

RS232 Programming and Troubleshooting Guide

This Troubleshooting guide is intended for a thorough set up and troubleshooting guide for the control panels RS232 output.

- Refer to the Installation instructions, or an addendum, of the panel you are working with for revision changes.

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4100sm Wiring:

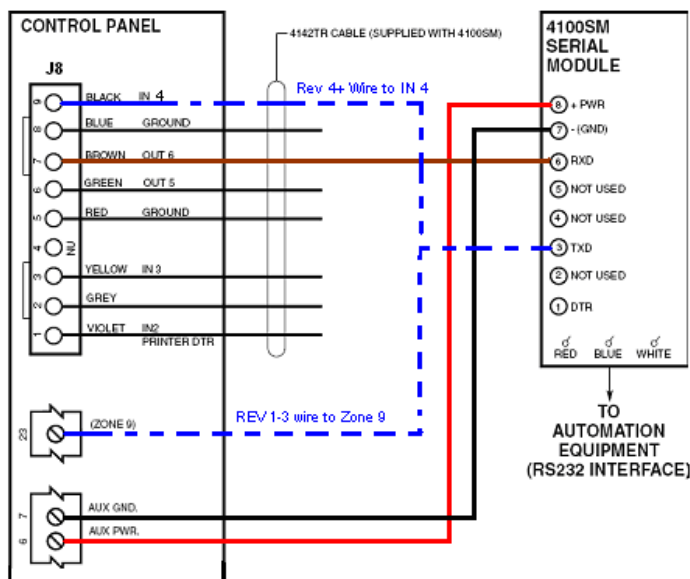


Figure 1: 4100sm with the 128BP/250BP & FA1660C

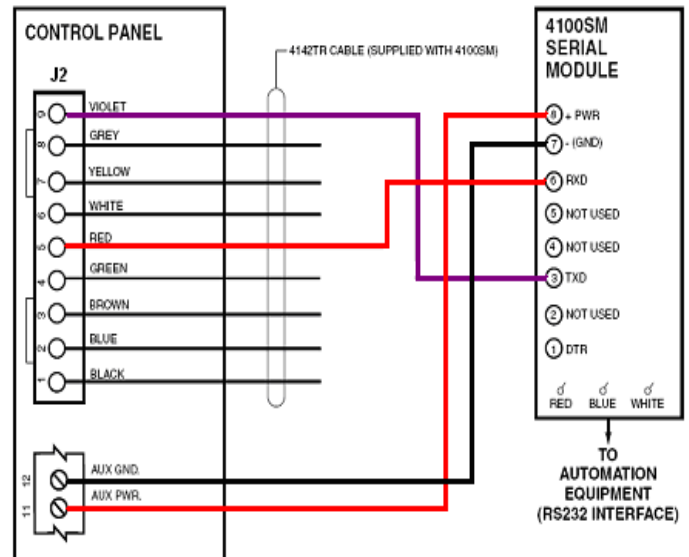


Figure 2: 4100sm with the 128/250FBP & FA1700C

VA8201 Wiring:

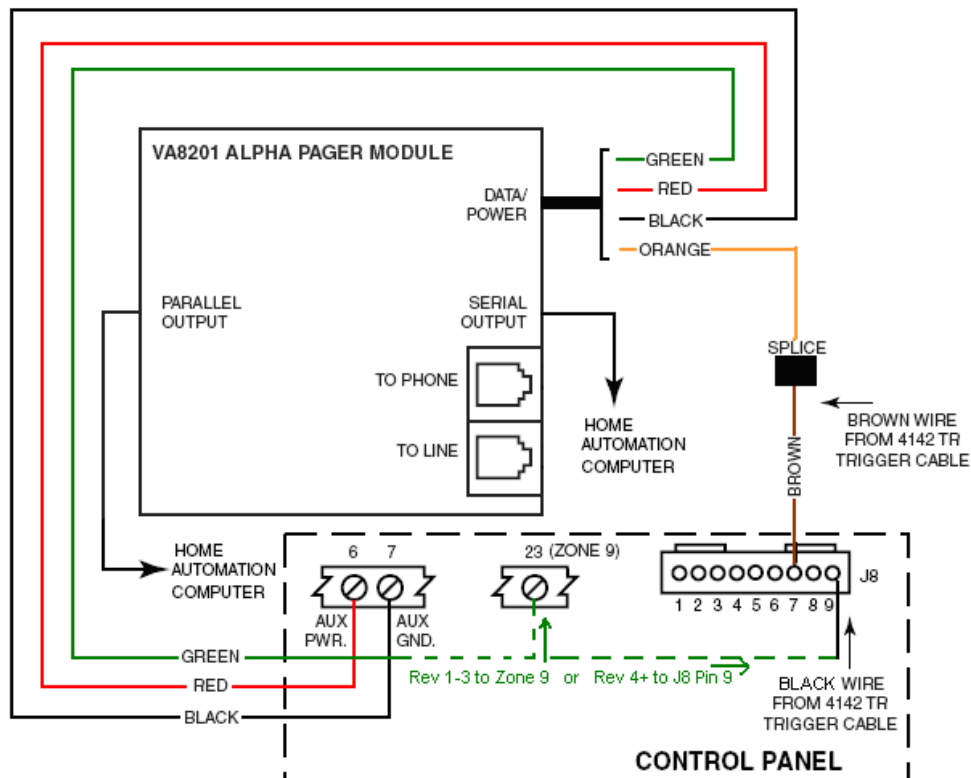


Figure 3: VA8201 with the 128/250BP & FA1660C

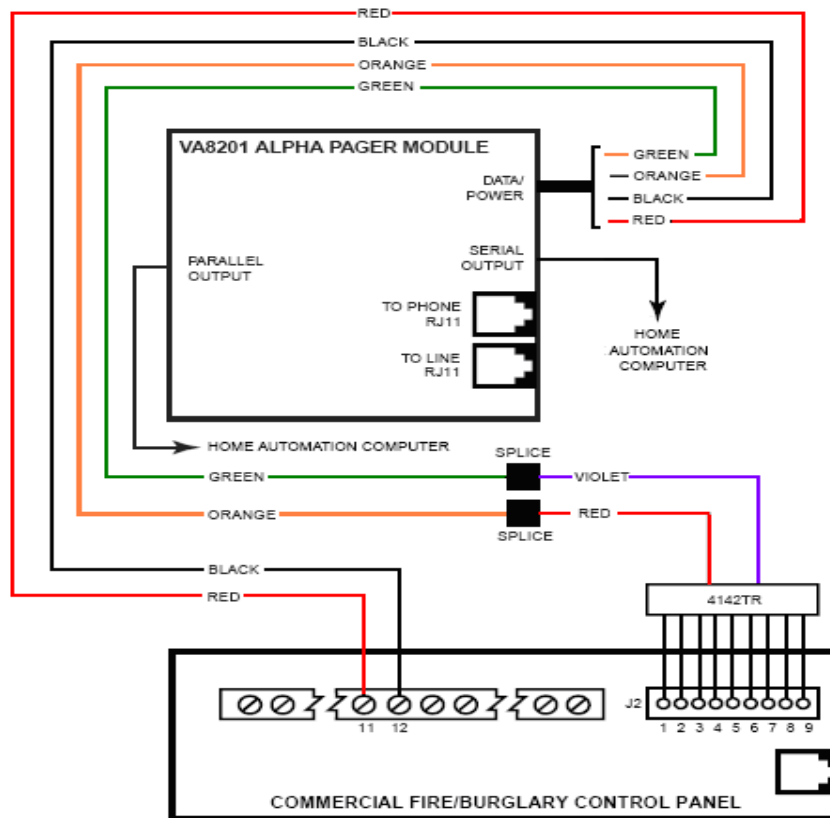


Figure 4: VA8201 with the 128/250FBP & FA1700C

Panel Programming:

Automation set up using the **4100SM** for all panels (***Bold*** italicized is for FBP Rev. 2+ and BP Rev 4+):

Field	Value	Name	Description
*05	1	System Events Notify	This Enables the RS232 Communication to transmit through the output (see *14)
*14	1	Burglary or RS-232 Input	Enables the RS232 Output
1*69	0	Printer Type	0 for parallel, 1 for serial
1*70	11111	Event Log Types	Report Alarm, Check, Bypass, Open/Close, System
1*71	1	12/24 Time Stamp Format	24 Hour Format
	0		12 Hour Format
1*72	0	Event Log Printer Online	Enter (0) to disable printer text output and only have ASCII home automations output. (Serial) If field 1*69 = 0 for Parallel printer, the serial output will be ASCII.
1*73	0	Printer Baud Rate	1200 Baud
1*78	1	<i>Extended Home Control Event Reports</i>	<i>1=extended home control command set (255 commands; 0=limited home control command set (32 commands)</i>
1*79	11111	<i>Home Control Event Report Types</i>	<i>Alarm, Trouble, Bypass, Open/Close, System, Test</i>
3*19	1	Enable J2 Header Printer Port	1= Enable pins 5 and 9 as RXD & DTR (fbp panels only)

Set Computer Format to: 1200 baud / 8 data bits / 1 stop bit / no parity.

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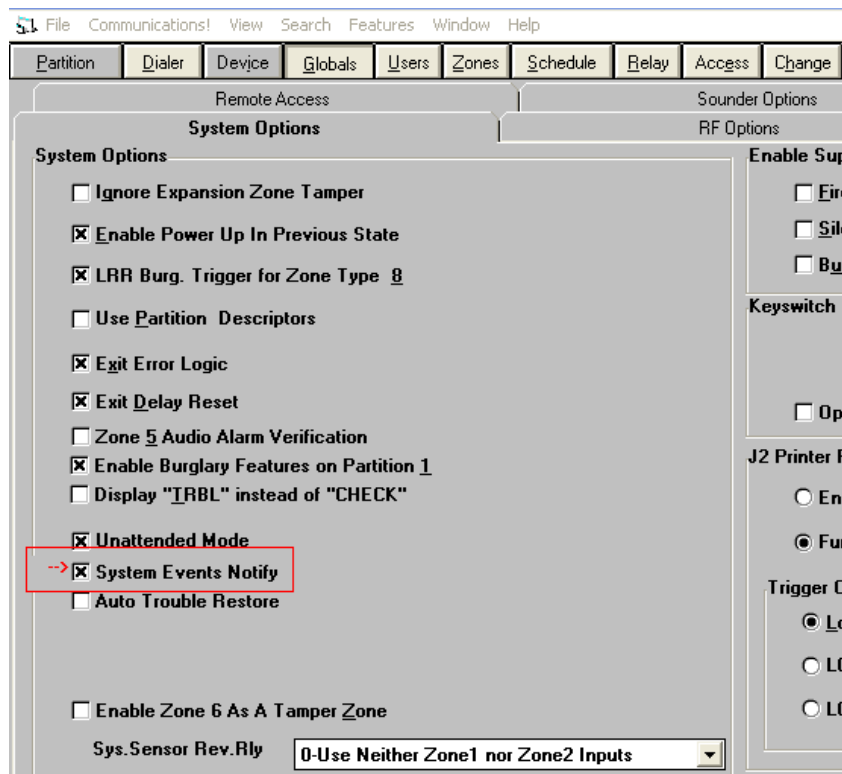
Automation set up using the VA8201 for all panels (***Bold italicized*** is for FBP Rev. 2+ and BP Rev 4+):

Field	Value	Name	Description
*05	1	System Events Notify	This Enables the RS232 Communication to transmit through the output (see *14)
*14	1	Burglary or RS-232 Input	Enables RS232 Output
1*69	0	Printer Type	0 for parallel, 1 for serial
1*70	11111	Event Log Types	Report Alarm, Check, Bypass, Open/Close, System
1*71	1	12/24 Time Stamp Format	24 Hour Format
	0		12 Hour Format
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1*73	0	Printer Baud Rate	1200 Baud
1*78	1	<i>Extended Home Control Event Reports</i>	<i>1=extended home control command set (255 commands; 0=limited home control command set (32 commands)</i>
1*79	111111	<i>Home Control Event Report Types</i>	<i>Alarm, Trouble, Bypass, Open/Close, System, Test</i>
2*30	0	Pager Installed	This enables the VA8201 Alpha Paging Module, but is not required for Automation Output.
3*19	1	Enable J2 Header Printer Port	1= Enable pins 5 and 9 as RXD & DTR (fbp panels only)

Set Computer Format for the VA8201 to 1200 baud / 8 data bits / 1 stop bit / no parity

Enabling RS232/Home Automation via Compass

1. *05 System Events Notify. To enable, program as shown below:



- *14, Burglary or RS232 Input, under Zones, select RS232:

	Description	Rpt	Part	Input Type	Loop #	Serial #	Aux F
ication		1	1 P1	1 Hardwired	N	-	6 Bel
ication		2	1 P1	1 Hardwired	N	-	6 Bel
nt		3	1 P1	1 Hardwired	N	-	
		4	1 P1	1 Hardwired	N	-	5 Bel
		5	1 P1	1 Hardwired	N	-	5 Bel
		6	1 P1	1 Hardwired	N	-	5 Bel
		7	1 P1	1 Hardwired	N	-	5 Bel

- In Globals, Event Logging, Program as seen below. This configuration assumes you want to send all event types to RS232. Also shown is a Vista-128fbp revision 2 or later panel. Earlier revisions of this panel, or Vista-128BP revision 3 or earlier panels will not have options 1*78 and 1*79:

Event Logging Options

1*71 — Time Format: ☒ 12 Hour, ☐ 24 Hour

1*73 — Printer Baud Rate: ☒ 1200, ☐ 300

1*69 — Printer Type: ☒ Parallel, ☐ Serial

Date Format: ☒ MMDDYY, ☐ DDMMYY

1*72 — ☐ Printer On-Line

1*78 — ☒ Extended Home Control Event Reports

1*79 — Home Control Event Report Types

☒ Alarm, ☒ Troubles/Check, ☒ Bypass

☒ Open/Close, ☒ System, ☒ Test

1*70 — Event Log Types

☒ Alarm, ☒ Check, ☒ Bypass

☒ Open/Close, ☒ System, ☒ Test

LRR Event Log Types For CS#1

☐ Alarm, ☐ Trouble, ☐ Bypass

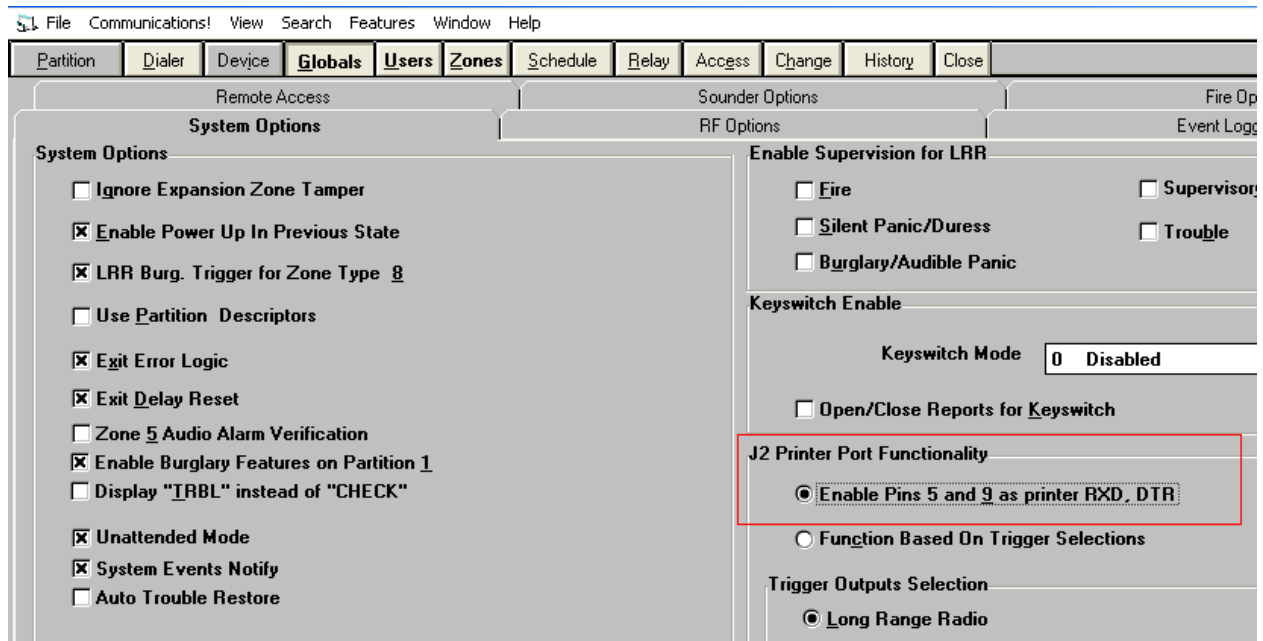
☐ Open/Close, ☐ System, ☐ Test

LRR Event Log Types For CS#2

☐ Alarm, ☐ Trouble, ☐ Bypass

☐ Open/Close, ☐ System, ☐ Test

4. On the 128FBP controls you must enable 3*19, Enable J2 Printer Port Pins 5 & 9 as RXD, DTR:



Troubleshooting the 4100sm:

- The mounting distance for the 4100sm from the control can not exceed the 4142tr cable.
- The cable between the 4100sm and the Automation PC is 50 ft. maximum. Shielded Cat 5 wire is recommended. See the chart below for the Pin out in the event you need to extend it further than the 10 ft. cable that comes with the 4100sm.

DB9	DB25	Name
1	8	DCD
2	3	RxD
3	2	TxD
4	20	DTR
5	7	SG
6	6	DSR
7	4	RTS
8	5	CTS
9	22	RI

Table 1: Cable Pin Out

- Only the RXD, TxD, and SG are used
- The connected PC must be capable of receiving continuous 1200-baud data.

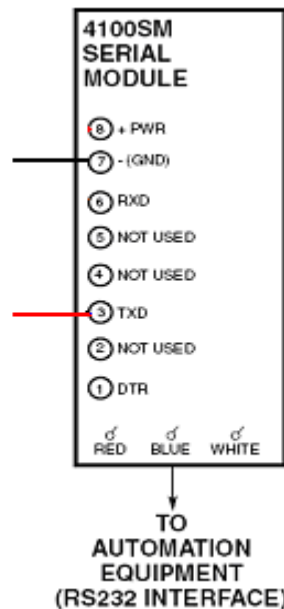
- Testing the Transmit and Receive Data Voltages at the 4100sm.

Receive:

Meter terminal #3 to ground.

With no data transmitting (from the automation) it should sit idle at 4Vdc and when the Automation is transmitting it will pulse to 1Vdc.

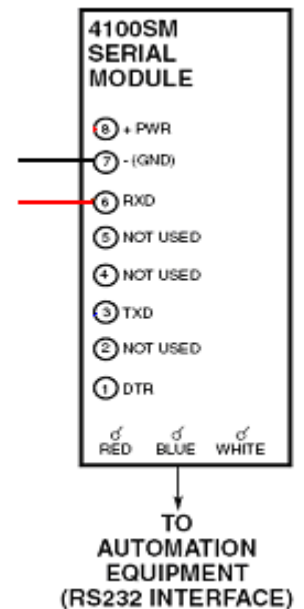
If not pulsing, on the 'BP' control panels check the zone voltage; this should read 4vdc from terminal 23 to ground. On the 'FBP' this should be metered on the Violet Wire.



Transmit:

Meter terminal #6 to ground.

With no data transmitting (from the panel, it should sit idle at -800mVdc and when the panel is transmitting it will spike to 6Vdc.

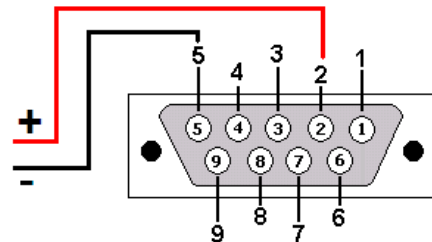


- Make sure the Communications Protocol for the 4100sm is set for 1200 baud, 8 data bits, no parity, and one stop bit.
- Testing the Transmit and Receive data at the end of the cable:

- Unplug the cable from the automation and test the receive data from the panel as follows:

With no data transmitting it should sit idle at -11VDC. should Pulse to +11VDC when panel is transmitting the

If this voltage exists then we know that the panel is data out. If they claim they are still not getting any info the HyperTerminal troubleshooting section for view the real time.

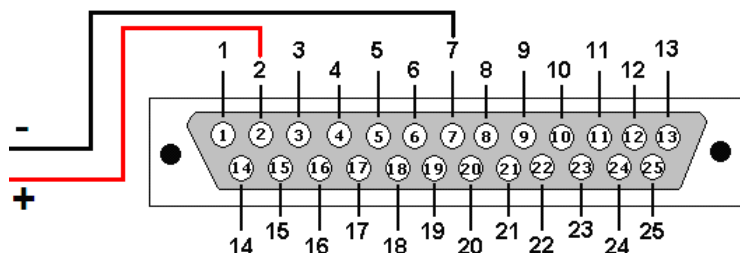


It data. sending then use status in

- Unplug the cable from the 4100sm and test the transmitted data, from automation, as follows:

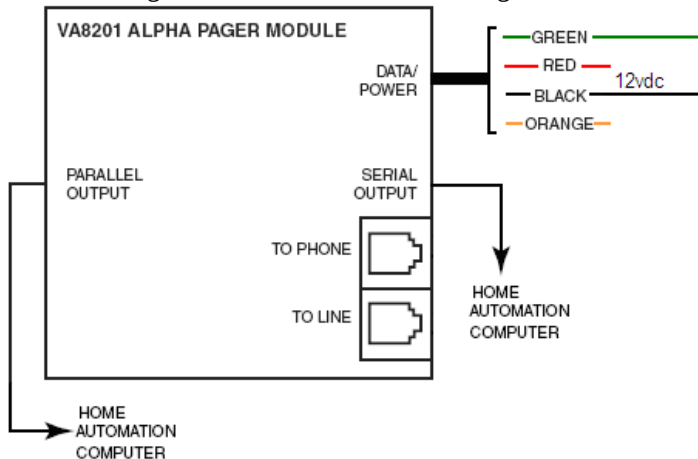
With no data transmitting it should sit idle at -11VDC. Should Pulse to +11VDC when Automation is transmitting data.

If this voltage exists then we know that the Automation is sending data out. If they claim they are still not getting any info then use the HyperTerminal troubleshooting section.

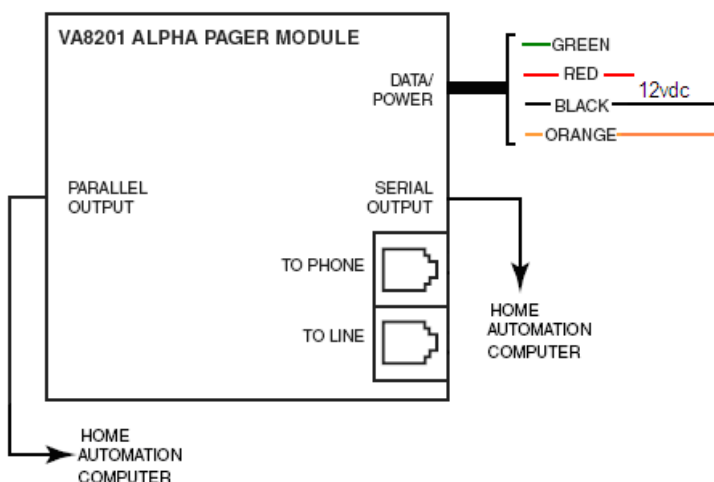


Troubleshooting the VA8201:

- The VA8201 cannot be any further from the panel than the distance of the trigger cable. This is a limitation of the driver on the panel. The home automation pc itself can be up to 50 ft. from the VA8201. See [Table 1](#) for the cable Pin out, in the event a cable needs to be fabricated.
- Testing the Transmit and receive Voltage:



The green wire to panel ground should read -11Vdc when there is no data from the Home Automation being transmitted. When data transmits you should have 11vdc.



On panel transmission the orange wire will jump 11vdc and when in the idle state the voltage will sit at -11Vdc in.

- Make sure the Communications Protocol for the VA8201 is either:
 - 1200 baud, 8 data bits, no parity, and one stop bit

Common Troubleshooting Tips

System is functional but there is no data transmission from the panel?

- Data fields to check:
 - *05 – System Events Notify.
 - Enables RS232 Communication to the output (see *14)
 - 1 enables all events in location 1*79 and faults and restores.
 - *14 – RS232 input
 - ‘BP’ < Rev 4 series control: putting a 1 will set up zone 09 for rs232.
 - ‘FBP’ series control: entering a 1 toggles the red wire, on the J2 output, from trigger to rs232

- 1*70 – Event log types enable
‘BP’ & ‘FBP’ Controls: this is what is sent via rs232, Alarm, check, bypass, open/close, system, and test. To enable all entry will be 11111.
- 1*78 – Extended Home Control Event Reports
If there is a 0 here you will only get the basics commands with a 1 here you will get the extended commands enabled in 1*79.
- 1*79 – Home Control Event Report Types
With field 05 setup for a 1 you will need to make sure that you have the proper events programmed to notify the rs232. Options are Alarm, Trouble, bypass, open/close, system, Test.

The panel is transmitting data to the Home Automation; however the home automation data is not affecting the panel?

- What to check:
 - Check the voltages on the incoming rs232 path.
[Refer to the 4100sm voltages above.](#)
[Refer to the VA8201 voltages above.](#)

Panel is showing ‘Pager Offline’?

- What to check:
 - Only shows up when using the 4100sm and 2*30 is enabled, this field should be disabled when using the 4100sm.

Panel begins to dial but does not go through when the automation is set up?

- What to check:
 - In the Home Automation software the ‘Poll Enable” feature must be slowed down to 40 seconds (or disabled).
 - What happens is the panel is trying to report and the automation polls the panel it will stop sending info to the dialer, send via rs232, and then back to the dialer when complete. At this point the panel has forgotten what it was trying to report.

How to test the communication transmission using HyperTerminal.

1. Select Start → Programs → Accessories → Communications → HyperTerminal.

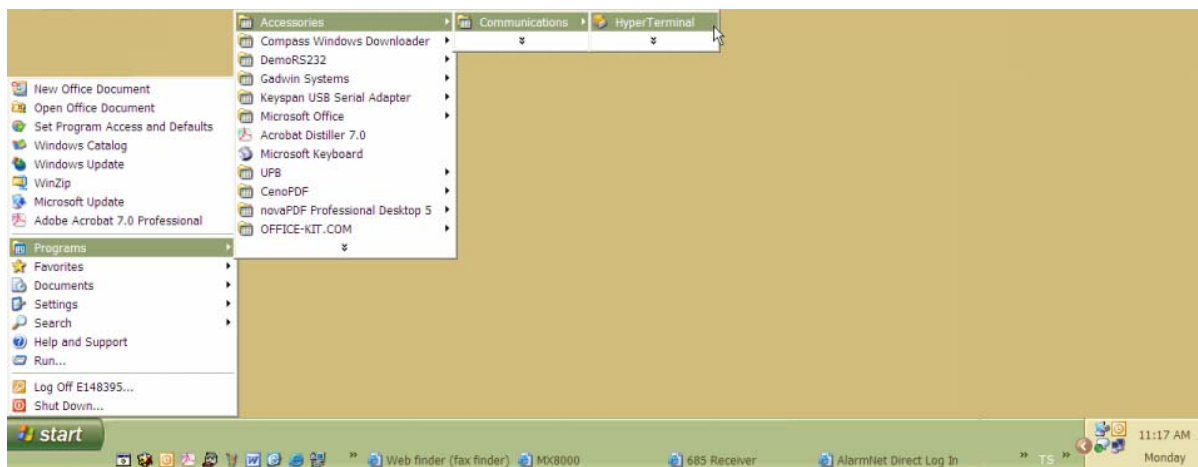


Figure 5: Accessing HyperTerminal

2. New communication wizard will automatically come up. You want to name the connection:



Figure 6: Naming Connection

3. Next we need to set up HyperTerminal for communication to comport 1 (or what ever comport you are using.)

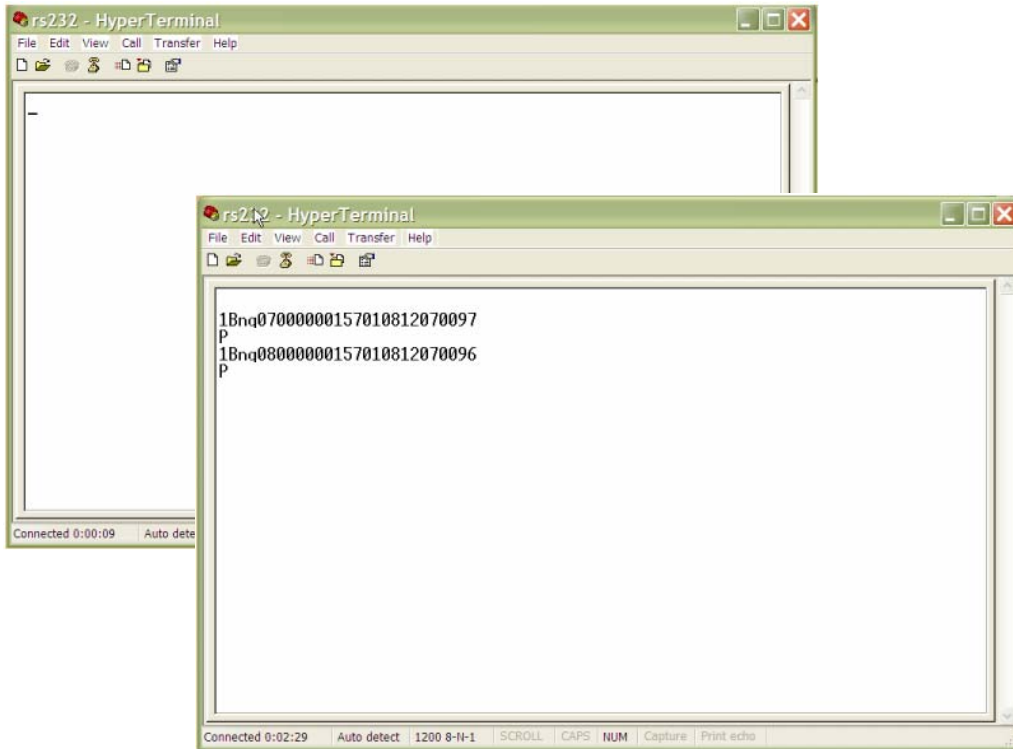


Figure 7: Directing Connection

4. The next option is the program the comport transmission format as shown below:



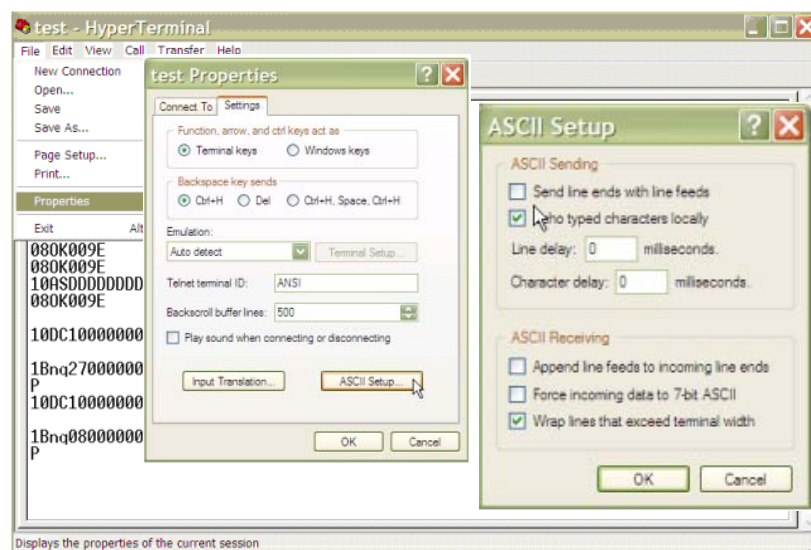
- The following screen will be displayed:



As long as all voltages, wiring, and programming are set up properly above then you should see data in real time.

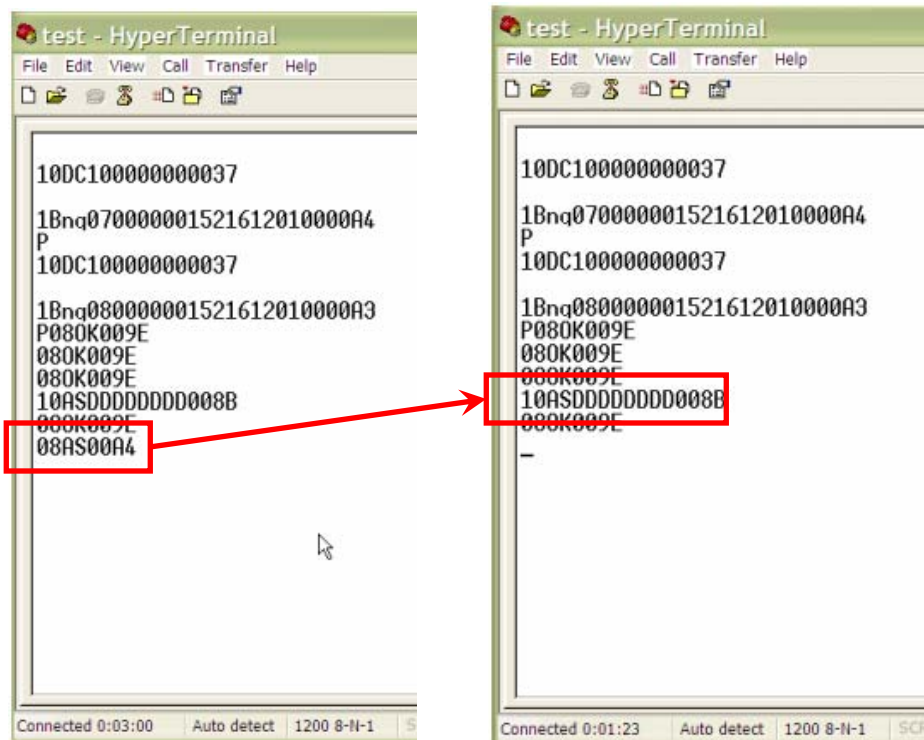
Controlling the panel via HyperTerminal:

- To view the keystrokes that you enter we need to enable “Echo” so we can verify what we are typing in:



- Now select “Settings” then “ASCII”

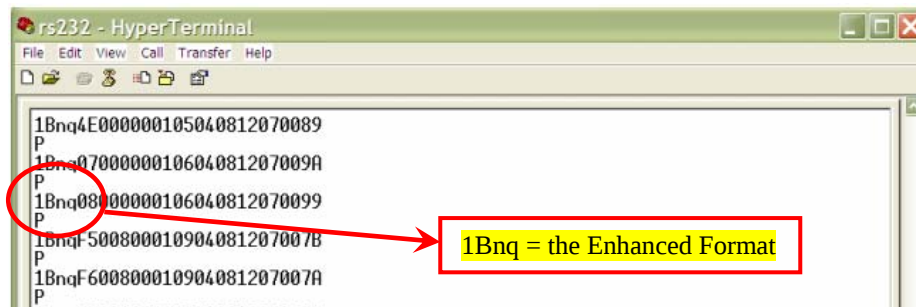
3. Check the Box that says “Echo Type Characters Only”
4. Now we can type a View the Command we are typing in:



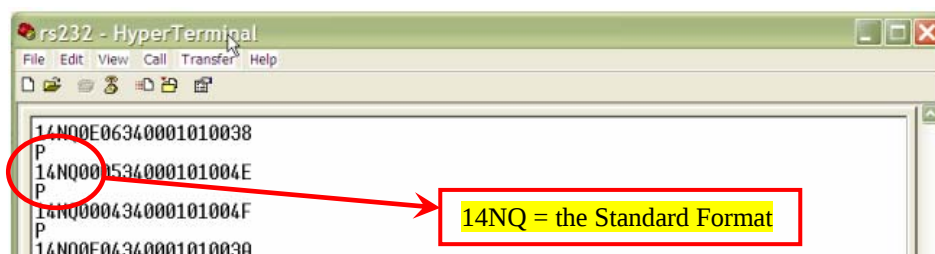
To view partition Status you can type in 08AS00A4 then “Enter” and you will receive the partition status as 10ASDDDDDDDD008B followed by a 080K009E (Ready for new command). See above for details.

Verifying the Transmitted Format via HyperTerminal

- Enhanced protocol:

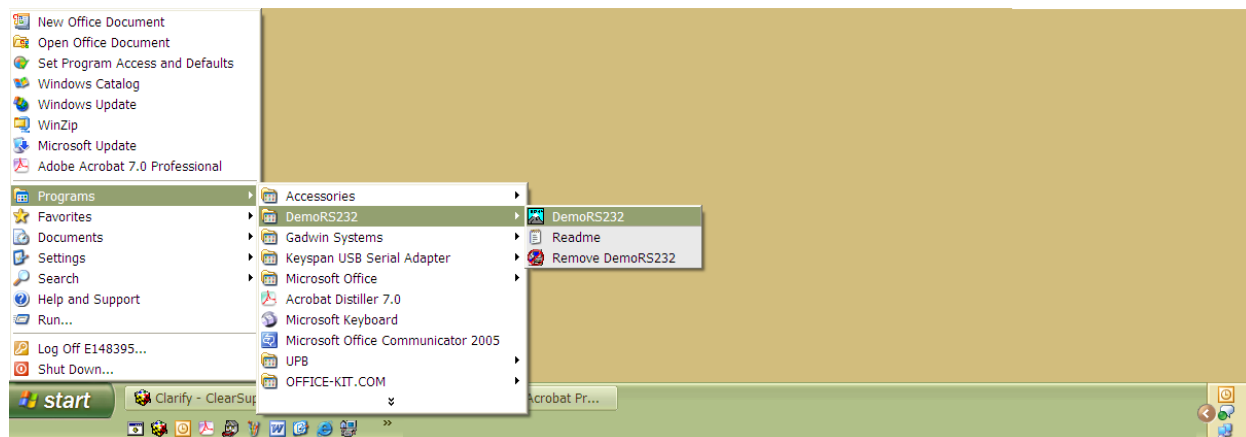


- Standard Protocol

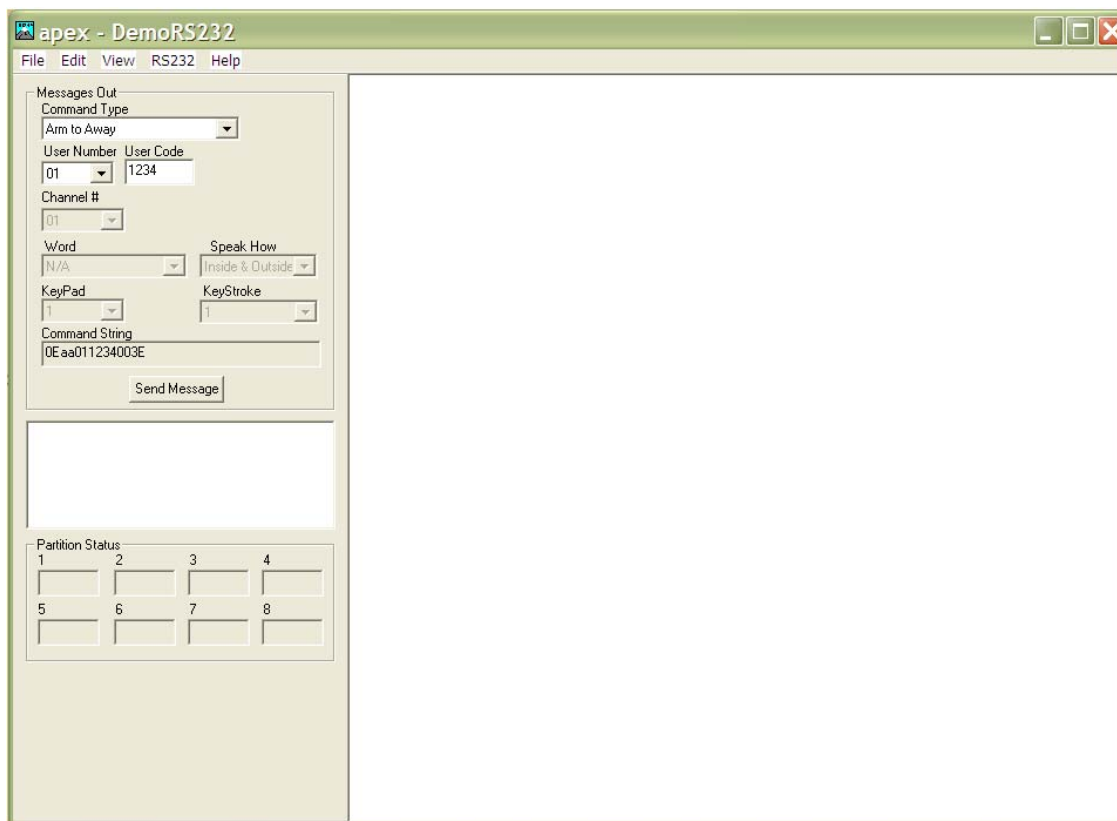


How to test data transmission using the RS232 demo software:

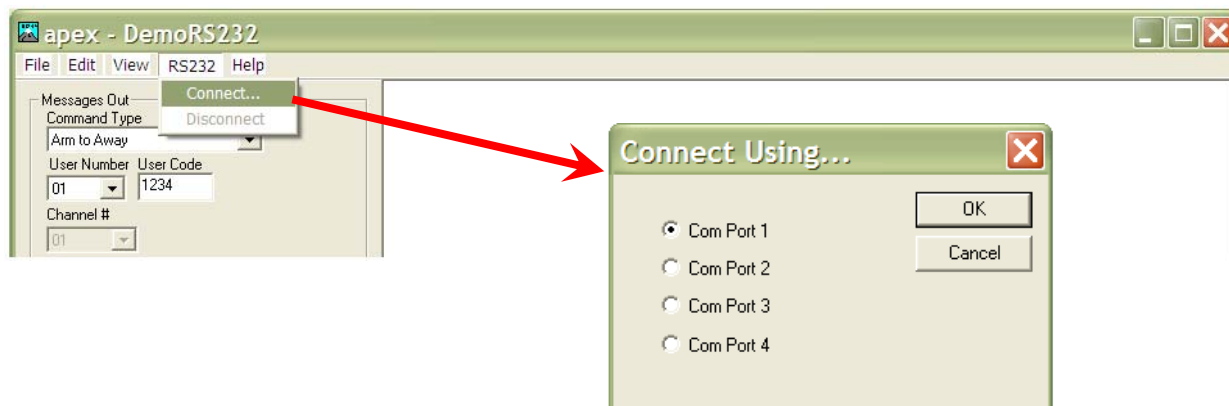
1. Install the rs232 demo software
 - If downloaded off the internet the password to open the zip file is demo.
 - This is Windows Vista Compatible
2. Select Start → Programs → DemoRS232



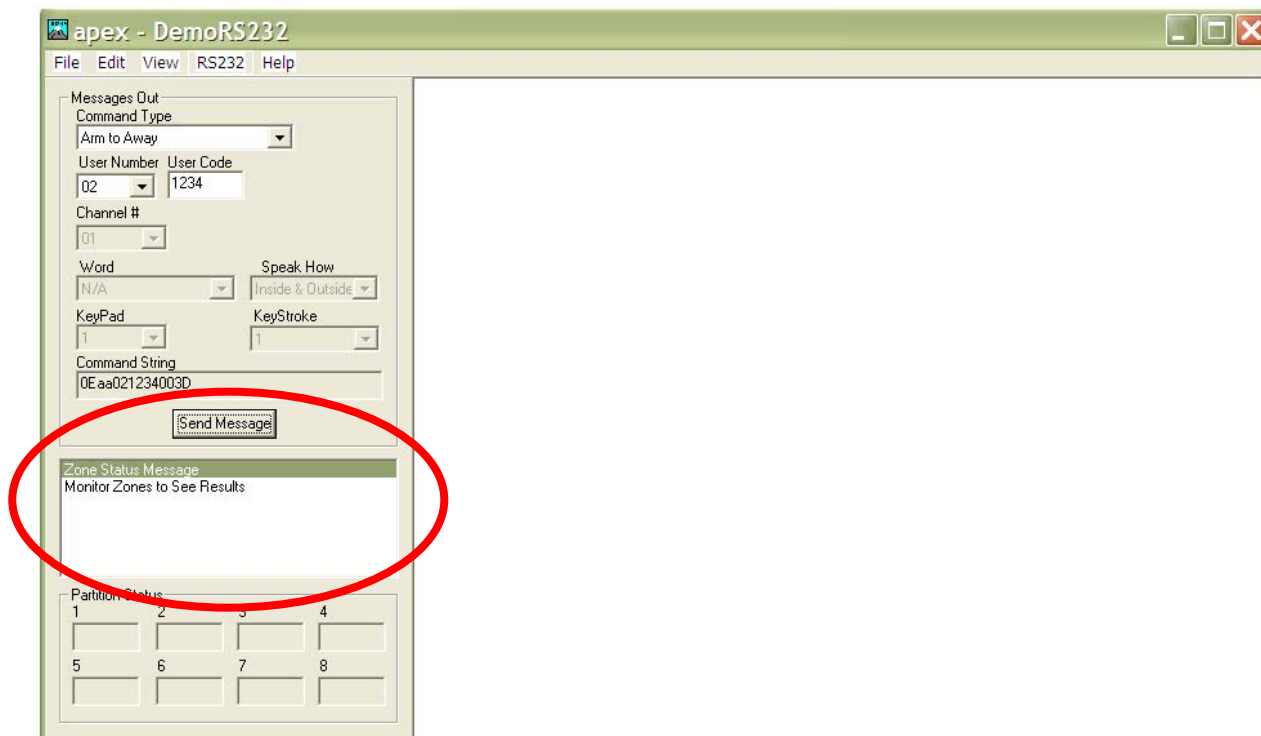
3. The open window of the DemoRS232 software looks like:



4. Now Connect to the panel using a comport:

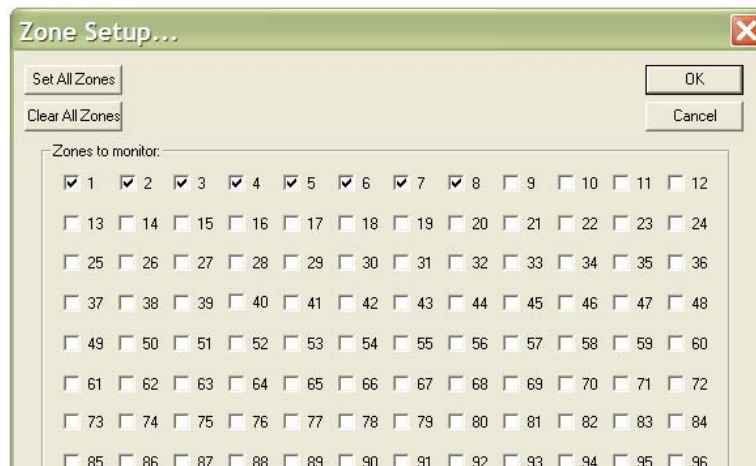


5. You will know that you are connected when you see the zone status indication on the left:



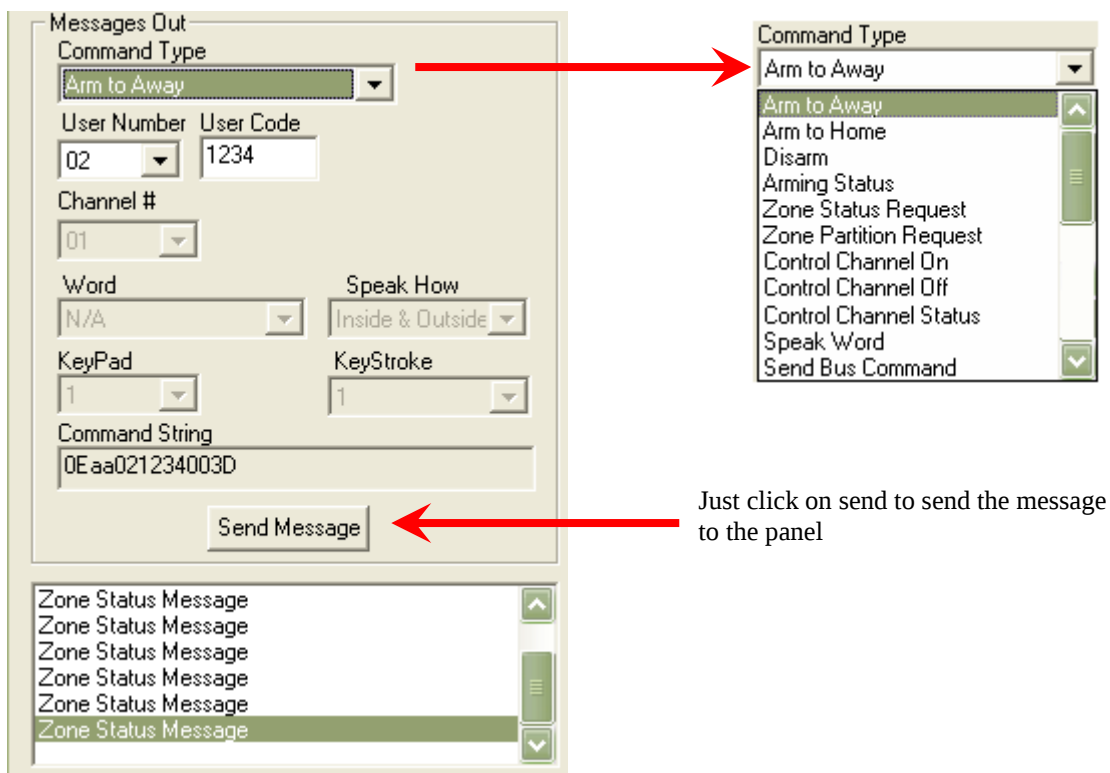
6. To view the zone status:

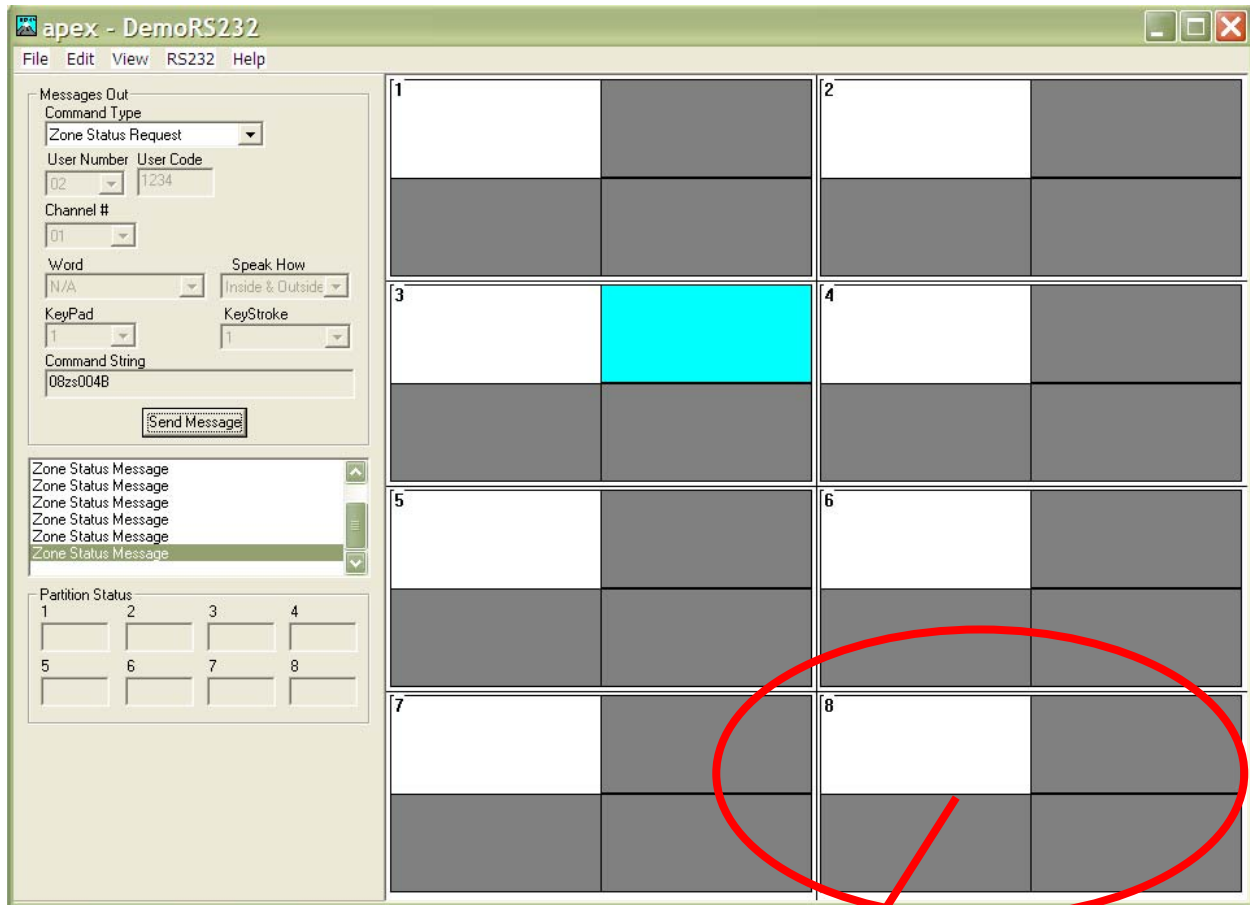




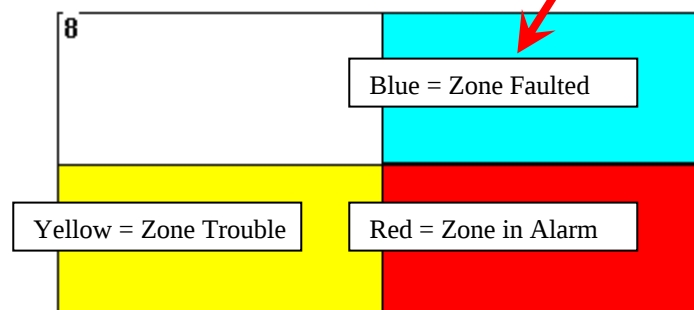
- Select the zones that you want to view

7. How to send commands to the panel:



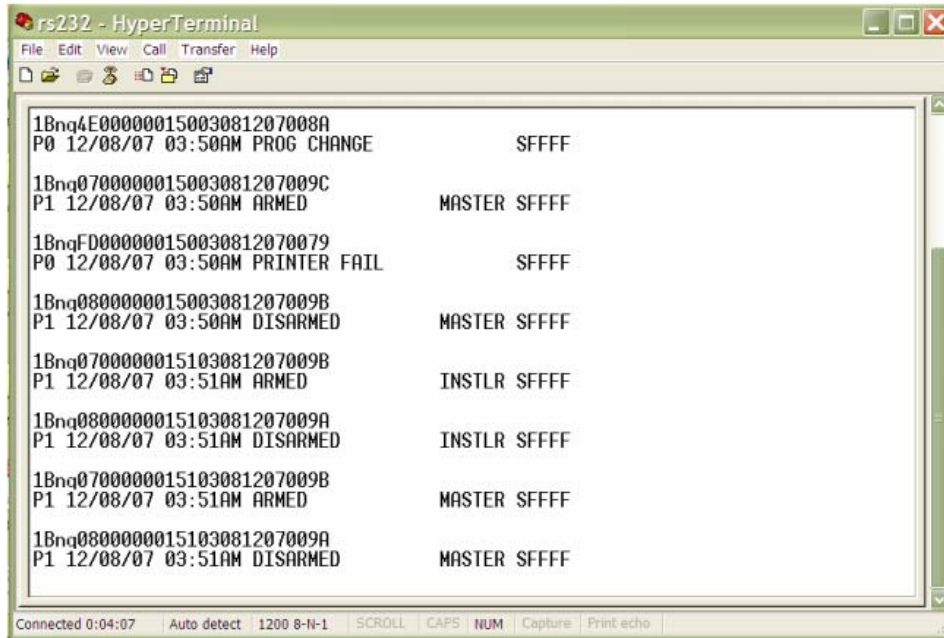


- Shows zone 3 faulted



Why am I getting printer Data when viewing through HyperTerminal?

- If you are getting the screen below it is because field 1*72 is enabled.



What USB to Serial Adapters are compatible?

- Check the list Below:

Manufacturer	Part #	Notes	Supported OS	Web Address
Keyspan	USA-19HS	This unit has been tested, and is approved in WINDOWS XP and 2000, for direct connect, via the 4100SM, and the CIA modem, when emulating COM 1 - COM 4.	Windows XP Windows Vista	www.keyspan.com
Hawking	HUC-232S	These units have been tested for modem and direct connect communications with Windows XP Pro, SP2 only. We can not verify it will work on any other operating system.	Windows XP	www.hawkingtech.com

- Other USB to serial adapters may be used. These adapters have not been tested by tech support; hence they are not supported by tech support.