UUT MODULE SETUP PROCEDURE WITH

VERSATENN V CONTROLLER

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1.0 APPLICATION

♦   This procedure is primarily used to install and set up one or more UUT (Unit Under Test) Modules to display temperature data on the VersaTenn V Touchscreen Interface.

♦   If a UUT Module is <u>already installed</u> in your chamber, <u>go to Step 9 in the SETUP PROCEDURE (Section 4.0) for instructions on how to view</u> your thermocouple temperature readings on the VT V touchscreen.

♦   Refer to the UUT Module – Board and Connector Layout Drawing at the end of this document.

2.0 UUT MODULE SPECIFICATIONS

♦   One to four UUT Modules can be used with the VT V Controller.
♦   Each module can accept up to 16 thermocouple inputs for a total of 64 possible inputs.
♦   Only Type T Thermocouples can be used.
♦   RS-485 Data Communications is used to communicate with each UUT Module.

3.0 PRELIMINARY PROCEDURE

Disconnect power to the test chamber before starting. **Lock-out / Tag-out** your power source.

In order to configure the UUT Module and to make all necessary connections, you must do the following.

♦   Remove the top cover from the UUT Module Assembly. (6 screws)
♦   Remove the 4-sided frame shield from the base of the UUT Module. (4 screws)

Once the items above have been removed, you will note the following cables that are connected to the UUT Module.

♦   Power Supply Cord: Black 2-wire cord with plug-in transformer, connected to Terminal Block P1.
♦   RS-485 Interconnect 9-conductor ribbon cable, connected to Connector P6.

4.0 SETUP PROCEDURE

Important Note: Use great care when making the connections described.

1.   Set up the UUT Module Address. Locate the small square selector switch on the UUT Module labeled "Address Switch". Turn the dial on the switch to the proper Module Address setting indicated in the table shown.

16 CHANNEL MODULE ADDRESS SWITCH SELECTION	
MODUL NO.	**SETTING**
Module 1	1
Module 2	3
Module 3	5
Module 4	7

2.   Locate the RS-485 nine-pin <u>female</u> plug, which is either plugged into the back side of the RS-485 port on the Data Communications panel, or is hanging freely behind the panel (for chambers not ordered with RS-485). The Data Comm. panel is located on the right side of the chamber.

      Note: For chambers not initially supplied with an RS-485 port, look for the ribbon cable connected to the RS-232 port. This ribbon cable is split and has a nine-pin <u>female</u> RS-485 plug connected to one side of the cable (and hanging freely).

3.   Locate the RS-485 Interconnect 9-conductor ribbon cable connected to the UUT Module. There are four additional 9-pin <u>male</u> connectors attached throughout the length of this rolled-up cable. These are labeled M1 thru M4 on the UUT Module drawing.

      Connect one of the 9-pin <u>male</u> connectors from this Interconnect ribbon cable to the RS-485 nine-pin <u>female</u> connector that you located in Step 2.

4.   Connect your T/C input wires to the appropriate terminal blocks P2 - P4 on the UUT Module. Consult the Thermocouple Connection Tables on the UUT Module drawing for proper terminations.

5.   Replace the metal 4-sided frame shield to the UUT Module base. Be extremely careful to route the thermocouple wires and the power supply cord safely through the appropriate opening to avoid pinching.

6.   Plug in the UUT Module Power Supply to a 120 Volt outlet.

      Verify that the green LED on the UUT Module is illuminated. It should be full ON.

      Note: The table at the right shows the board power supply connections to the P1 connector.

      Note: An additional RS – 485 connection is provided with each UUT Module using the P1 Connector as shown.

BOARD PWR SUPPY and RS - 485 CONNECTION TABLE - P1 CONNECTOR	
DESIGNATION	**TERMINAL**
Board GND.	P1 - 1
Board POWER	P1 - 2
COMM RX -	P1 - 3
COMM TX +	P1 - 4
COMM TX -	P1 - 5
COMM RX +	P1 - 6

7. Turn on power to your test chamber. Once the VersaTenn V completes the boot-up procedure, press the COMM Navigation key. Open the RS-485 folder to arrive at the screen below.

   Configure **"RS-485 Mode"** and **"Station Address"** to the values displayed in the screen below by pressing on each item. Make the necessary changes in the screens that follow. Configure the **"Number of UUTs"** using the chart on the right. It is important that this value is correctly entered.
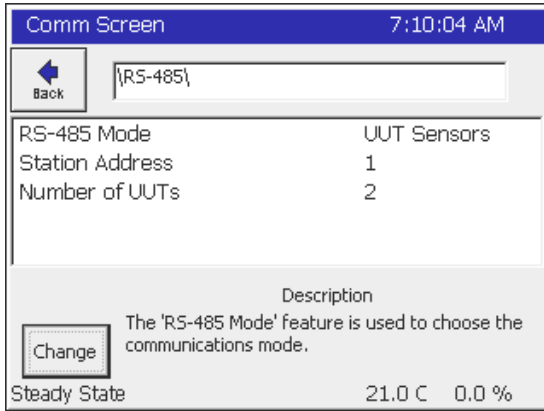

Number of Thermocouples	"Number of UUTs" Value To Be Entered
1 – 16	2
1 – 32	4
1 – 48	6
1 – 64	8

8. Cycle power to the chamber. However, leave the UUT power supply plugged in to the 120 V outlet.

   After the VersaTenn Touchscreen boots up successfully, verify that the green LED on the UUT Module is blinking. This confirms that data communications has been established between the VersaTenn and the UUT Module.

   Important Note: When you have more than one UUT Module, verify that the green LED blinks on each module. Each module is sequenced as the VersaTenn verifies data communication between each of the modules. You will see a slight delay in the blinking of each LED. Replace top cover.

9. **Verify thermocouple temperature readings.** Press the EVENTS Navigation key on the VersaTenn Touchscreen. Open the "UUT Temperature" folder to arrive at the screen below.
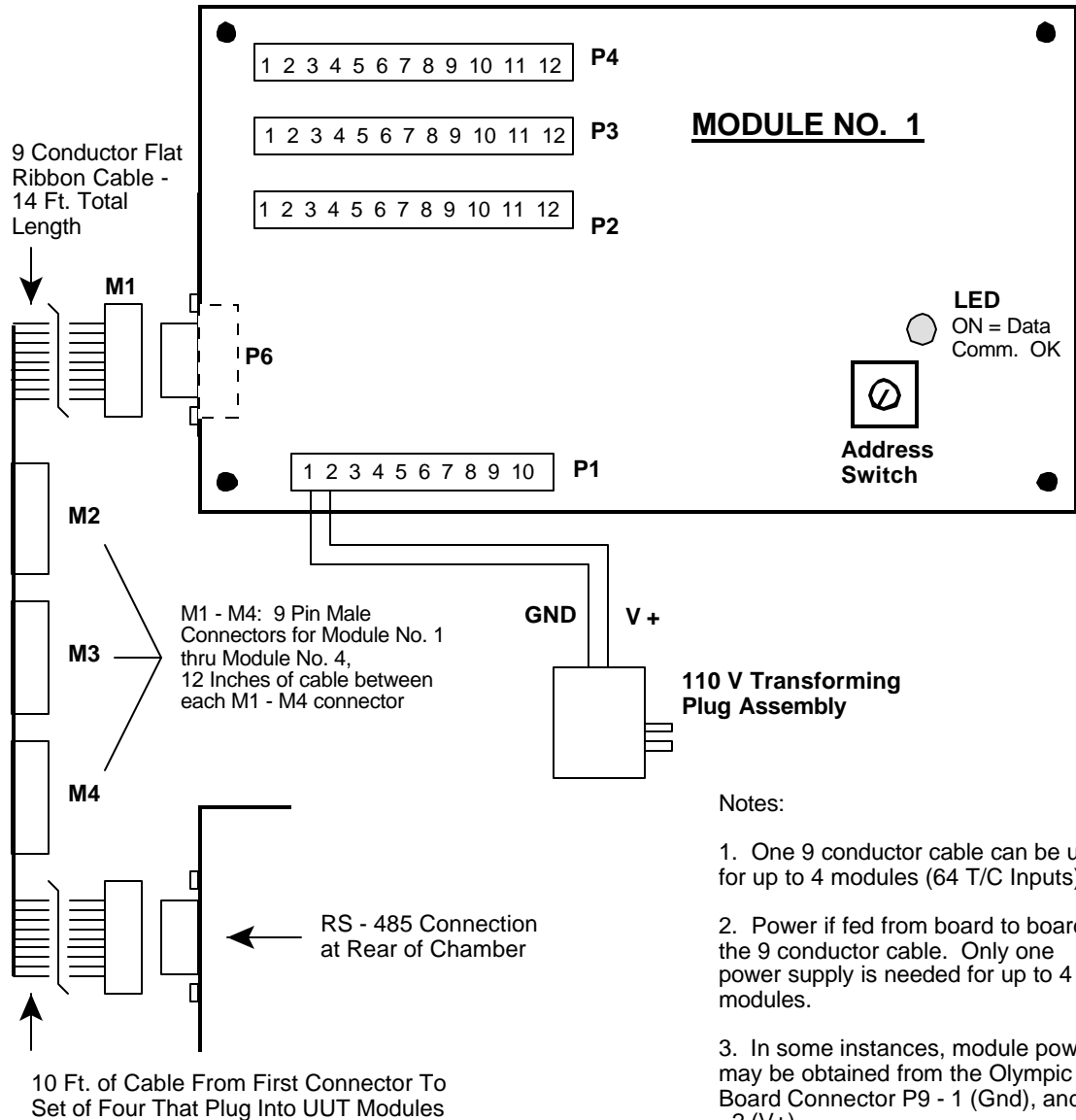
File Path Bar Display
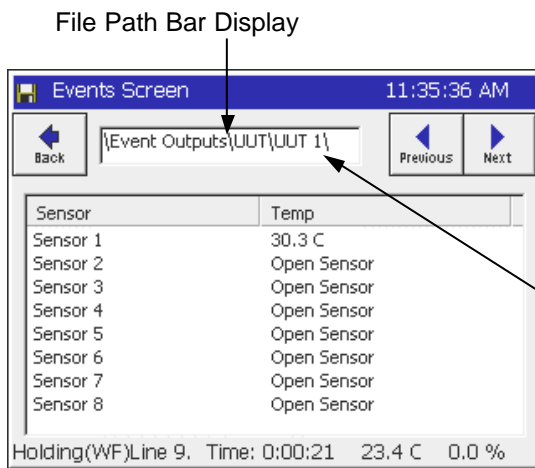
Please note the following:

- - Remember that each UUT Module can accept up to 16 T/C inputs.

- - Each screen displays 8 sensor inputs, and **all** are labeled Sensor 1 thru Sensor 8. You must view 2 screens to show all 16 inputs of each module.

- - Press the "Next" button to view the next set of eight sensors for the first UUT Module. The display (where indicated by the arrow) will change from UUT1 to UUT2. The UUT2 screen will show the readings for actual sensors No.'s 9 – 16.

To view sensor inputs for UUT Module No. 2, 3, & 4, continue pressing the "Next" button. UUT Module No. 2 will be represented by UUT3 / UUT4 in the file path bar display, module No. 3 --- UUT5 / UUT6, etc.

Important Note: If your screen shows **"x.x"** for sensor "Temp", go back to Step 7 and verify the "No. of UUTs" entered.

UUT MODULE - Board and Connector Layout

MODULE NO. 1

9 Conductor Flat Ribbon Cable - 14 Ft. Total Length

P4
P3
P2

M1

P6

LED
ON = Data Comm. OK

Address Switch

P1

M2

M3

M1 - M4: 9 Pin Male Connectors for Module No. 1 thru Module No. 4, 12 Inches of cable between each M1 - M4 connector

GND   V +

M4

110 V Transforming Plug Assembly

RS - 485 Connection at Rear of Chamber

10 Ft. of Cable From First Connector To Set of Four That Plug Into UUT Modules

Notes:

1. One 9 conductor cable can be used for up to 4 modules (64 T/C Inputs).

2. Power if fed from board to board via the 9 conductor cable. Only one power supply is needed for up to 4 modules.

3. In some instances, module power may be obtained from the Olympic Board Connector P9 - 1 (Gnd), and P9 - 2 (V+).

TC1 – TC10 THERMOCOUPLE CONNECTION TABLE		
SENSOR	+ Term.	- Term.
TC1	P2 - 5	P2 - 6
TC2	P2 - 7	P2 - 8
TC3	P2 - 9	P2 - 10
TC4	P2 - 11	P2 - 12
TC5	P3 - 1	P3 - 2
TC6	P3 - 3	P3 - 4
TC7	P3 - 5	P3 - 6
TC8	P3 - 7	P3 - 8
TC9	P3 - 9	P3 - 10
TC10	P3 - 11	P3 - 12

TC11 - TC16 THERMOCOUPLE CONNECTION TABLE		
SENSOR	+ Term.	- Term.
TC11	P4 - 1	P4 - 2
TC12	P4 - 3	P4 - 4
TC13	P4 - 5	P4 - 6
TC14	P4 - 7	P4 - 8
TC15	P4 - 9	P4 - 10
TC16	P4 - 11	P4 - 12

RS – 485 COMM. CONNECTION TABLE - P6 CONNECTOR	
DESIGNATION	TERMINAL
COMM RX -	P6 - 1
COMM TX +	P6 - 2
COMM TX -	P6 - 3
NO CONN.	P6 - 4
GND.	P6 - 5
NO CONN.	P6 - 6
NO CONN.	P6 - 7
POWER	P6 - 8
COMM RX +	P6 - 9