

## Accuracy Testing MAXsys Elite Meter

The accuracy testing for the Elite meter is done through the transmit “LED” of the optical port on the face of the meter. The optical port is located on the lower left hand side of the meter face and the left “LED” is the transmit LED and is located on the left side of the port. The LED has 9 modes of operation. Optical communications (type 7 protocol), Watt hour, Var hour, Compensated Watt hours Comp. 1, Compensated Var hours Comp. 1, Compensated Watt hours Comp. 2, Compensated Var hours Comp. 2, Compensated Watt hours Comp. 3 and Compensated Var hours Comp. 3. The modes can be changed using MAXcom under the test mode screen. The meter does not need to be put into test mode to change the LED modes. The mode of operation can be seen on the meter display using the menu system. The user would enter the menu system using the buttons (E) on the face of the meter. They would then select “communications” from the list of menu items. This will take the user to a sub menu where they can select the optical port. To select the optical port the user will select the “more ports” option that will bring up another menu with “optical port”. After selecting “optical port” the screen will display the “Cal Pulse” mode .

When testing for meter accuracy it is recommended that no test should be run for less than 30 seconds. The 30 second test is recommended to reduce timing errors between the test equipment and the meter. The following examples are for a Form9S, 120 volt meter with a Kh of 1.0 being tested a rated voltage and a test current of 2.5 and 0.25 amps.

Full Load	10 Rev.	40 seconds
Power Factor	05 Rev.	40 seconds
Light Load	02 Rev.	80 seconds

When testing TLC accuracy the values meter is normally tested at the rated secondary value of the instrument transformer.

The following examples are for a Form 9S, 120 volt meter with a Kh of 1.0 that is connect to instrument transformers, VTR=7200:120 and CTR=1200:5. The tests are normally run at rate voltage (120 volts) and a test current of % and 0.5 amps.

Full Load	20 Rev.	40 seconds
Power Factor	10 Rev.	40 seconds
Light Load	04 Rev.	80 seconds

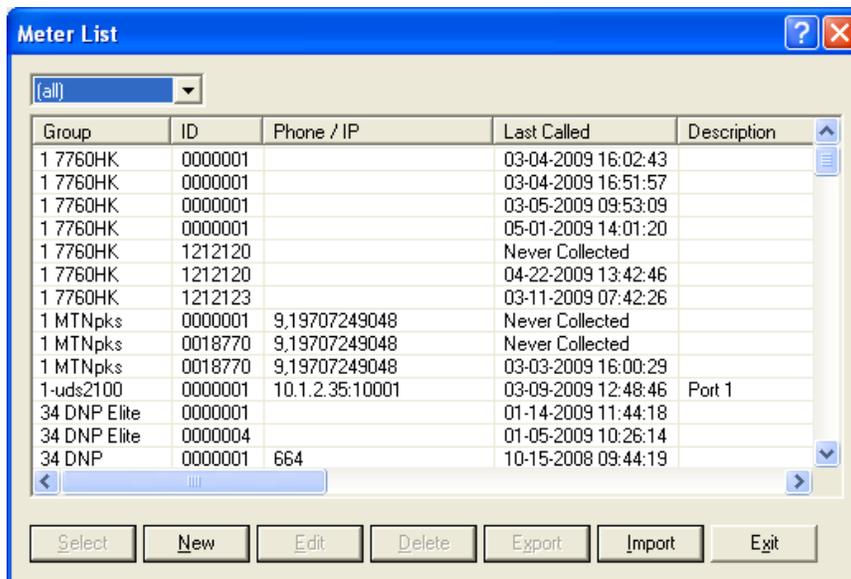
## TEST MODE

When the meter is placed into test mode the meter will stop incrementing all of the register this includes Energy, demand and instantaneous values. The output relays will be turned off and the data recorder will not record data while the meter is in test mode. Only values from table 36 (test display) will be active. If the user includes any of the normal display items coming from table 3 (instantaneous/last demand values) and table 15 (energy and Max demands) the readings will be the values that the meter was reading at the time the meter was placed in test mode. There are two (2) ways to put the meter into test mode. The first (preferred) is to use the MAXcom software this will prevent you from accidentally doing a demand reset. The other method is to remove the cover and press and simultaneously hold the S1 Mode Select button on the lower left side of the DPM (display card) and then press and hold the demand reset button until the meter goes into test mode (Do Not press the demand reset first).

### Method 1

Using Maxcom Software:

1. Start-up the MAXcom software.
2. Switch to the “Data Collection Mode” within MAXcom.
3. Open the unit manager and select the meter from the meter list. If the meter is not in the list you will need to make new file.



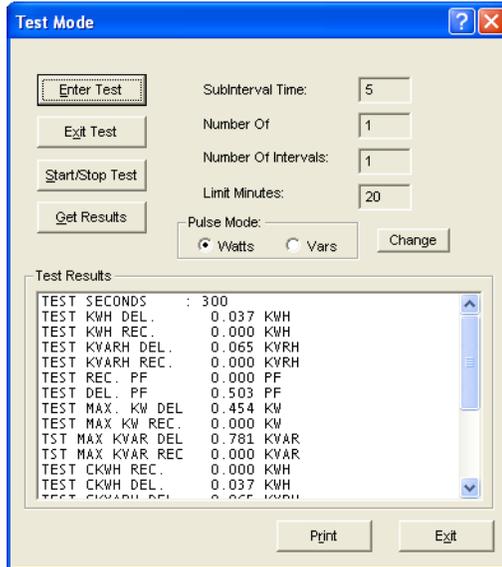
4. Connect your computer to the meter using one of the communications ports.
5. Select the “connect to meter” ICON.
6. After MAXcom connects to the meter the “Enter/Exit Test Mode” ICON will be enabled.
7. Click the Enter/Exit Test Mode ICON.

## Test Mode Screen

The screenshot shows a software window titled "Test Mode". It features a blue title bar with a help icon and a close button. The main interface is light beige and includes a vertical column of buttons on the left: "Enter Test" (highlighted with a dashed border), "Exit Test", "Start/Stop Test", and "Get Results". To the right of these buttons are four input fields: "SubInterval Time" (5), "Number Of" (1), "Number Of Intervals" (1), and "Limit Minutes" (20). Below these fields is a "Pulse Mode" section with two radio buttons, "Watts" (selected) and "Vars", and a "Change" button. At the bottom of the window is a large empty rectangular area labeled "Test Results". At the very bottom are two buttons: "Print" and "Exit".

8. The test “Subinterval Time” (length of demand subinterval), “Number OF Subintervals (number of subintervals per demand interval)”, “Number Of Intervals” (number of demand interval for test to run) and “Limit Minutes” (the amount of time the meter will remain in test mode without activity) the entrees cannot be changed after the meter has been programmed.
9. Have the meter out of service or take the meter out of service if you are not using the customer’s load for the test.
10. Click “Enter Test” to put the meter into test mode. Note: this will stop the meter from updating the active (billing) registers.
  - a. The display on the meter will indicate the meter has entered into test mode. Click “Start Test” in the software.
11. Set-up the test equipment and apply the test load.
12. Click “Start Test”
  - a. The test mode displays will appear on the face meter. If the test seconds is at the top of the list it can be seen counting up. Note: There will be no demand values until the test has completed or the test has been stopped by clicking “Stop Test”.
13. An alternate method for starting the test would be to power the meter down and the power the meter up. On power-up the meter will start the test. This method was provide so a number of meters (gang testing) could start there test at the same time.
14. When the test has been completed or stopped. The meter display will show “Test Mode Complete”. And you can read the results from the meter display or retrieve the results using MAXcom.

15. Click “Get Results



16. You can run another test by clicking “Start Test”.

- a. This will clear the old test data and the test will start.

17. When you have completed your testing.

- a. Remove the testing equipment.

18. Take the meter out of test mode by clicking “Exit” (The meter cannot be running a test when you try and exit test mode), always stop the test before exiting the test mode.

19. Place the meter back into service.

## Method 2

Using the buttons on the meter face:

1. Remove the meter from service.
2. Remove (break) the meter seal.\
3. Remove the meter cover.
4. To put the meter into test mode. The user will simultaneously press and hold the S1 Mode Select button on the lower left side of the DPM (display card) and then press and hold the demand reset button until the meter goes into test mode (Do Not press the demand reset first).
5. This will put the meter into test mode. Note: This will stop the meter from up-dating the active (billing) registers.
  - a. The display on the meter will indicate the meter has entered into test mode. Click “Start Test” in the software.
6. Set-up the test equipment and apply the test load.
7. Press the demand reset button on the face of the meter to start the test.
  - a. The test mode displays will appear on the face meter. If the test seconds is at the top of the list it can be seen counting up. Note: There will be no demand values until the test has completed or the test has been stopped by clicking “Stop Test”.

8. An alternate method for starting the test would be to power the meter down and the power the meter up. On power-up the meter will start the test. This method was provide so a number of meters (gang testing) could start there test at the same time.
9. When the test has been completed or stopped. The meter display will show “Test Mode Complete”. And you can read the results from the meter display by scrolling the list using the buttons on the face of the meter.
10. You can run another test be pressing the demand reset.
  - a. This will clear the old test data and the test will start.
11. When you have completed your testing.
  - a. Remove the testing equipment.
12. Take the meter out of test mode by simultaneously press and hold the S1 Mode Select button on the lower left side of the DPM (display card) and then press and hold the demand reset button until the meter comes out of test mode. The meter cannot be running a test when you try and exit test mode, always stop the test before exiting the test mode.
13. Place the meter back into service.