



# APPLICATION NOTE

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USING A SERIAL RS232 MODBUS (ASCII) CONNECTION ON XLITE DATA LOGGERS

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## USING A SERIAL RS232 MODBUS (ASCII) CONNECTION ON XLITE 9210B DATA LOGGERS

APPLICATION NOTE

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## TABLE OF CONTENTS

<b>1.0</b>	<b>Overview</b>	<b>1</b>
1.1	Equipment Needed	1
<b>2.0</b>	<b>Xterm Operation Procedures</b>	<b>1</b>



# APPLICATION NOTE

USING A SERIAL RS232 MODBUS (ASCII) CONNECTION ON XLITE DATA LOGGERS

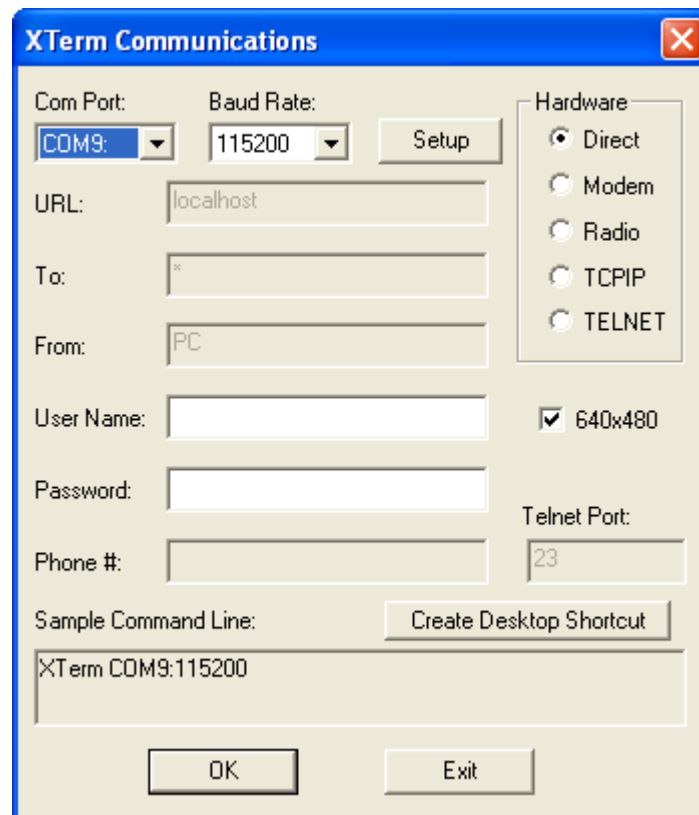
## 1. OVERVIEW

This note gives a step by step procedure on setting the Xpert/9210 loggers for a serial RS232 connection for MODBUS ASCII communication.

### 1.1 EQUIPMENT NEEDED FOR THIS PROCEDURE

- ▶ The 9210 unit.
- ▶ PC capable of XTerm programming and MODBUS application such as MODSCAN programming.
- ▶ (2) DB9 serial cables for PC to 9210 COM1 direct connect and COM2 MODBUS communication to a second serial PC port.
- ▶ NULL MODEM adapter for PC COM port connection.

## 2.0 XTERM OPERATION PROCEDURE



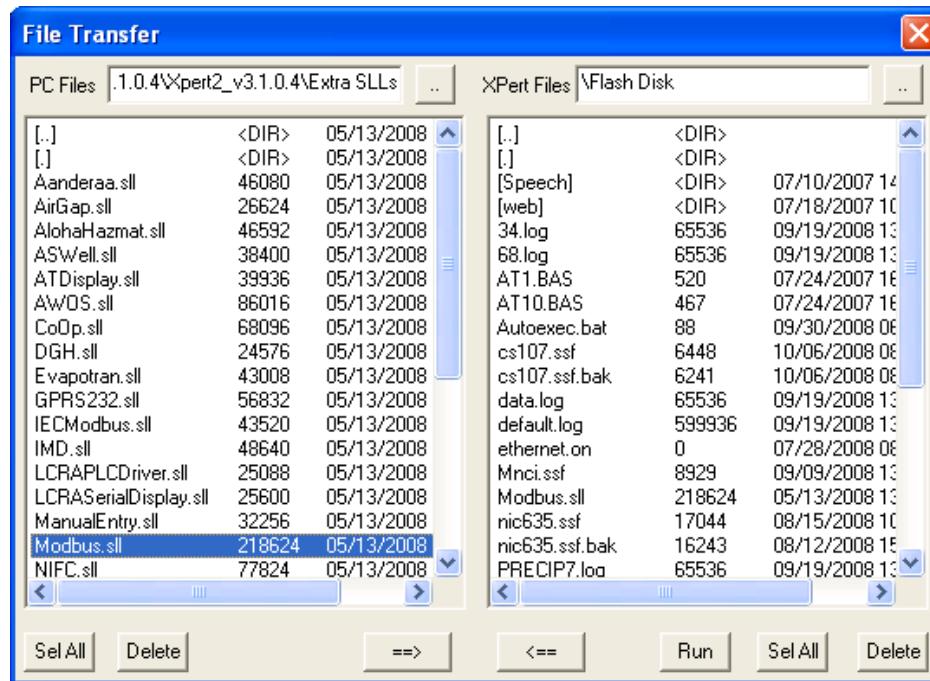
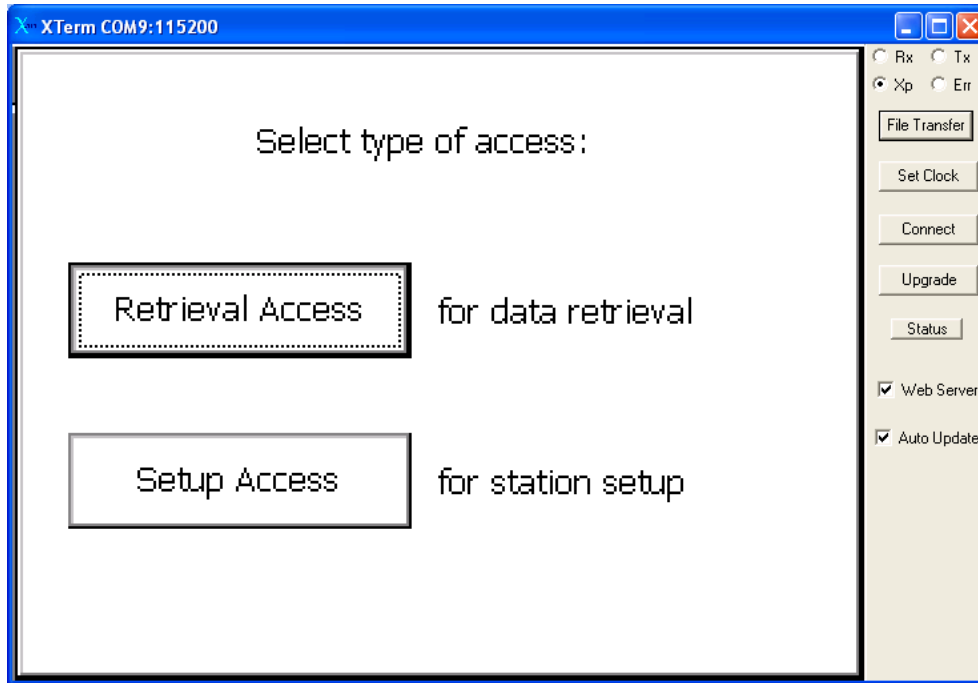
- ▶ Start XTerm as normal to connect to the 9210.
- ▶ You must transfer the Modbus.sll file INTO the 9210 first.



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USING A SERIAL RS232 MODBUS (ASCII) CONNECTION ON XLITE DATA LOGGERS

- ▶ Click on File Transfer button as shown below.



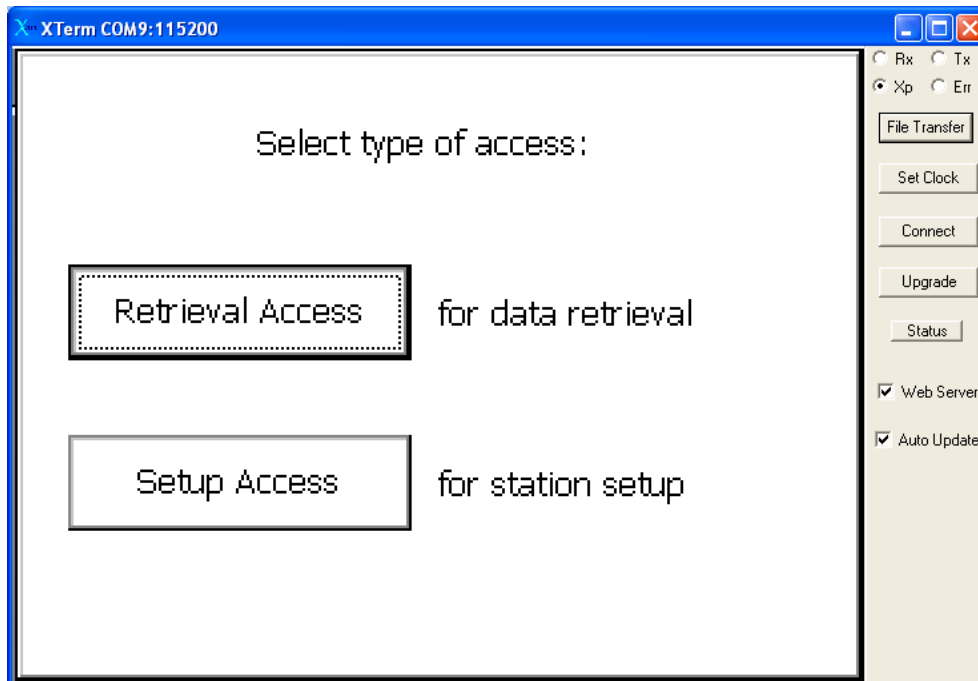
- ▶ Click on the \Extra SLLs folder then Select the Modbus.sll file on the left panel.
- ▶ Click on the ==> button to transfer the sll file INTO the 9210 \flash disk folder.
- ▶ Click the close button and exit Xterm.



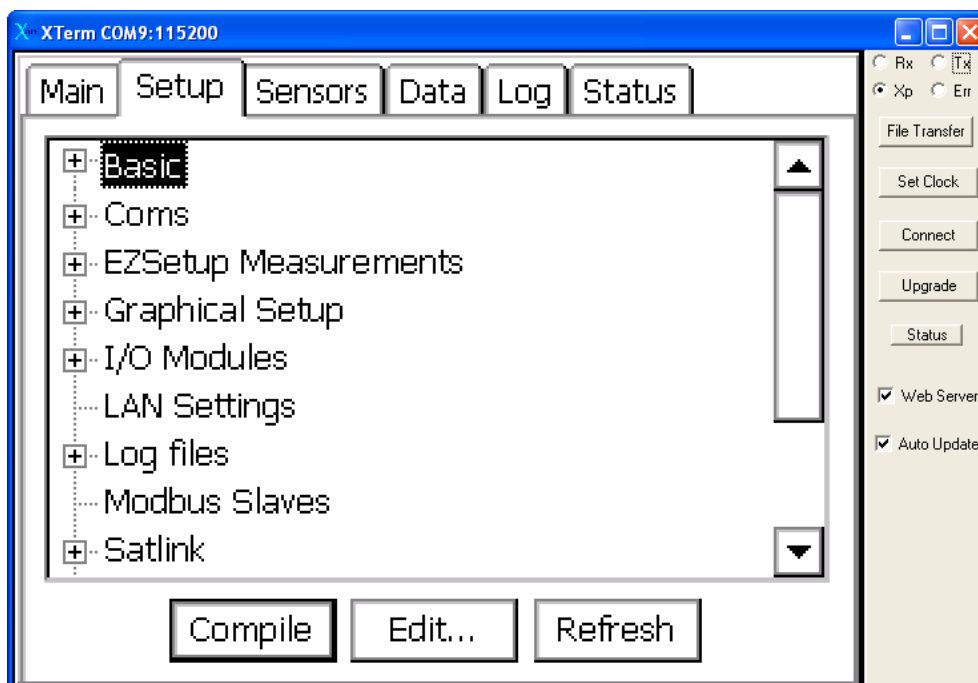
# APPLICATION NOTE

USING A SERIAL RS232 MODBUS (ASCII) CONNECTION ON XLITE DATA LOGGERS

- ▶ Re-apply power to the 9210 to load the sll file into the operating system.
- ▶ Restart the Xterm program as before.



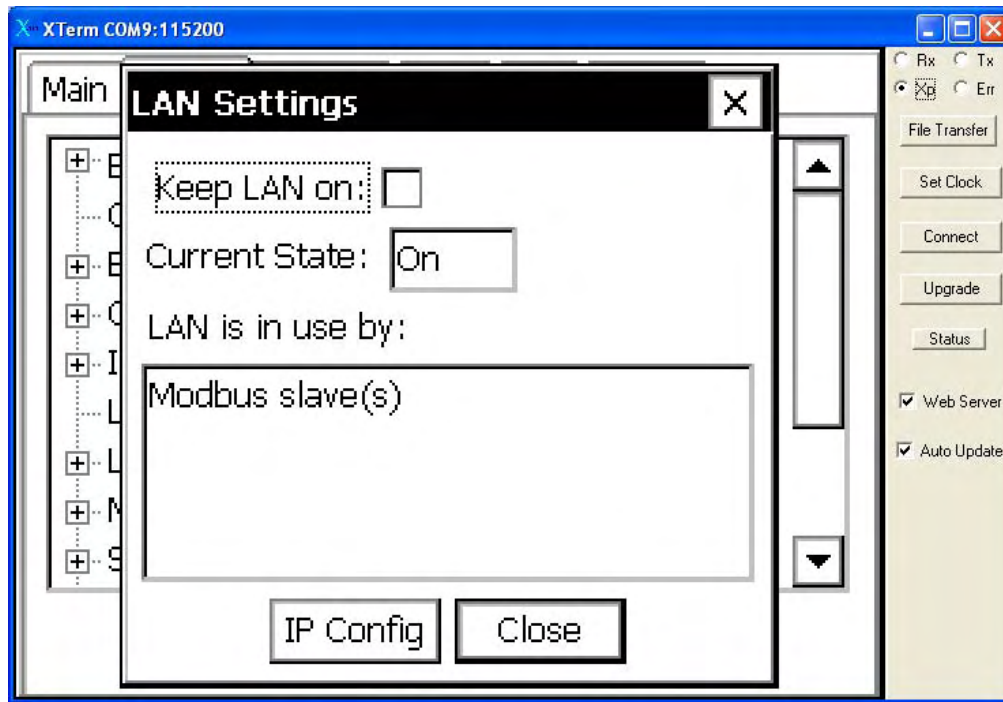
- ▶ Click on Setup Access and then click on the Setup tab at the top.



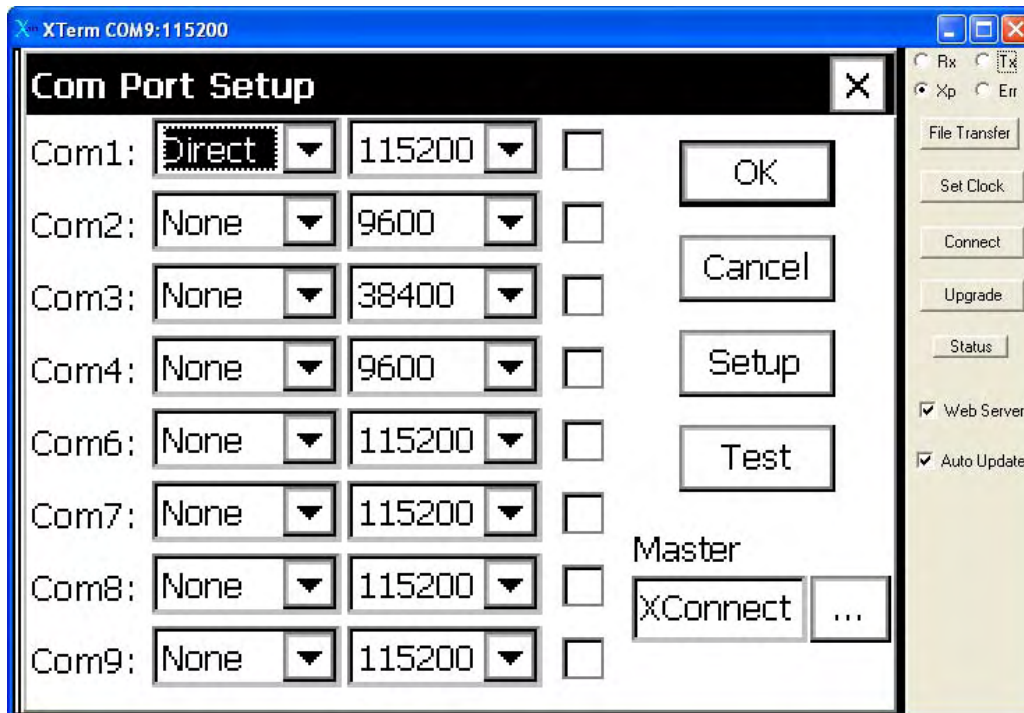


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- ▶ Notice Modbus Slaves is present but first...Click on LAN Settings edit button



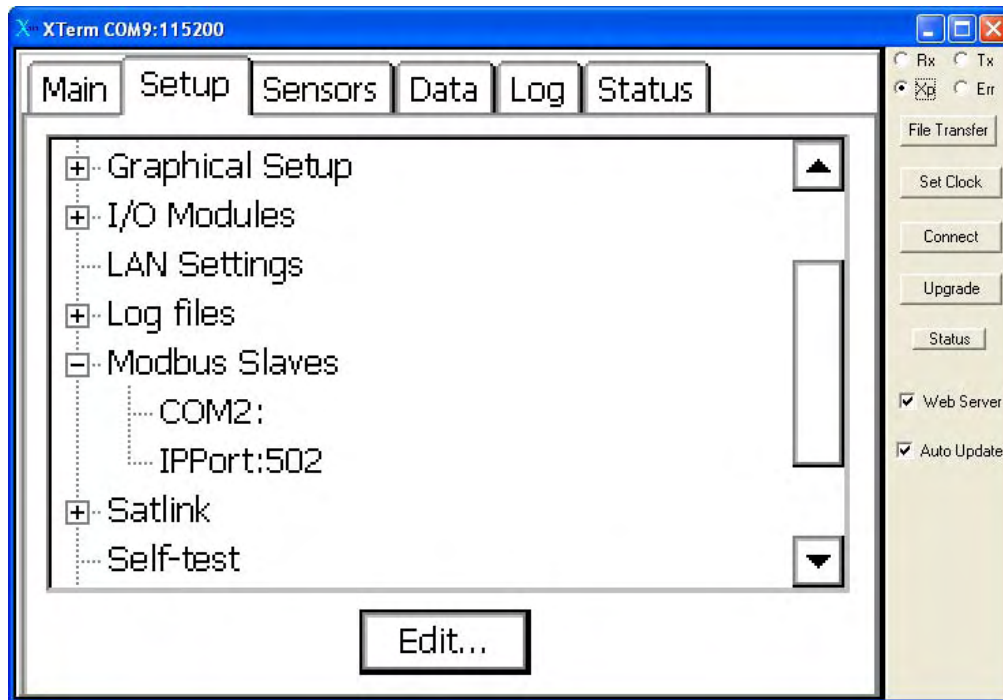
- ▶ Make sure Keep LAN on: box is NOT checked to make sure the hardware port is NOT active



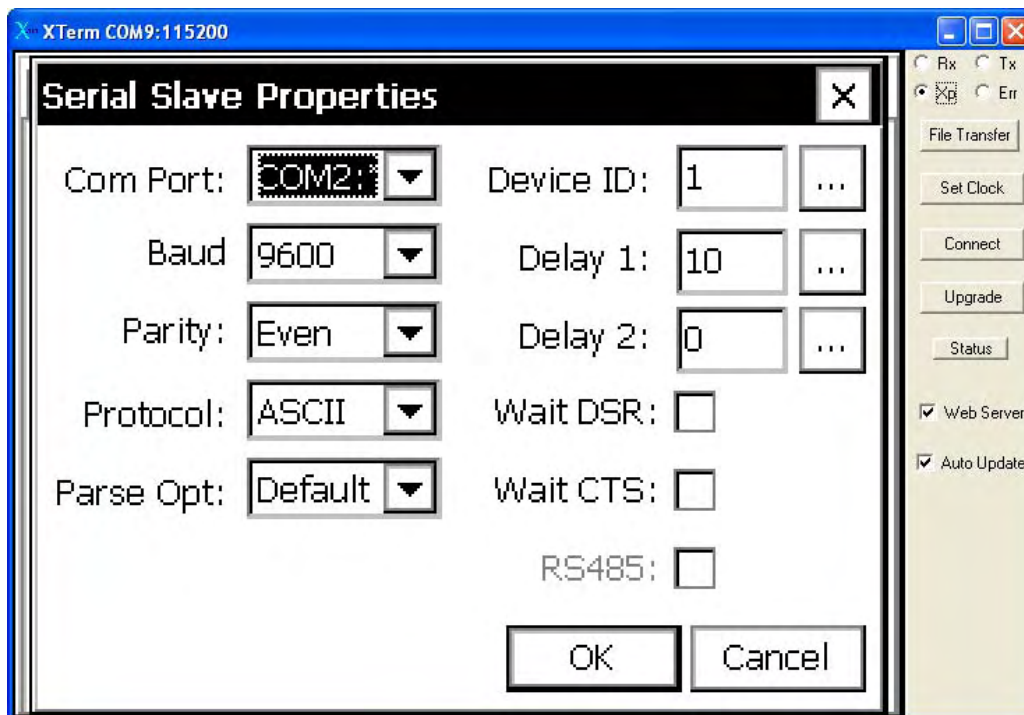


# APPLICATION NOTE

- ▶ Click on COMS Status tab and make sure the ports are as shown since SSP is NOT used



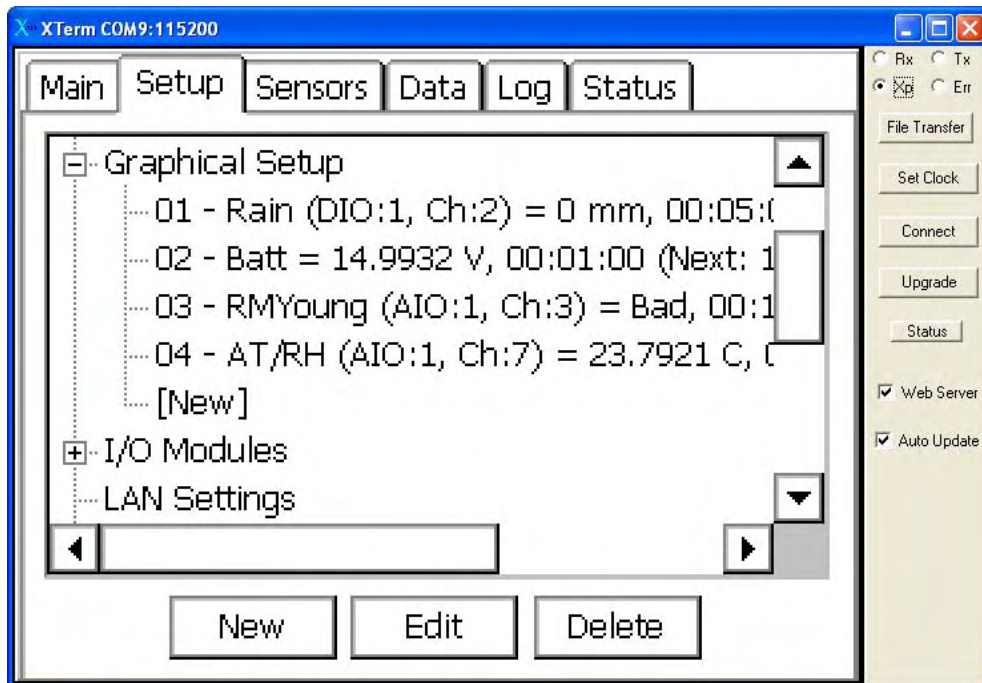
- ▶ Click on Modbus Slaves and setup COM2.



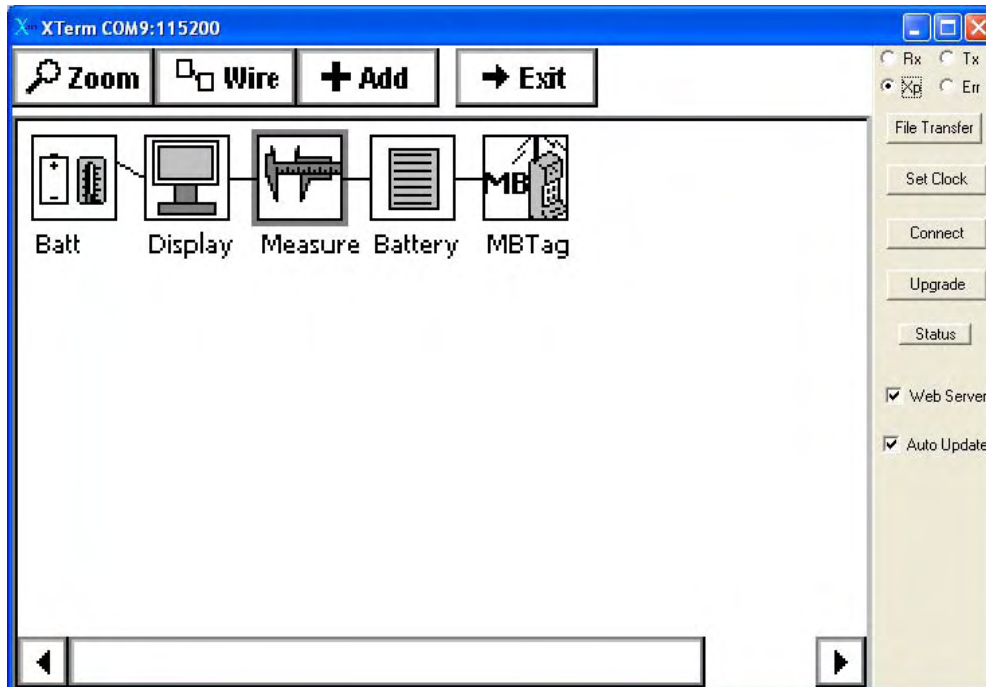


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- ▶ This is the setup screen you should have for the serial port now.
- ▶ MODBUS uses 7,E,1 data communication as a standard.



- ▶ Setup the sensors for the MODBUS tags settings

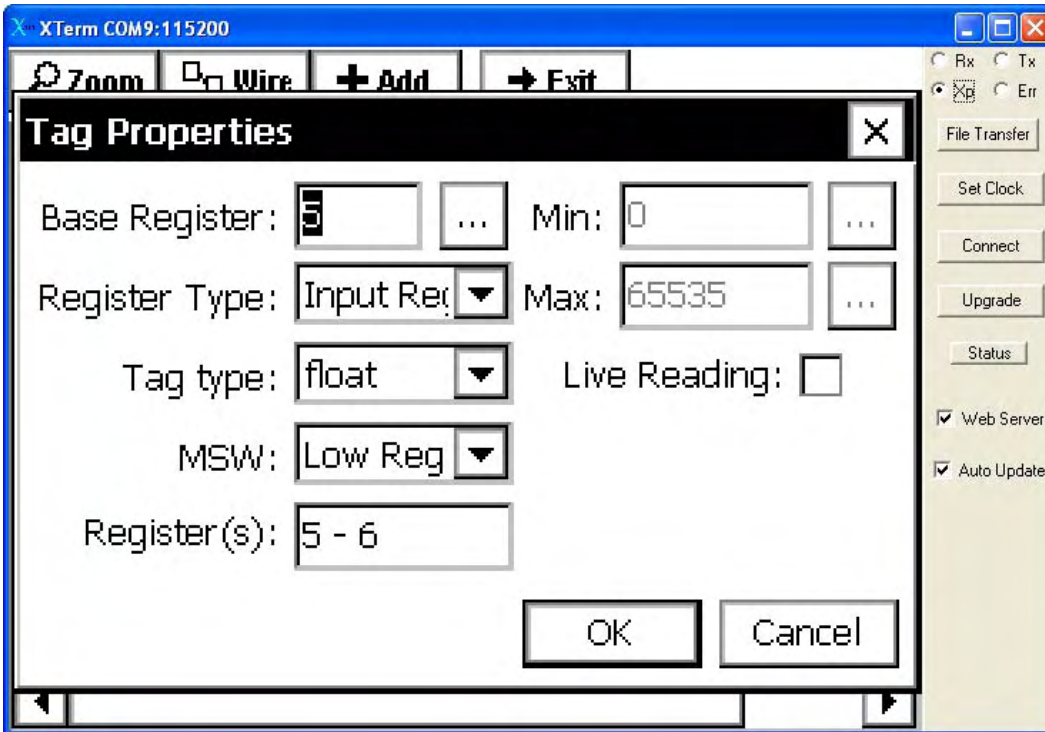




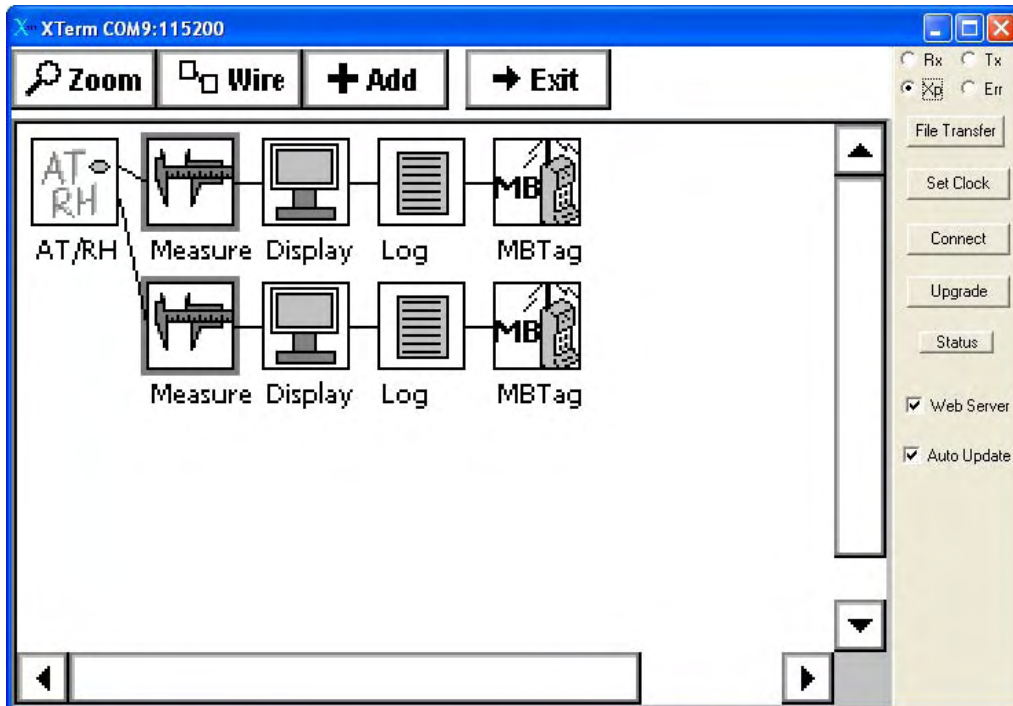
# APPLICATION NOTE

USING A SERIAL RS232 MODBUS (ASCII) CONNECTION ON XLITE DATA LOGGERS

- ▶ This is the battery sensor setup.



- ▶ Edit properties should be as shown above with address and float as required.



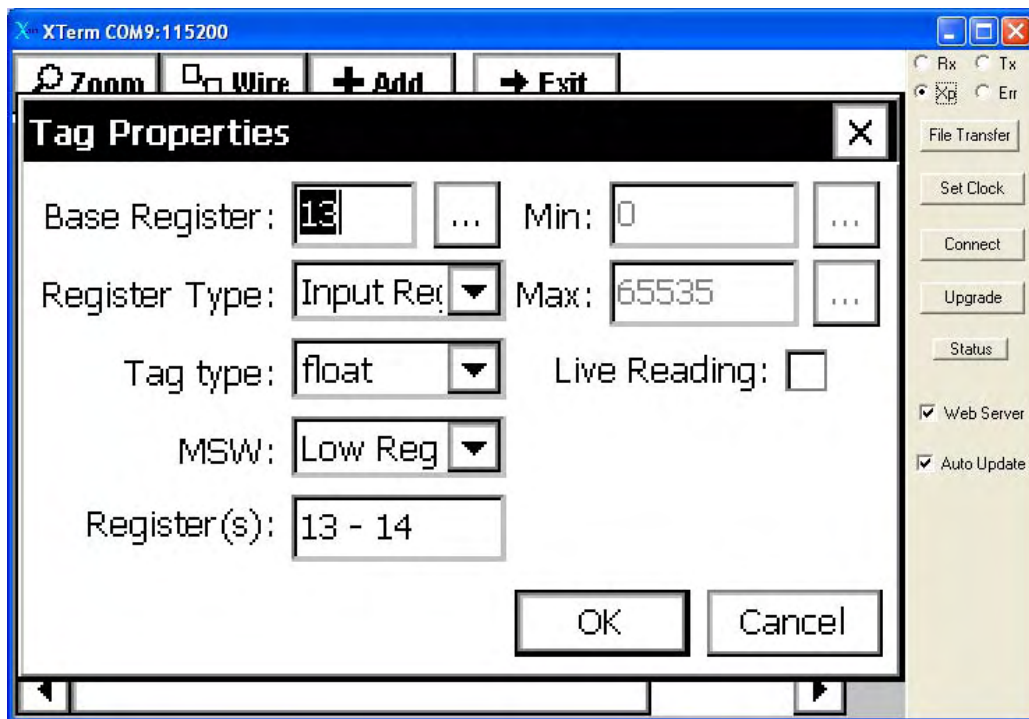


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USING A SERIAL RS232 MODBUS (ASCII) CONNECTION ON XLITE DATA LOGGERS

These are the AT/RH setup properties. Note this 9210 was set up with the following sensors:

- ▶ RAIN on digital in (2) as MODBUS address 30001 and 30002,
- ▶ DailyRAIN as MODBUS address 30003 and 30004,
- ▶ Battery as MODBUS address 30005 and 30006,
- ▶ WS on digital ch (3) as MODBUS address 30007 to 30008,
- ▶ WD on analog ch (3) as MODBUS address 30009 to 30010,
- ▶ AT on analog ch 7 as MODBUS address 30011 to 30012,
- ▶ RH on analog ch 8 as MODBUS address 30013 to 30014.

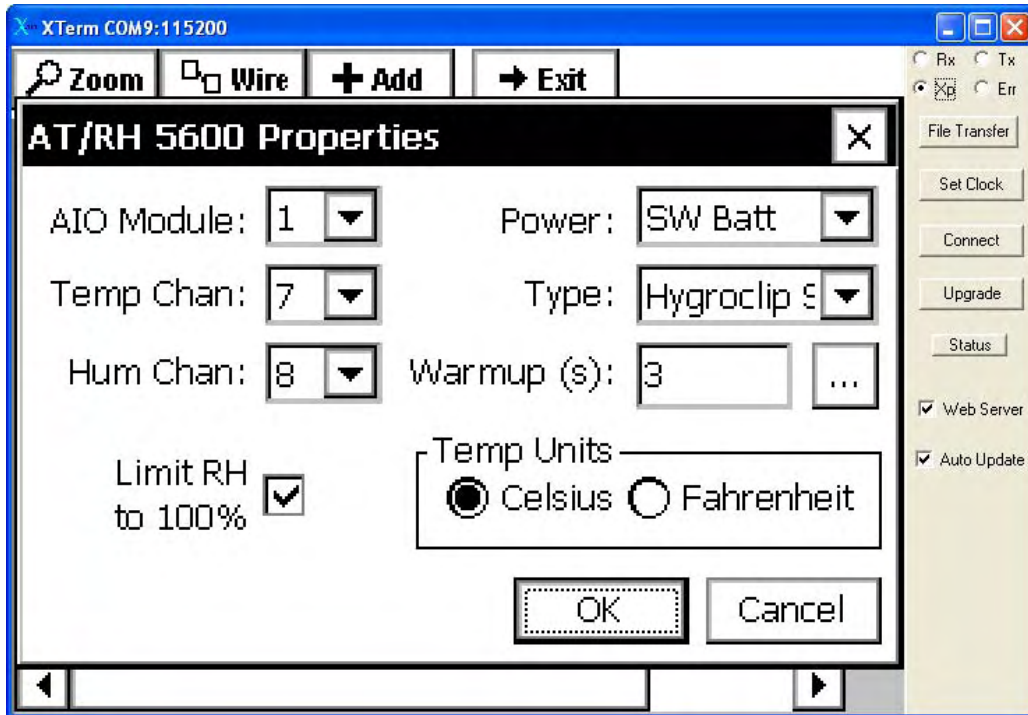




# APPLICATION NOTE

USING A SERIAL RS232 MODBUS (ASCII) CONNECTION ON XLITE DATA LOGGERS

- ▶ This is the screen you should have for the RH sensor. Also shown below.





# APPLICATION NOTE

## USING A SERIAL RS232 MODBUS (ASCII) CONNECTION ON XLITE DATA LOGGERS

- ▶ This is the screen for the MODBUS SCAN connection. This was set for COM1, 9600, 7,E,1 using ASCII serial data.
- ▶ **Note:** RAIN as 30001, DailyRAIN as 30003, Battery as 30005, WS 30007 was not connected, WD 30009 was floating on the 9210 input connector so read as 360 degrees, AT as 30011 was 23 degrees C and finally RH as 30013 was 39 percent humidity.
- ▶ All other operations as normal for further communications.

