

CHIP-8

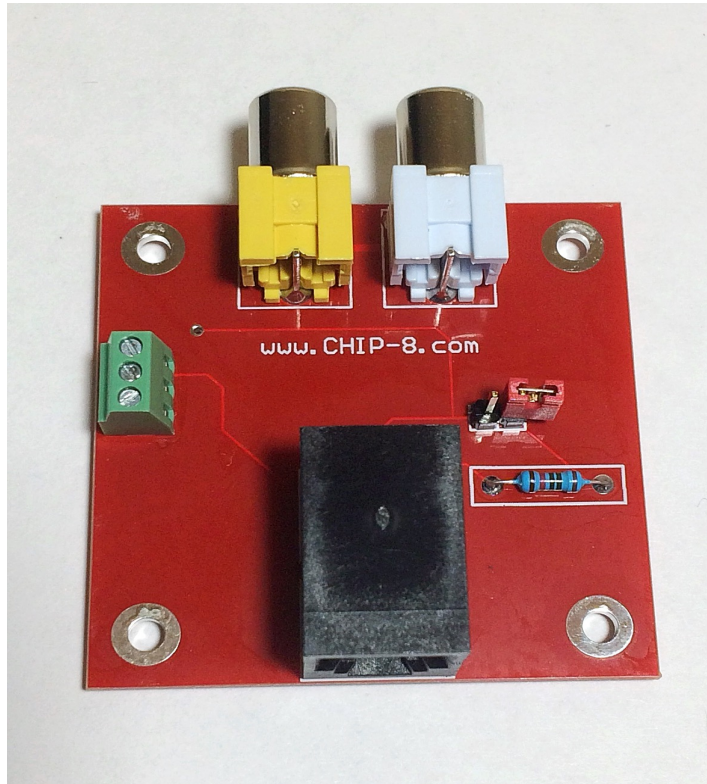
Access Control



SETUP

The CHIP-8 Computer has an RS-485 Serial communications port that can be used to interface to multiple peripherals, up to 4000' away.

Access to the port is available on the CHIP-8 Breakout Board, seen below.



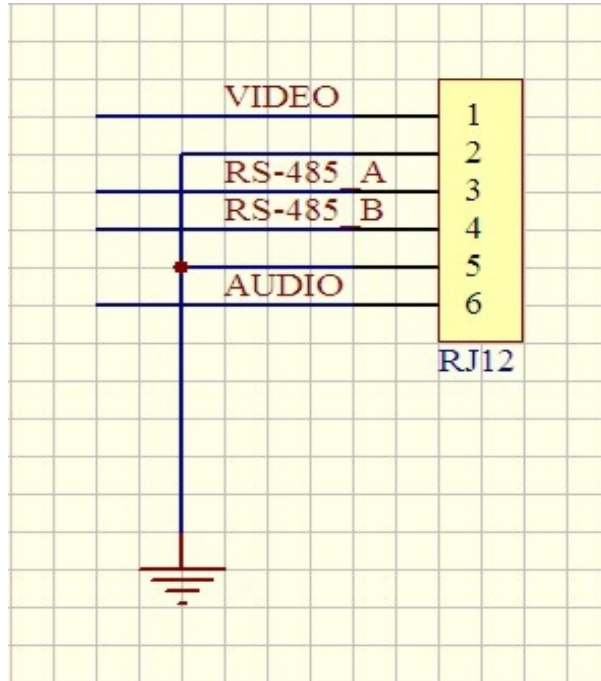
On the Left-hand side of the board is a Green 3 pin Terminal block. The Terminal block provides the necessary RS485 Communication connections.

From the top of the Terminal block, the pinout is:

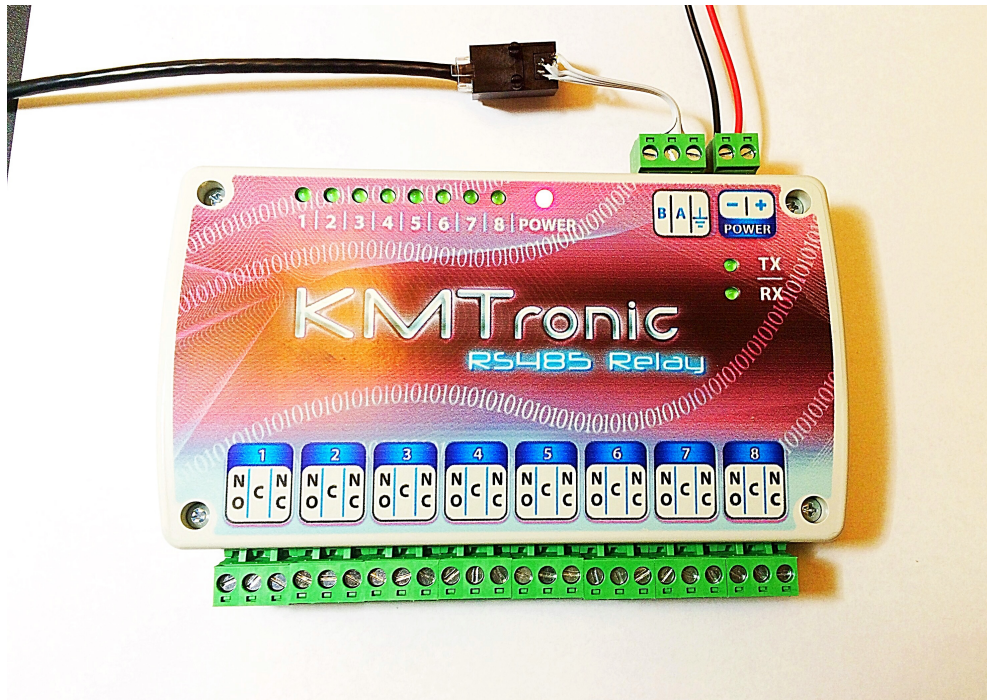
- 1 – RS485 A Signal line
- 2 – RS485 B Signal line
- 3 – Reference Ground

On the Right-hand side of the board is a jumper for an RS-485 Termination Resistor. It is normally left open, but may be required for long cable runs.

If you don't have a Breakout board, or would prefer to interface directly into the RJ12 Connector at the rear of the CHIP-8 Classic Computer - this Schematic shows the pinout.



CHIP-8 Classic Rear panel.



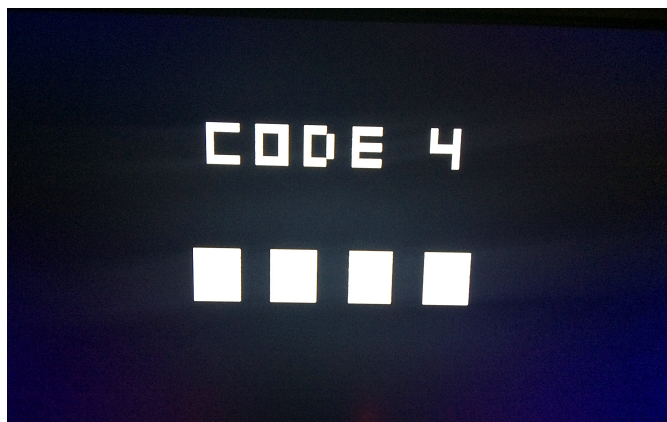
On the KMTronic Relay Controller, ensure that only Switch 1 is ON (down position).
Connect RS-485 Signals to A, B and Ground on the 3 Pin Terminal block.
Connect 12VDC to the 2 Pin Terminal Block (POWER).

CODE 4

Code 4 is a simple CHIP-8 program that provides access control to Relay 1 of the KMTronic Relay Controller. The Relay can switch a 220VAC Source at up to 10 Amps. In this application the relay would normally provide current to an electric door latch. Most Electric Latches require less than 3A to operate. If more current is required, I would suggest using Relay1 to provide coil current to a larger external relay.

Ideally, the CODE 4 program should be stored in an EEPROM board (Non-volatile Memory) so that it's always available for access control requirements.

The PIN can be found by examining CHIP-8 address 004EH, and 004FH. The PIN is part of the Unique ID that is provided by the EEPROM board.



The program is loaded from EEPROM by pressing the F1 key, followed by the 2 key.

The program is then Run by pressing the F1 key, followed by the 3 key.

Once the CODE 4 application is running it can only be terminated by removing power from the CHIP-8 Computer. Pressing the F1, or F2 keys will have no effect.

CODE 4 PROGRAM LISTING

0200:	2900	Initialize Routine.
	600E	
	6100	
	620C	
	F229	
	D015	Write C to Display.
020C:	7006	
	6200	
	F229	
	D015	Write O to Display.
0214:	7006	
	620D	
	F229	
	D015	Write D to Display.
021C:	7006	
	620E	
	F229	
	D015	Write E to Display.
0224:	7004	
	A508	
	D015	Write Space (Ha,ha).
022A:	7006	
	6204	
	F229	
	D015	Write 4 to Display.
0232:	2400	Draw Squares.
0234:	FB0A	Wait for Keypress. Read into VB.
	600D	
	6111	
	FB29	
	D015	Write 1 st PIN attempt.
023E:	FC0A	Wait for Keypress. Read into VC.
	6017	
	6111	
	FC29	
	D015	Write 2 nd PIN attempt.

0248:	FD0A	Wait for Keypress. Read into VD.
	6021	
	6111	
	FD29	
	D015	Write 3 rd PIN attempt.
0252:	FE0A	Wait for Keypress. Read into VE.
	602B	
	6111	
	FE29	
	D015	Write 4 th PIN attempt.
025C:	A04E	Point to EEPROM address space.
	6101	
	F165	Move PIN into V0,V1.
	82B0	Copy 1 st Digit of PIN attempt.
	83B0	2 nd copy for Multiply routine.
0266:	2600	Multiply – move 1 st Digit into high Nibble.
	82C4	Add 2 nd Digit of PIN attempt to 1 st .
	5200	Do 1 st two Digits = PIN?
	1700	No match! Get out of here...
026E:	82D0	Copy 3 rd Digit of PIN attempt.
	83D0	2 nd copy for Multiply routine.
	2600	Multiply – move 3 rd Digit into high Nibble.
	82E4	Add 4 th Digit of PIN attempt to 3 rd .
	5210	Do last two Digits = PIN?
	1700	No match! Get out of here...
027A:	6736	
	6800	
	A510	
	D785	Write Tick to Display.
	60FF	
	F070	
	6001	
	F070	
	F070	Send Relay ON Message!
	F00A	Wait for Keypress.
	1200	Re-run CODE 4!

0400:	6002	
	6110	
	6200	
0406:	700A	
	A500	
	D017	
	7201	
	3204	
	1406	
	00EE	Draw 4 Squares!
0500:	FCFC	
	FCFC	
	FCFC	
	FC00	Square data.
0508:	0000	
	0000	
	0000	
	0000	Space data (Because I can).
0510:	0102	
	4428	
	1000	Tick data.
0600:	6400	
0602:	8234	$V2=V2+V3$.
	7401	
	340F	Multiplied by 16?
	1602	No – keep going!
	00EE	Finished Multiplying!
0700:	2800	Delay.
	1200	Next Attempt!

0800: 6600
0802: 7601
0804: 6500
0806: 7501
35FF
1806
3680
1802
00EE

Delay!

0900: 6005
F072
60FF
F070
6001
F070
6000
F070
00E0
00EE

Set Serial port to 9600 Baud.

Send Relay OFF message.

Clear Screen.

Carry On!