

**NT30 to CS1W SCU41 via Advantech Adam 4522 RS232 to RS422 Converter.**

**PURPOSE:**

This document will show how to get the Omron NT30 operator interface to communicate to the CS1W SCU41 over a distance of up to 1000 feet by using RS422 and the Adam 4522 RS232 to RS422 converter. We will use the RS422 port on the NT30 and the RS232 port on the SCU41.

**REQUIRED EQUIPMENT:**

- |    |              |                                    |
|----|--------------|------------------------------------|
| 1. | CS1G-CPU44H  | Omron CS1 PLC.                     |
| 2. | C200HW-PA202 | PLC power supply.                  |
| 3. | CS1W-BC053   | CS1 Backplane                      |
| 4. | CS1W-SCU41   | Rack mounted communication Module. |
| 5. | ADAM4522     | Advantech RS232 to RS422 converter |
| 6. | NT30ST141    | Omron NT30 operator interface      |

**REQUIRED SOFTWARE:**

- |    |            |                                 |
|----|------------|---------------------------------|
| 1. | CX-PROG V6 | Omron PLC Programming Software. |
|----|------------|---------------------------------|

**REQUIRED CABLES:**

- |    |            |   |
|----|------------|---|
| 1. | CS1W-CN226 | PLC Programming Cable.                      |
| 2. |            | Cable between NT30 and Adam4522 (See below) |
| 3. |            | Cable between Adam4522 and CS1 (See below)  |

**FILE NAMES:**

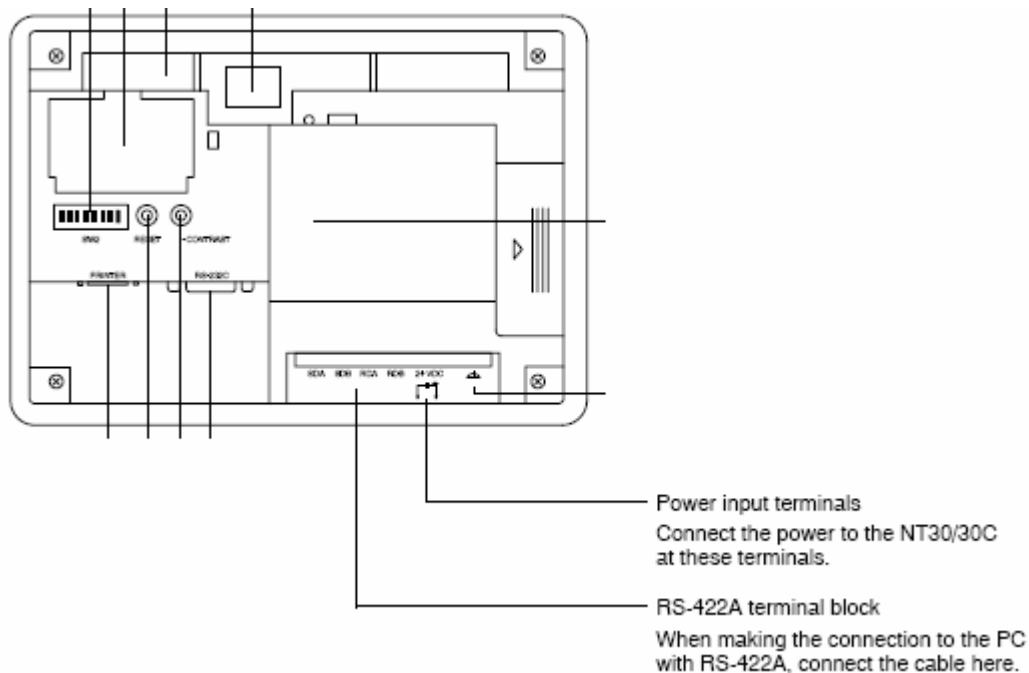
NT30 to CS1W SCU41 via Advantech Adam 4522.pdf	The file you are reading.
Adam4522.pdf	Adam 4522 Manual

**HELPFUL MANUALS:**

W340 – CS/CJ Instruction Reference Manual.  
V034 – NT30 Operation Manual  
ADAM-4510/4510S/4520/4522 User's Manual

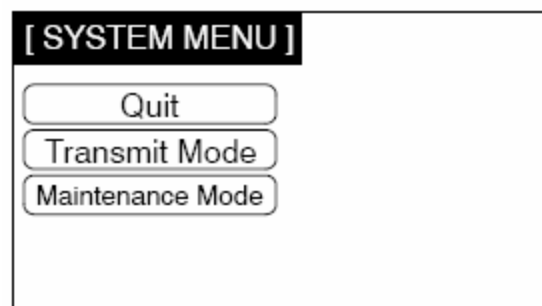
## INSTRUCTIONS:

1. This is a diagram of the back of the NT30. Apply 24VDC to the 2 power terminal noted below.



2. Download your NT30 application.

3. Turn the power on to the NT30 and press any 2 corners of the screen at the same time and the following menu will be displayed.



4. Press the Maintenance Mode button and you will see the screen change to the following.

[ MAINTENANCE MENU ]	
Quit	Memory Switch
Display History	
I/O Check	
PT Settings	
Init. Memory	

5. Press the Memory Switch button and you will see the screen change to the following.

< MEMORY SWITCH >		Next	Quit
Key Press Sound	ON		
Buzzer Sound	ON		
Screen Saver	10min		
Resume Memory Table	NONE		
Printer	ESC/P MONO.		

6. Press the Next button.

< MEMORY SWITCH >		Prev.	Quit
Comm. Port	RS232C		
Comm. Method	Host Link		
Baud Rate	9600		
Automatic Reset	None		

7. Change the Comm. Port to RS422. Change the Comm. Method to Host link. Change the Baud Rate to 9600. Change the Automatic Reset to Exist.

8. Quit all the way back out of the menus.

9. Start up CX programmer and connect to the PLC.
10. Go into the IO table and edit the unit settings for the CS1W-SCU41 module.
11. Upload the settings from the PLC.
12. Change the RS232 port settings for the CS1W-SCU41 to be the following:
  - Port Mode - Host link
  - Data Length – 7 bits
  - Stop Bits – 2 bits
  - Parity – Even
  - Baud Rate – 9600
  - Host link Unit # - 00
13. Download the new settings to the PLC. Reboot the PLC.
14. Check that SW1 on the Adam4522 is set to 10bits.

**ADAM-4520/4522 Data format settings  
(SW1)**

Data Format	1	2
9 bits	<input type="radio"/>	<input type="radio"/>
* 10 bits	<input checked="" type="radio"/>	<input type="radio"/>
11 bits	<input type="radio"/>	<input checked="" type="radio"/>
12 bits	<input checked="" type="radio"/>	<input checked="" type="radio"/>

☐ = Open      ☒ = Closed      \* = Default

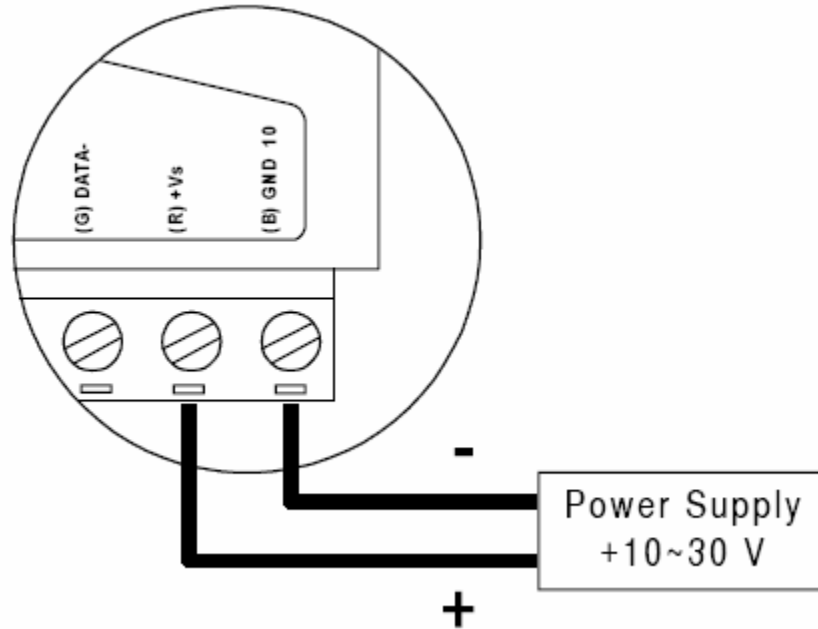
15. Check that SW2 on the Adam4522 is set to 9600

**ADAM-4520/4522 Baud rate settings (SW2)**

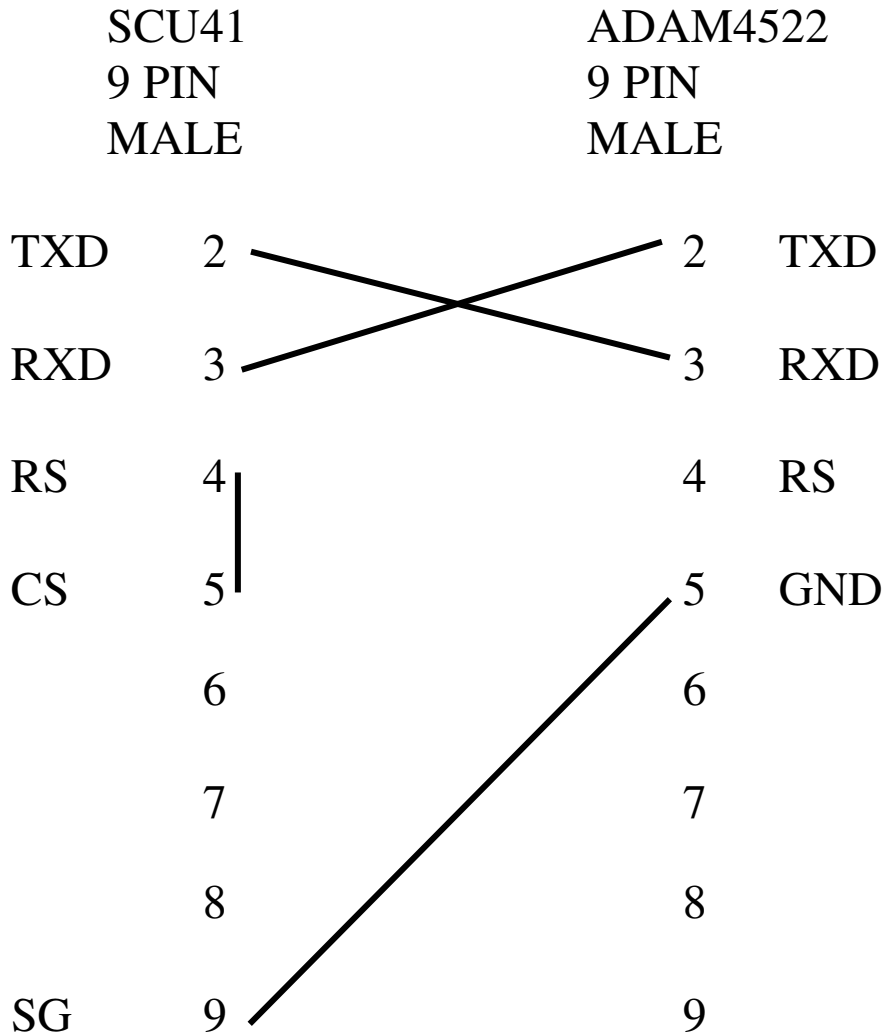
Baud Rate	1	2	3	4	5	6	7	8	9	10
RTS control	●	○	○	○	○	○	○	○	○	○
1200 bps	○	●	○	○	○	○	○	○	○	○
2400 bps	○	○	●	○	○	○	○	○	○	○
4800 bps	○	○	○	●	○	○	○	○	○	○
* 9600 bps	○	○	○	○	●	○	○	○	○	○
19.2 Kbps	○	○	○	○	○	●	○	○	○	○
38.4 Kbps	○	○	○	○	○	○	●	○	○	○
57.6 Kbps	○	○	○	○	○	○	○	●	○	○
115.2 Kbps	○	○	○	○	○	○	○	○	●	○
RS-422	○	○	○	○	○	○	○	○	○	●

○ = Open      ● = Closed      \* = Default

16. Apply 24VDC to the Adam4522 as shown below.



**SCU41 to ADAM4522 Communications Cable**



## NT30 to ADAM4522 Communications Cable

NT30

ADAM4522

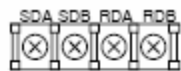
RDB \_\_\_\_\_ TX+

RDA \_\_\_\_\_ TX-

SDB \_\_\_\_\_ RX+

SDA \_\_\_\_\_ RX-

The connections on the NT30 look like this.



Signal Name	Abbreviation	Signal Direction	
		Input	Output
Send data A	SDA (SD-)		○
Send data B	SDB (SD+)		○
Receive data A	RDA (RD-)	○	
Receive data B	RDB (RD+)	○	