



# C55/C2800 External Control

## Change Log

REVISION	DATE	NOTES
A	3/7/2025	Initial Release
B	4/16/2025	<b>Add BAL 3 IR Long Code;</b> <b>Update LEVEL DOWN IR Long Code</b>

## Overview

This protocol is compatible with Crestron, AMX, Savant, Control4, and other RS232-based control systems.

## Command Protocol Structure

External commands over RS232 and TCP/IP are represented as ASCII data. After processing a command, the C55/C2800 will typically echo the command in acknowledgement.

FUNCTION	VALUE	DESCRIPTION
Format	(VOL 65)	Example Command – Set Volume to 65%
Prefix	(	First Byte of Payload Data
Name	XXX	3-Character Unique Name
Parameter(s)	<i>Par1. Par2. Par3.</i>	Command-Specific Parameters; Space-Separated
Suffix	)	Last Byte of Payload Data
Carriage Return	\x0D\x0A	(Optional) Used to format terminal for readability

## Operation

When the C55/C2800 is first connected to AC, it will reply with the Model Number, Serial Number, System Firmware Version, and DA Firmware Version:

```
>> (C55) or (C2800)
>> (Serial Number: XXX####)
>> (FW Version: #.#.#)
>> (DA Version: v#.#.#)
```

After processing a Command, the C55/C2800 will typically echo the same Command as an acknowledgement. If the command is invalid or corrupt, an appropriate Error Message will be sent instead.

When status changes occur in the C55/C2800, updates will be automatically transmitted to the host control system. This allows the control software to internally maintain the current state of the preamplifier—allowing proper Command and Event execution.

# RS232

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## Packet Configuration

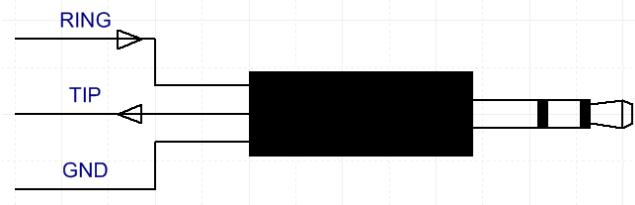
The C55/C2800 RS232 interface assumes the following Packet Configuration:

- Data Bits = 8
- Parity = None
- Stop Bits = 1
- Flow Control = None

## Hardware Requirements

The C55/C2800 uses a 3.5mm TRS cable for RS232C serial control with the following pinout:

- Tip: TXD (Data Transmitted by C55/C2800)
- Ring: RXD (Data Received by C55/C2800)
- Sleeve: Ground



## Baud Rate

The Baud Rate of this interface is adjustable through the C55/C2800 Setup Menu and can be set to any of the following values:

- 9600
- 19200
- 38400
- 57600
- 115200 (Default)

# TCP/IP

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The C55/C2800 uses port 84 for both the wired and wireless interfaces.

## Core Commands

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FUNCTION	COMMAND	PARAMETERS	COMMENTS
Power	(PWR <i>par.</i> )	1 -> On 0 -> Off <i>None</i> -> Returns Status	If Power is Off, all non-Power RS232 Commands will return an Invalid Command Error Code.
Volume	(VOL <i>par.</i> )	U -> Up 1% D -> Down 1% 0 to 100 -> Set % Level <i>None</i> -> Return Status	
Mute	(MUT <i>par.</i> )	1 -> On 0 -> Off <i>None</i> -> Returns Status	
Output 1	(OP1 <i>par.</i> )	1 -> On 0 -> Off <i>None</i> -> Returns Status	
Output 2	(OP2 <i>par.</i> )	1 -> On 0 -> Off <i>None</i> -> Returns Status	
Headphones	(HPS)	<i>None</i> -> Returns Status	0: Headphones Unplugged 1: Headphones Plugged 2: No Headphone Jack (China)
Input Select	(INP <i>par.</i> )	U -> Next Input D -> Previous Input 1 -> BAL 1 2 -> BAL 2 3 -> BAL 3 4 -> UNBAL 1 5 -> UNBAL 2 6 -> UNBAL 3 7 -> UNBAL 4 8 -> PHONO 1 9 -> PHONO 2 10 -> COAX 1 11 -> COAX 2 12 -> OPT 1 13 -> OPT 2 14 -> USB 15 -> MCT 16 -> HDMI (ARC) <i>None</i> -> Return Status	If specified Input is disabled (Off in Setup Menu), an Invalid Parameter Error Code will be returned.

# Trim Commands

FUNCTION	COMMAND	PARAMETERS	COMMENTS
Balance	(TBA <i>par.</i> )	L -> Left 1dB R -> Right 1dB -50 to 50 -> Set Balance <i>None</i> -> Returns Status	Sign indicates Left (-) or Right (+)
Input Trim Level	(TIN <i>par.</i> )	U -> Up 0.5dB D -> Down 0.5dB -12 to +12 -> Set Level <i>None</i> -> Return Status	Indexes in half dB steps (i.e., -12 = -6.0dB; -11 = -5.5dB, etc.)
Mono/Stereo	(TMO <i>par.</i> )	1 -> On 0 -> Off <i>None</i> -> Returns Status	
Processor Loop	(TPL <i>par.</i> )	1 -> On 0 -> Off <i>None</i> -> Returns Status	
Meter Lights	(TML <i>par.</i> )	1 -> On 0 -> Off <i>None</i> -> Returns Status	
Display Brightness	(TDB <i>par.</i> )	1 -> 25% 2 -> 50% 3 -> 75% 4 -> 100% <i>None</i> -> Returns Status	
Phono Capacitance	(TPC <i>par.</i> )	U -> Next Value D -> Previous Value 1 to 8 -> Value by Index <i>None</i> -> Return Status	Returns Invalid Input Error if current Input is not Phono.  Values: 50pF, 100pF, 150pF, 200pF, 250pF, 300pF, 350pF, 400pF
Phono Resistance	(TPR <i>par.</i> )	U -> Next Value D -> Previous Value 1 to 7 -> Value by Index <i>None</i> -> Return Status	Returns Invalid Input Error if current Input is not Phono.  Values: 25Ω, 50Ω, 100Ω, 200Ω, 400Ω, 1kΩ, 47kΩ
Phono Gain	(TPG <i>par.</i> )	U -> Next Value D -> Previous Value 1 to 5 -> Value by Index <i>None</i> -> Return Status	Returns Invalid Input Error if current Input is not Phono.  Values: 40dB, 46dB, 52dB, 58dB, 64dB
HDX	(THH <i>par.</i> )	1 -> On 0 -> Off <i>None</i> -> Returns Status	Returns Invalid Command Error if Headphones are not Plugged-In.

# Output Commands

FUNCTION	COMMAND	PARAMETERS	COMMENTS
Switch Mode	(OSM <i>par.</i> )	0 -> Switched 1 -> Unswitched 2 -> Bi-Amped (Fixed) 3 -> Bi-Amped (Split) <i>None</i> -> Returns Status	Output 1 Only
Output 1 Trim Level	(OTR <i>par.</i> )	U -> Up 0.5dB D -> Down 0.5dB -12 to +6 -> Set Level <i>None</i> -> Return Status	Indexes in half dB steps (i.e., -12 = -6.0dB; -11 = -5.5dB, etc.)
Crossover Frequency	(OCF <i>par.</i> )	1 -> 150Hz 2 -> 350Hz 3 -> 900Hz <i>None</i> -> Returns Status	Returns Invalid Command Error if Output 1 is not Bi-Amped (Fixed).
High Pass	(OHP <i>par.</i> )	0 -> Bypass 1 -> 50Hz 2 -> 100Hz 3 -> 250Hz <i>None</i> -> Returns Status	Returns Invalid Command Error if Output 1 is not Bi-Amped (Split).
Low Pass	(OLP <i>par.</i> )	1 -> 600Hz 2 -> 1200Hz 3 -> 3000Hz <i>None</i> -> Returns Status	Returns Invalid Command Error if Output 1 is not Bi-Amped (Split).
Dual Mono	(ODM <i>par.</i> )	1 -> On 0 -> Off <i>None</i> -> Returns Status	Output 2 Only

# Information Commands

FUNCTION	COMMAND	PARAMETERS	COMMENTS
Query	(QRY)	<i>None</i> -> Returns Status	
Status Enable	(STA <i>par.</i> )	1 -> On 0 -> Off <i>None</i> -> Returns Status	Enabling this allows status messages to be transmitted by the unit automatically when its state updates.
Digital Audio Metadata	(DAM)	<i>None</i> -> Returns Status	Status refers to the sample rate and/or audio format information that appears on the display when a Digital Audio input is selected.

# C55 Exclusive Commands

FUNCTION	COMMAND	PARAMETERS	COMMENTS
Equalizer	(TEQ <i>par.</i> )	1 -> On 0 -> Off <i>None</i> -> Returns Status	C55 Only

# C2800 Exclusive Commands

FUNCTION	COMMAND	PARAMETERS	COMMENTS
Tone Control	(TTN <i>par.</i> )	1 -> On 0 -> Off <i>None</i> -> Returns Status	C2800 Only
Tone Bass	(TTB <i>par.</i> )	U -> Up 1dB D -> Down 1dB -12 to +12 -> Set Level <i>None</i> -> Return Status	C2800 Only
Tone Treble	(TTT <i>par.</i> )	U -> Up 1dB D -> Down 1dB -12 to +12 -> Set Level <i>None</i> -> Return Status	C2800 Only
Tube Lights	(TTL <i>par.</i> )	1 -> On 0 -> Off <i>None</i> -> Returns Status	C2800 Only

# Error Messages

ERROR TYPE	MESSAGE	DESCRIPTION
Unknown	(ERROR – Unknown Error)	Default Message for all unclassified Errors
Command	(ERROR – Invalid Command)	Command is not supported/recognized
Parameter	(ERROR – Invalid Parameter)	Parameter is Invalid for specified Command
Input	(ERROR – Invalid Input)	Command does not apply to current Input
Passthru	(ERROR – In Passthru)	Command not available while in Passthru

# IR

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## HR085 Remote

This product comes with the HR085 IR Remote. Before implementing the procedures below, it is important to make sure the HR085 is in the “McIntosh” mode:

1. Press and hold the DEVICE push-button for about 4 seconds.
2. The “McIntosh” LED will flash twice.

The following HR085 information (and the table on the next page) is intended to be used by McIntosh Dealers and Professional A/V Custom Installers. While most McIntosh models utilize the “Normal” remote control codes, a few models utilize the “Alternate” set of codes. To change the HR085 from “Normal” to “Alternate”:

1. Press and hold the SELECT and number 2 push-buttons simultaneously, for about 8 seconds, until the Device Select “McIntosh” LED flashes twice.

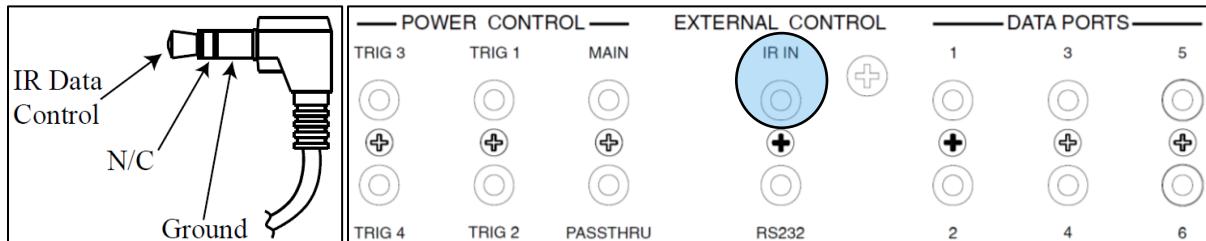
To change the HR085 back to “Normal” codes:

2. Press and hold the SELECT and number 1 push-buttons simultaneously, for about 8 seconds, until the Device Select “McIntosh” LED flashes twice.

In general, this process can be used to access any page (set of commands) for the HR085 by replacing the number push-button with the desired page.

## IR IN Port Connectors

In addition to the front panel IR sensor, an IR IN port is available on the rear panel to allow 3.5mm connections from third-party IR receivers.



## Direct Input Selection Codes

Sixteen IR codes are available for direct Input selection. This allows third-party programmable IR remote controllers to directly select each C55/C2800 input.

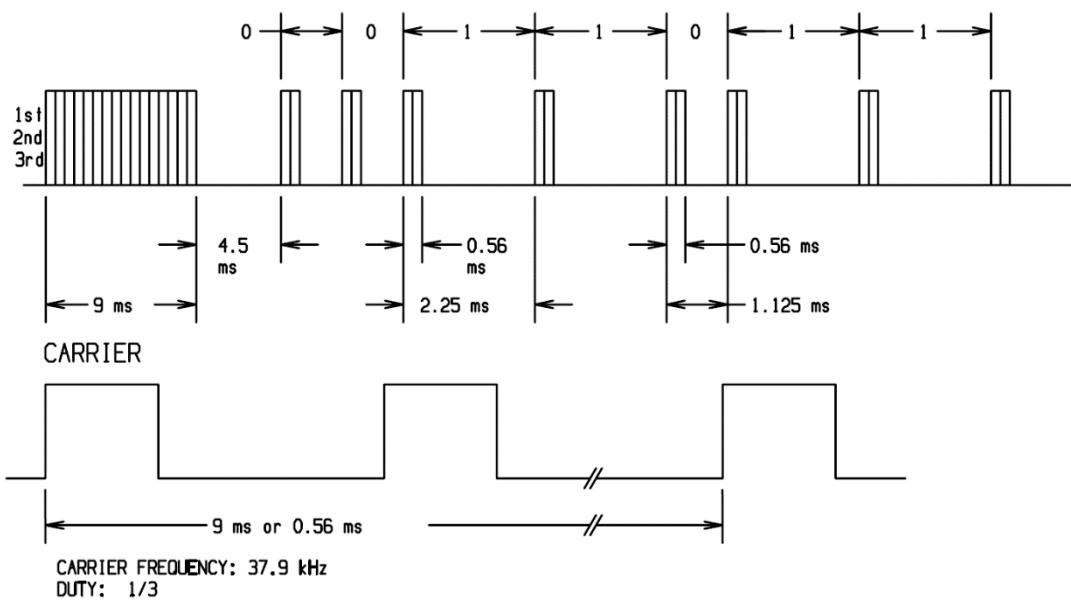
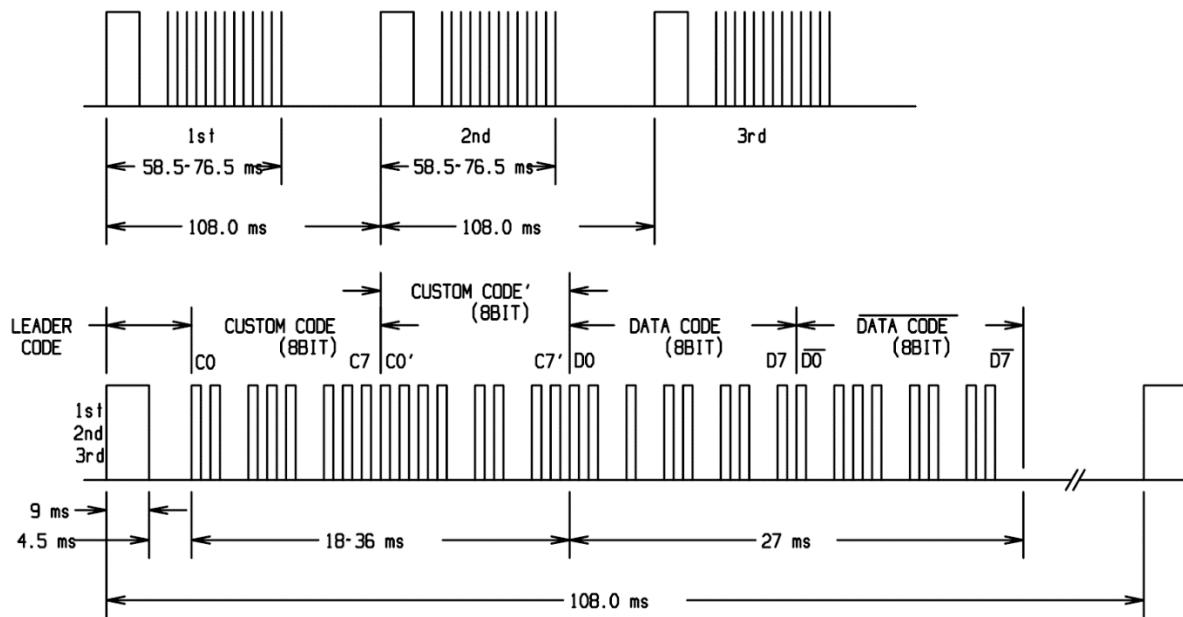
These IR codes are contained in hidden pre-programmed pages of the HR085 Remote Control. See HR085 Learning Guide, part number 041613, for more information. These commands can be transmitted by the HR085 and captured by other learning remotes.

HEX CODE	INPUT	PAGE / LABEL
0x05	PHONO 1	5 / 1
0x06	PHONO 2	7 / 2
0x08	MCT	7 / 4
0x09	OPT 1	7 / 5
0x0A	OPT 2	7 / 6
0x0C	COAX 1	7 / 8
0x0D	COAX 2	7 / 9
0x10	HDMI(ARC)	3 / 9

HEX CODE	INPUT	PAGE / LABEL
0x12	BAL 1	7 / ⏪
0x13	BAL 2	7 / AM
0x14	BAL 3	7 / PRESET
0x17	USB	7 / FM
0x41	UNBAL 1	*N/A
0x49	UNBAL 2	5 / AM
0x4C	UNBAL 3	*N/A
0x4D	UNBAL 4	*N/A

\* This code cannot be generated by the HR085. See [Long Codes](#).

## NEC Format (Custom Code = \xCA55)



## Long Codes

COMMAND	HEX CODE	LONG CODE
PHONO 1	0x05	0000 006a 0000 0022 015b 0oad 0016 0016 0016 0041 0016 0016 0016 0041 0016 0016 0016 0016 0016 0041 0016 0041 0016 0016 0041 0016 0016 0041 0016 0016 0016 0041 0016 0016 0041 0016 0016 0041 0016 0016 0041 0016 0041 0016 0041 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0041 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0041 0016 0041 0016 0016 0041 0016 0016 0041 0016 0016 05ef
PHONO 2	0x06	0000 006c 0000 0022 0157 00ab 0016 0015 0015 0040 0016 0015 0015 0040 0016 0015 0015 0015 0016 0040 0015 0040 0016 0040 0016 0015 0016 0040 0016 0015 0016 0040 0016 0015 0016 0040 0016 0015 0016 0015 0015 0040 0016 0040 0016 0015 0016 0015 0015 0016 0015 0016 0015 0016 0015 0015 0040 0016 0015 0015 0015 0016 0040 0015 0040 0016 0040 0016 0015 0016 0040 0016 05ee
MCT	0x08	0000 006a 0000 0022 015b 0oad 0016 0016 0016 0041 0016 0016 0016 0041 0016 0016 0016 0016 0016 0041 0016 0041 0016 0041 0016 0016 0016 0041 0016 0016 0016 0041 0016 0016 0041 0016 0016 0041 0016 0016 0016 0041 0016 0041 0016 0041 0016 0016 0041 0016 0041 0016 0016 0041 0016 0041 0016 05ef
OPT 1	0x09	0000 006a 0000 0022 015b 0oad 0016 0016 0016 0041 0016 0016 0016 0041 0016 0016 0016 0016 0016 0041 0016 0041 0016 0041 0016 0016 0016 0041 0016 0016 0016 0041 0016 0016 0041 0016 0016 0041 0016 0016 0016 0041 0016 0041 0016 0041 0016 0016 0041 0016 0041 0016 0016 0041 0016 0041 0016 05f1
OPT 2	0x0A	0000 006a 0000 0022 015b 0oad 0016 0016 0016 0041 0016 0016 0016 0041 0016 0016 0016 0016 0016 0041 0016 0041 0016 0041 0016 0016 0016 0041 0016 0016 0016 0041 0016 0016 0041 0016 0016 0041 0016 0016 0016 0041 0016 0041 0016 0041 0016 0016 0041 0016 0041 0016 0016 0041 0016 0041 0016 05ee
COAX 1	0x0C	0000 006a 0000 0022 015b 0oad 0016 0016 0016 0041 0016 0016 0016 0041 0016 0016 0016 0016 0016 0041 0016 0041 0016 0041 0016 0016 0016 0041 0016 0016 0016 0041 0016 0016 0041 0016 0016 0041 0016 0016 0016 0041 0016 0041 0016 0041 0016 0016 0041 0016 0041 0016 0016 0041 0016 0041 0016 05f1
COAX 2	0x0D	0000 006a 0000 0022 015b 0oad 0016 0016 0016 0041 0016 0016 0016 0041 0016 0016 0016 0016 0016 0041 0016 0041 0016 0041 0016 0016 0016 0041 0016 0016 0016 0041 0016 0016 0041 0016 0016 0041 0016 0016 0016 0041 0016 0041 0016 0041 0016 0016 0041 0016 0041 0016 0016 0041 0016 0041 0016 05f0
TRIM	0x0E	0000 006a 0000 0022 015b 0oad 0016 0016 0016 0041 0016 0016 0016 0041 0016 0016 0016 0016 0016 0041 0016 0041 0016 0041 0016 0016 0016 0041 0016 0016 0016 0041 0016 0016 0041 0016 0016 0041 0016 0016 0016 0041 0016 0041 0016 0041 0016 0016 0041 0016 0041 0016 0016 0041 0016 0041 0016 05ef
HDMI	0x10	0000 006a 0000 0022 015b 0oad 0016 0016 0016 0041 0016 0016 0016 0041 0016 0016 0016 0016 0016 0041 0016 0041 0016 0041 0016 0016 0016 0041 0016 0016 0016 0041 0016 0016 0041 0016 0016 0041 0016 0016 0016 0041 0016 0041 0016 0041 0016 0016 0041 0016 0041 0016 0016 0041 0016 0041 0016 05f0
BAL 1	0x12	0000 006a 0000 0022 015b 0oad 0016 0016 0016 0041 0016 0016 0016 0041 0016 0016 0016 0016 0016 0041 0016 0041 0016 0041 0016 0016 0016 0041 0016 0016 0016 0041 0016 0016 0041 0016 0016 0041 0016 0016 0016 0041 0016 0041 0016 0041 0016 0016 0041 0016 0041 0016 0016 0041 0016 0041 0016 05ef

C55/C2800 External Control – Rev B

C55/C2800 External Control – Rev B