 31 47 44 30 30 30 0D	3A 30 31 72 44 XX XX XX 0D
		001: On	3A 30 31 53 44 30 30 31 0D			
Screen Timeout	46	000: No Timer	3A 30 31 53 46 30 30 30 0D		3A 30 31 47 46 30 30 30 0D	3A 30 31 72 46 XX XX XX 0D
		001: 1 minute	3A 30 31 53 46 30 30 31 0D			
		005: 5 minutes	3A 30 31 53 46 30 30 35 0D			
		010: 10 minutes	3A 30 31 53 46 30 31 30 0D			
		030: 30 minutes	3A 30 31 53 46 30 33 30 0D			
		060: 60 minutes	3A 30 31 53 46 30 36 30 0D			
		090: 90 minutes	3A 30 31 53 46 30 39 30 0D			
		300: 5 hours	3A 30 31 53 46 33 30 30 0D			
		600: 10 hours	3A 30 31 53 46 36 30 30 0D			
MIC array	47	000: Off	3A 30 31 53 47 30 30 30 0D		3A 30 31 47 47 30 30 30 0D	3A 30 31 72 47 XX XX XX 0D
		001: On	3A 30 31 53 47 30 30 31 0D			
MIC array	51	000: Off	3A 30 31 53 51 30 30 30 0D		3A 30 31 47 51 30 30 30 0D	3A 30 31 72 51 XX XX XX 0D

Command name	Code (Hex)	Value (Decimal)	Set request Example (Hex)	Set response (Hex)	Get request (Hex)	Get response (Hex)
		001: On	3A 30 31 53 51 30 30 31 0D			
ABC	52	001: Off	3A 30 31 53 52 30 30 31 0D		3A 30 31 47 52 30 30 30 0D	3A 30 31 72 52 XX XX XX 0D
		002: On	3A 30 31 53 52 30 30 32 0D			
Eco mode[1]	53	001: Off	3A 30 31 53 53 30 30 31 0D		3A 30 31 47 53 30 30 30 0D	3A 30 31 72 53 XX XX XX 0D
		002: On	3A 30 31 53 53 30 30 32 0D			
Factory Reset	54	001: Initiate Factory Reset	3A 30 31 53 54 30 30 31 0D			

[1] Turning Eco mode off or on disables the Ethernet connection, which then disables network control. You will have to turn on Ethernet again manually.