CHAR SYSTEM
OPERATION & TRAINING

Module 1
CHAR System Operation

OPERATING CHAR SYSTEM

At the conclusion of this section, students should be able to use AMS software to:

- Match the CHAR System with the controller computer
- Create, edit, clone, or rename an Equipment Identifier (EID)
- Perform a CHAR System calibration
- Perform a characterization acquisition

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CHAR SYSTEM OVERVIEW

Computer
- WinCharm Version 6
- Windows 10 OS

CHAR 2012 System
- WinCHARM-PXI-L60
- Windows 7 OS

80-Input Multiplexer
- Single Board RIO
- Real Time OS

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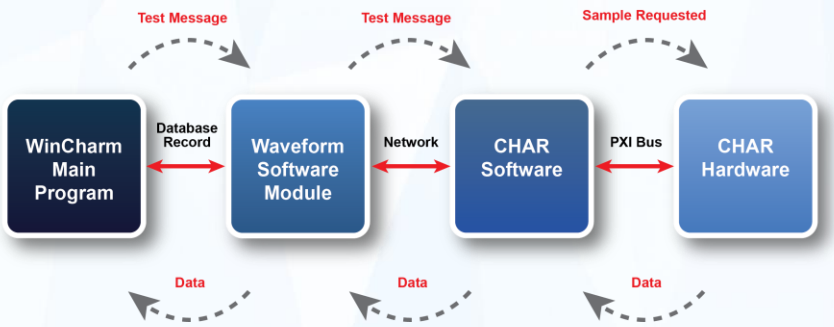
CHAR SYSTEM COMMUNICATION



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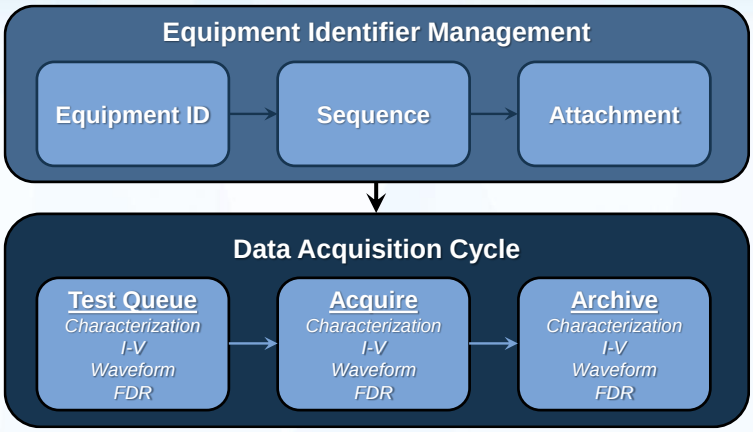
CHAR SYSTEM USER INTERFACE



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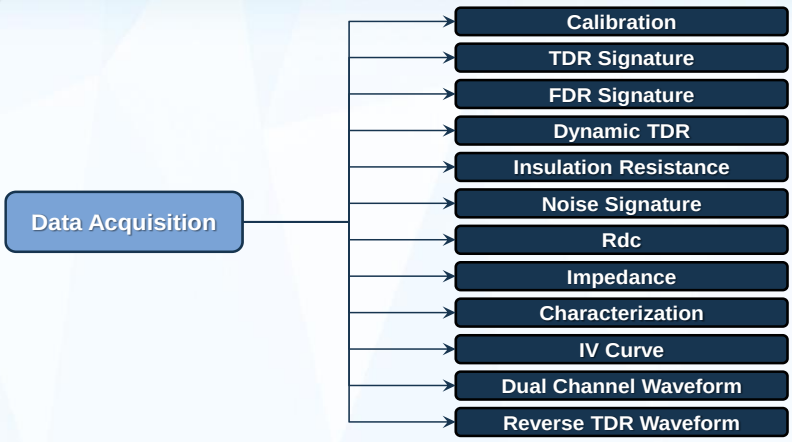
CHAR DATA ACQUISITION



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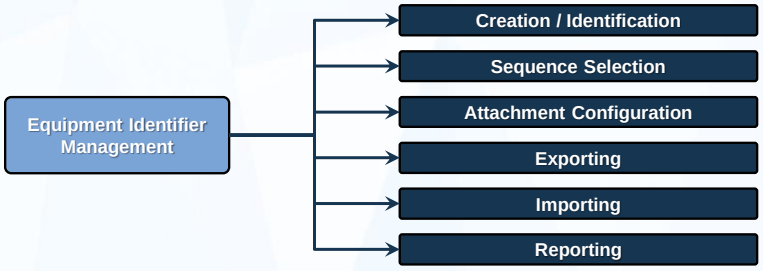
CHAR EID MANAGEMENT



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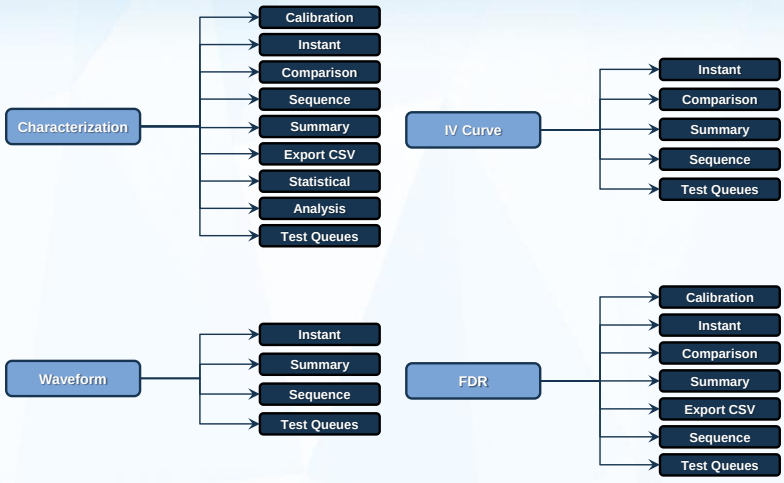
CHAR TEST REPORTS



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START THE WINCHARM SOFTWARE

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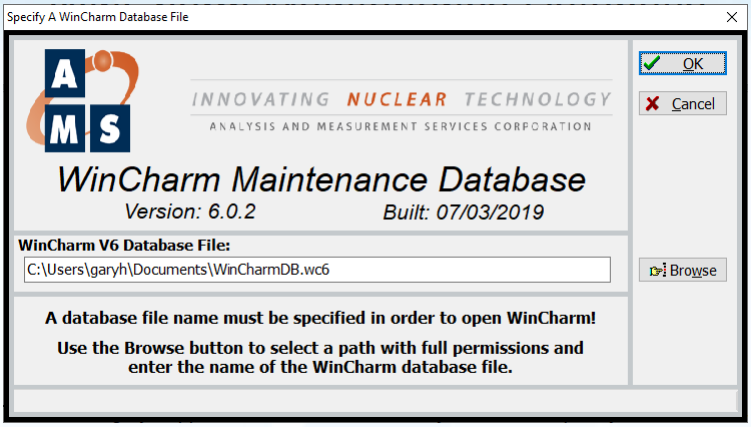
SPECIFY A WINCHARM DATABASE



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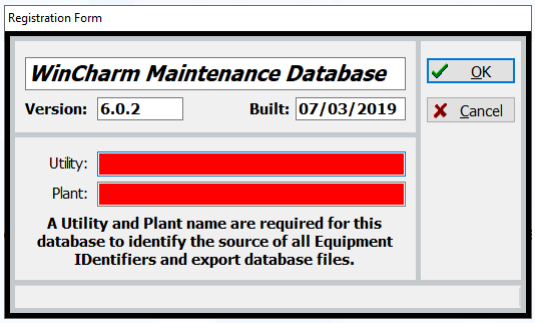
ENTER REGISTRATION INFORMATION



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Matching CHAR System to Controller Computer

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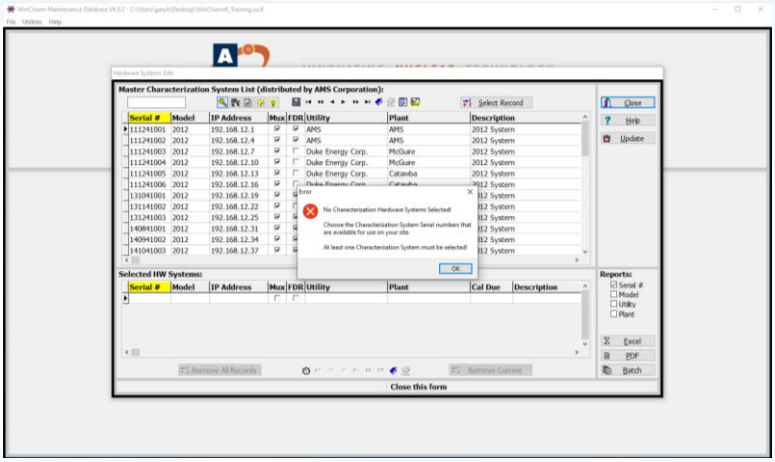
MATCHING CHAR SYSTEM

- If the WinCharm software has not been initially opened, the software will ask the user to select a system to use.



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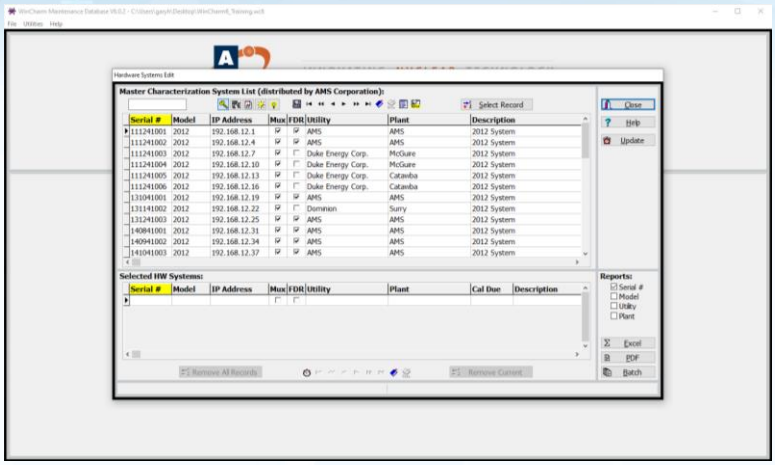
SELECT SYSTEM SERIAL NUMBER



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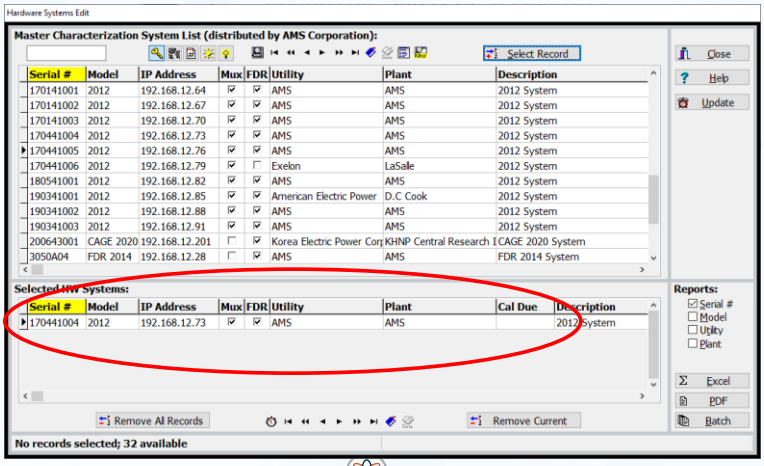
CHAR SYSTEM SELECT

- Select the desired system and verify it is populated in selected instruments. Click close.



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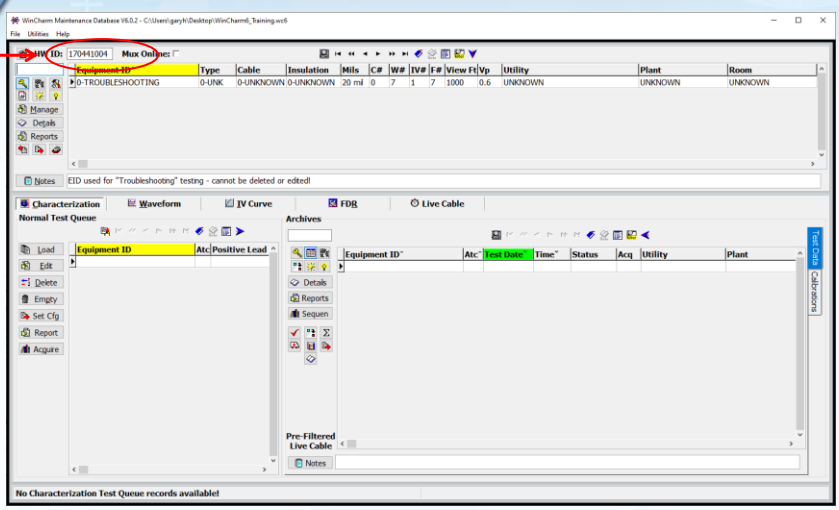
VERIFY THE SYSTEM SELECTED



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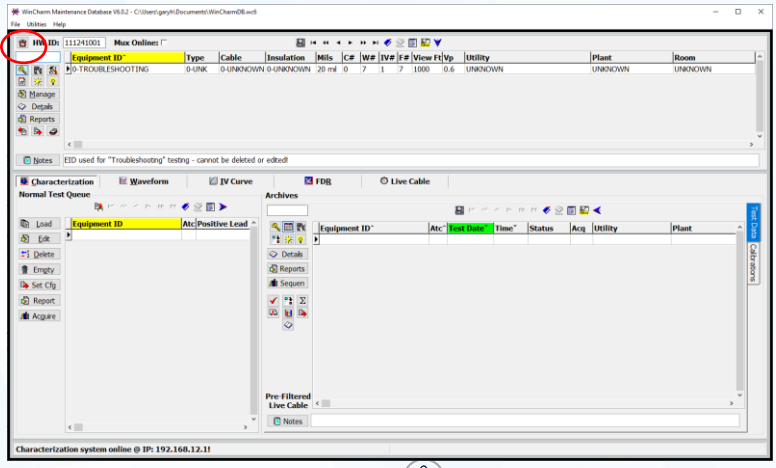
MATCHING CHAR SYSTEM

- Select the clock button to open the Environment Options Edit Form to change the system



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CREATING AN EQUIPMENT IDENTIFIER

- The Equipment Identifier (EID) is the highest level in the WinCharm database.
  - The Equipment Identifier contains test sequences and archived data for each of the four test types, Characterization, Waveform, IV Curve and FDR.

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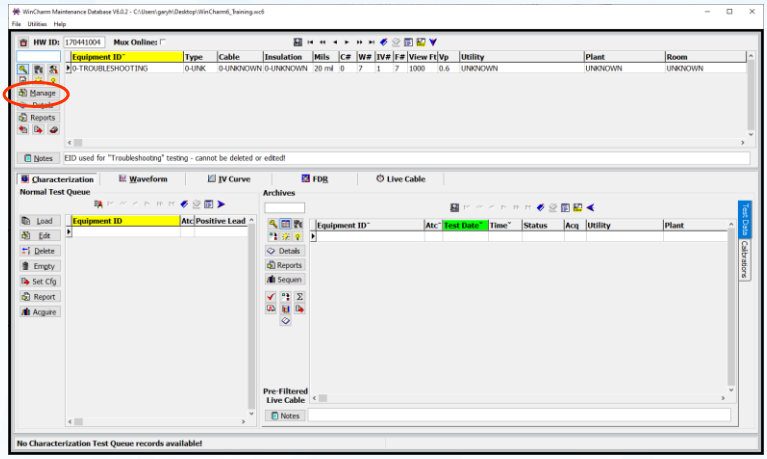
CREATING AN EQUIPMENT ID

TO BEGIN THE EQUIPMENT ID CREATION WIZARD, CLICK MANAGE



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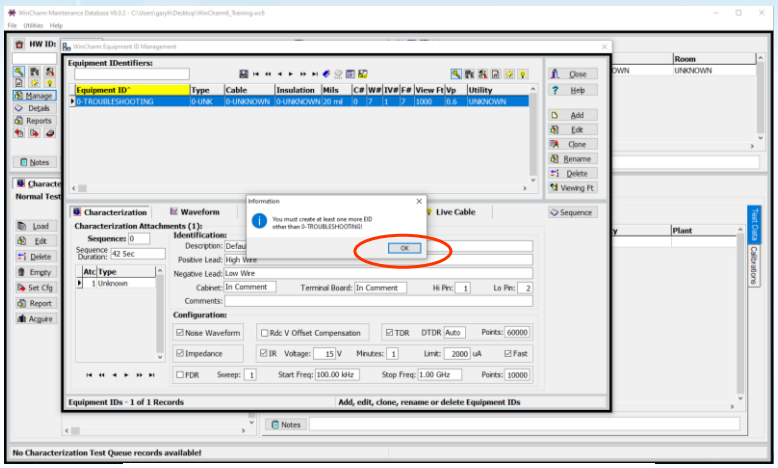
EID CREATION CONTINUED



CLICK <OK> TO ACKNOWLEDGE PROMPT

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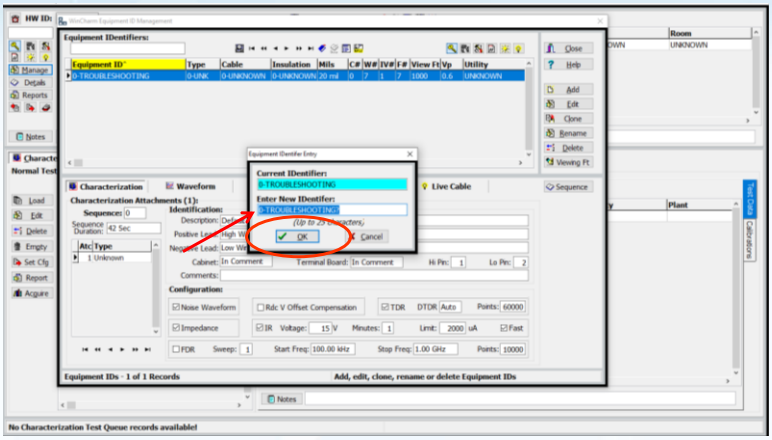
EID CREATION CONTINUED



ENTER THE NEW IDENTIFIER, CLICK <OK>

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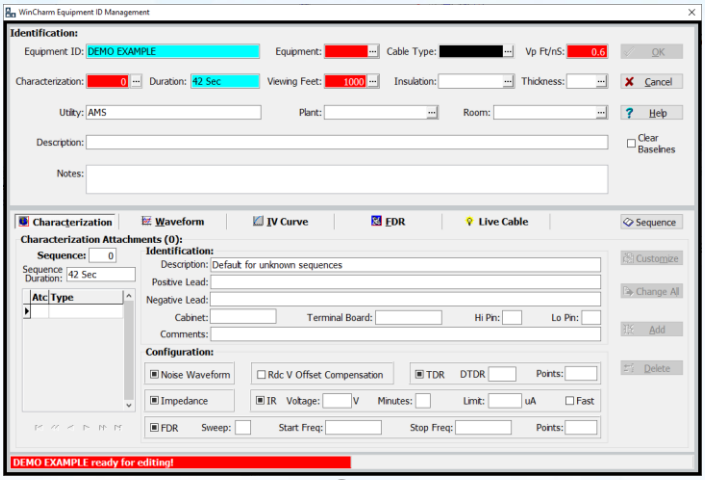
ENTER EQUIPMENT ID INFORMATION

ALL BOXES IN **RED** ***MUST*** BE FILLED IN



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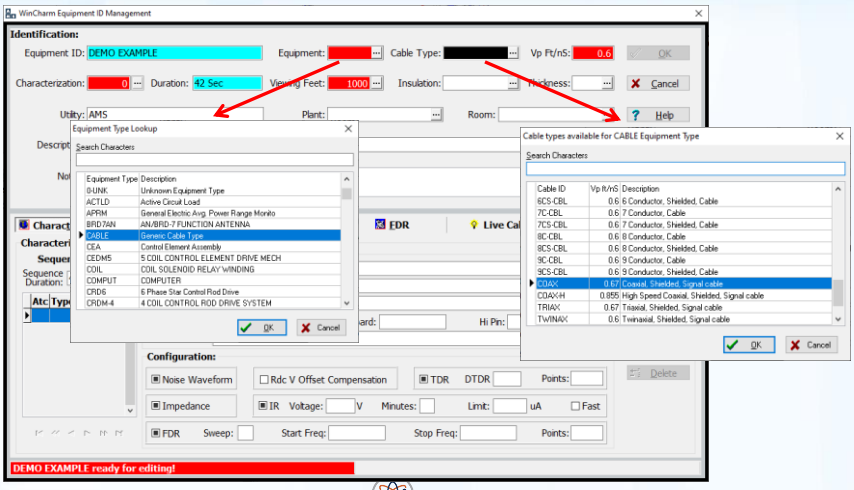
SELECT THE EQUIPMENT TYPE AND THE CABLE TYPE, CLICK ON DROP DOWN BOX



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TECHNICAL NOTE

The selection of the Equipment Type and Cable Type will automatically determine the Characterization Sequence that is applied to the newly created EID.

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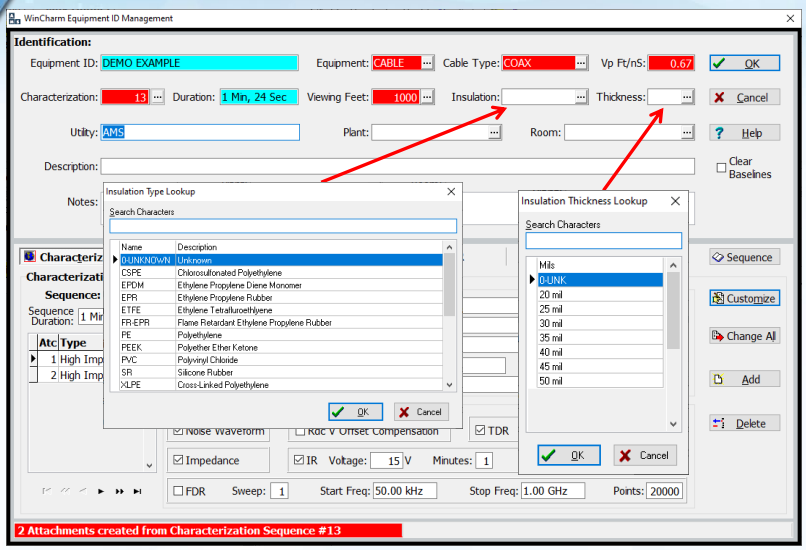
SELECT THE CABLE INSULATION TYPE AND THE CABLE THICKNESS, CLICK ON DROP DOWN BOX



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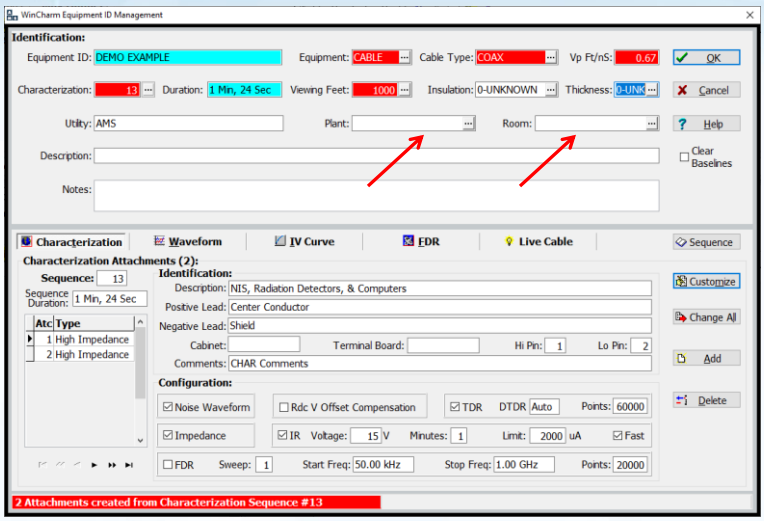
ENTER EQUIPMENT ID LOCATION INFORMATION



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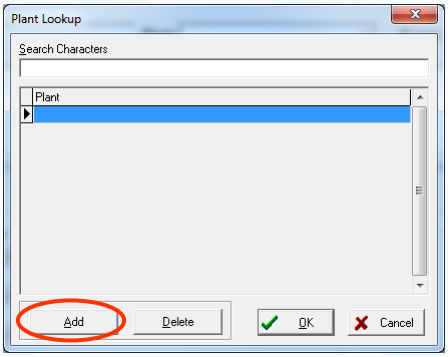
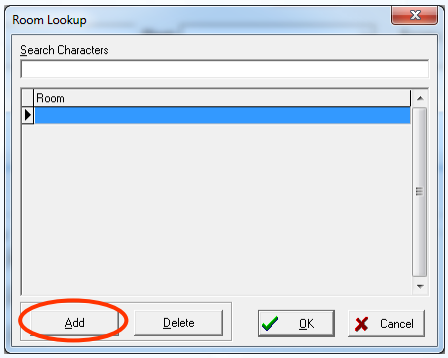
PLANT AND ROOM LOOKUP

CLICK <ADD> TO ADD PLANT NAME AND ROOM LOCATION





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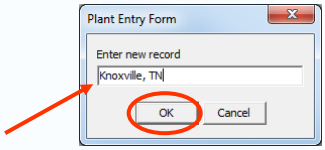
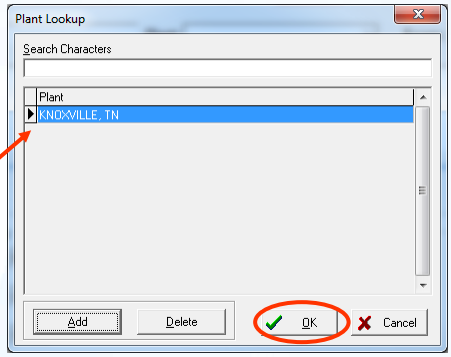
PLANT NAME





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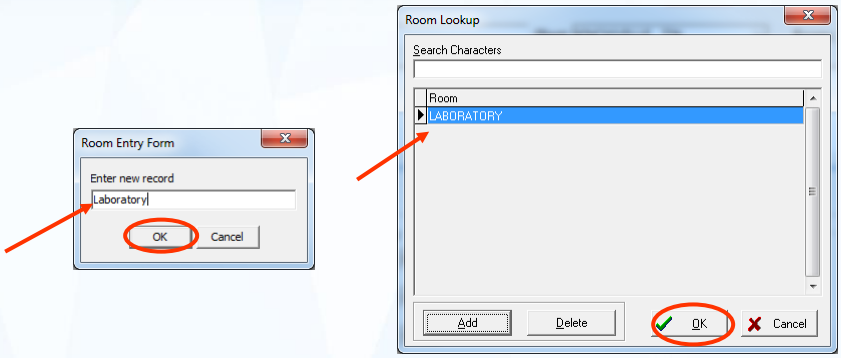
ROOM LOCATION



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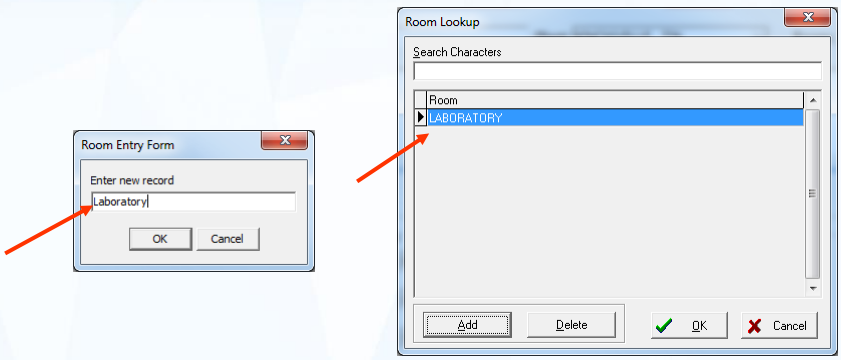
LOCATION INFORMATION COMPLETE



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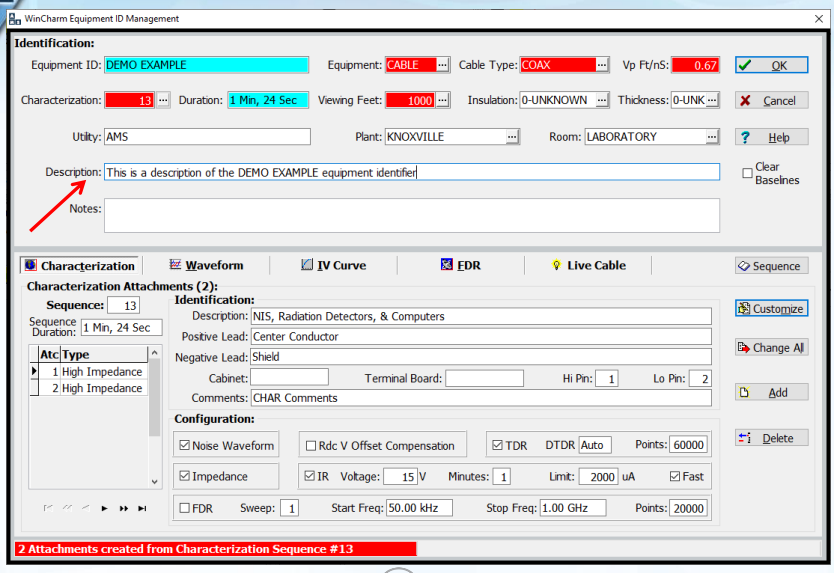
Slide 30 of 106

ADD DESCRIPTION



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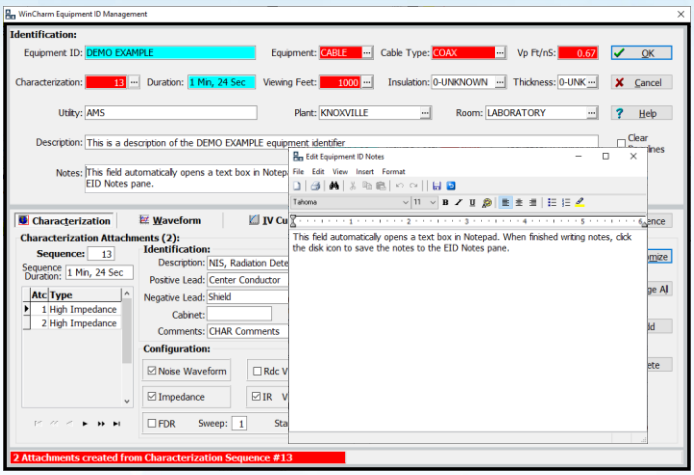
ADD NOTES

Start typing in Notes box to open Notepad. When finished with Notes, click the disk icon or press CTRL+S on keyboard



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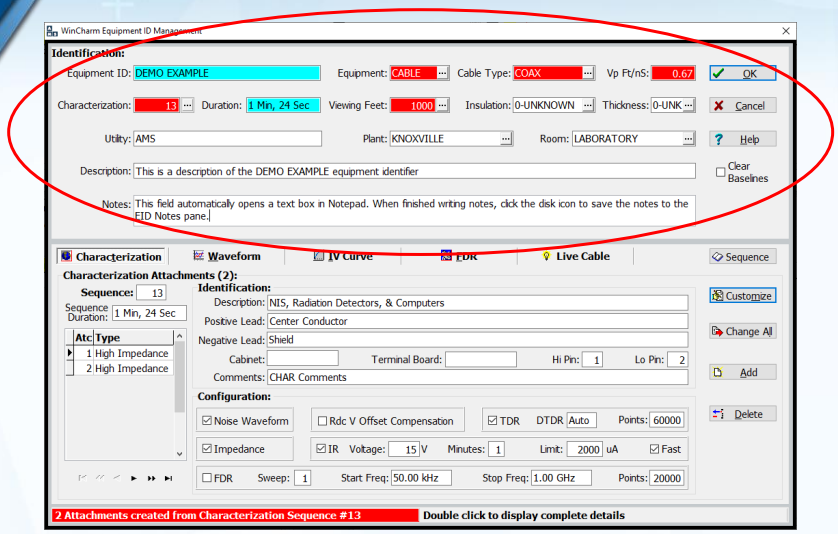
ALL INFORMATION ENTERED



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REVIEW THE TEST SPECIFIED FOR THE EID

- CHAR software will specify a test SEQUENCE.
  - A list of ATTACHMENTS defining how the CHAR System will be connected to the EUT (equipment under test).

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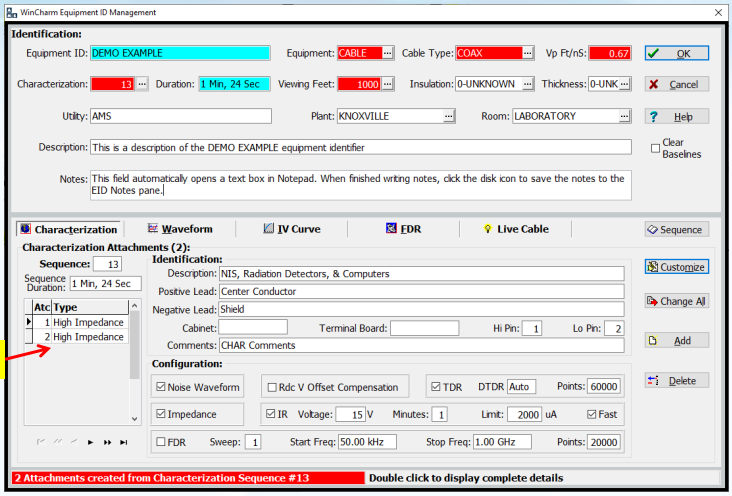
REVIEW LIST OF ATTACHMENTS



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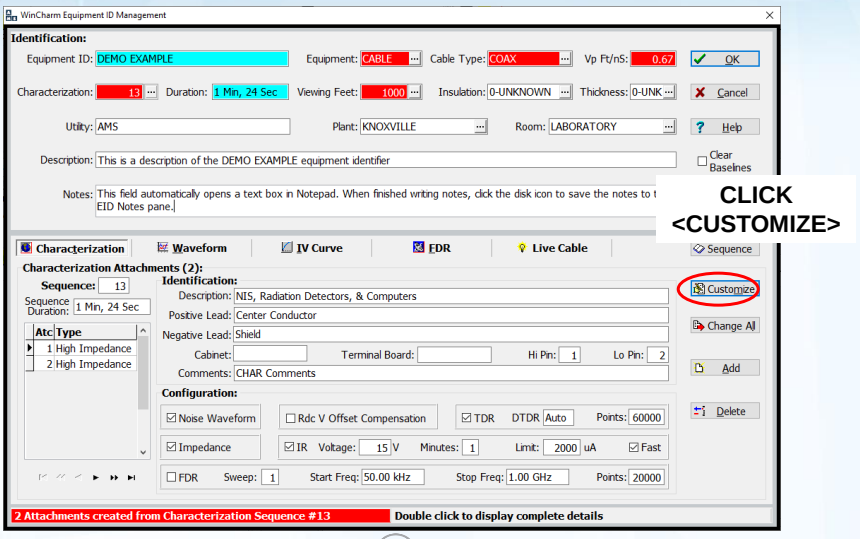
OPTION TO EDIT EACH ATTACHMENT



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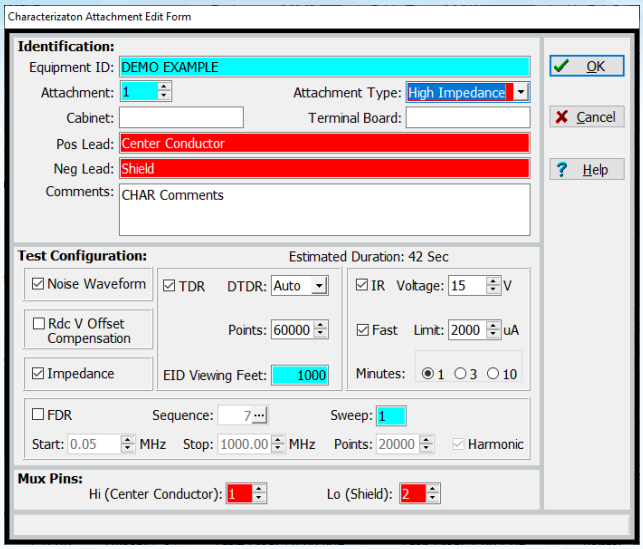
EDIT THE ATTACHMENT



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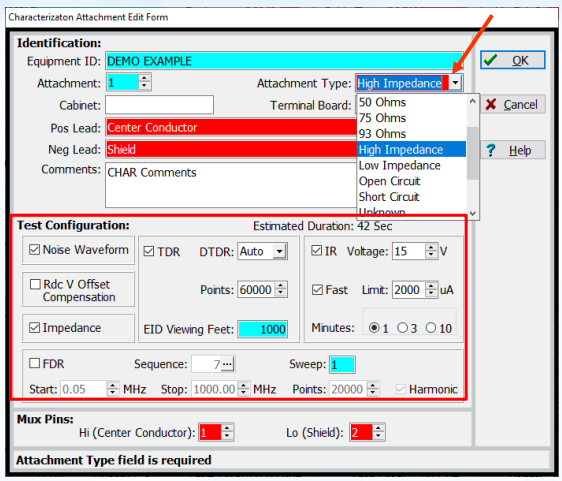
MODIFY CIRCUIT PARAMETERS AND TEST CONFIGURATION



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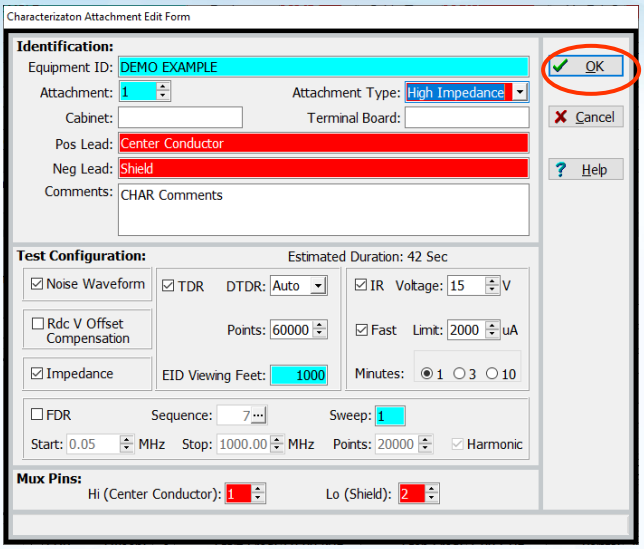
EDITING COMPLETE CLICK <OK>



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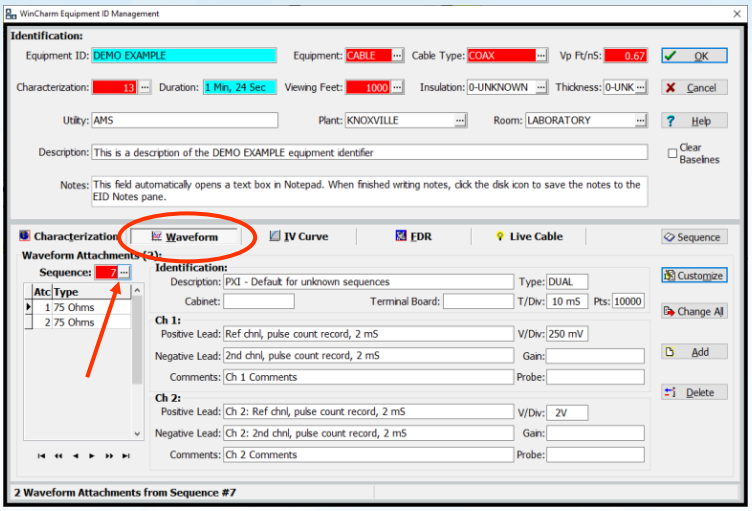
CLICK Waveform tab TO DISPLAY WAVEFORM SEQUENCE LOOKUP TABLE



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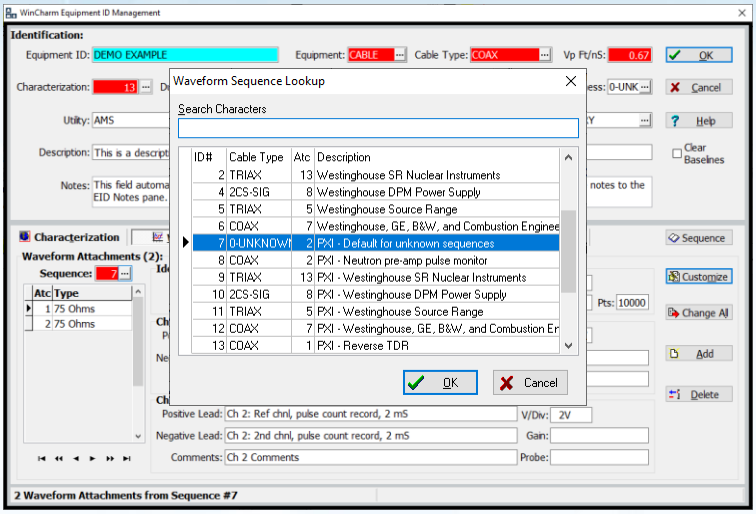
SELECT THE APPROPRIATE SEQUENCE <OK>



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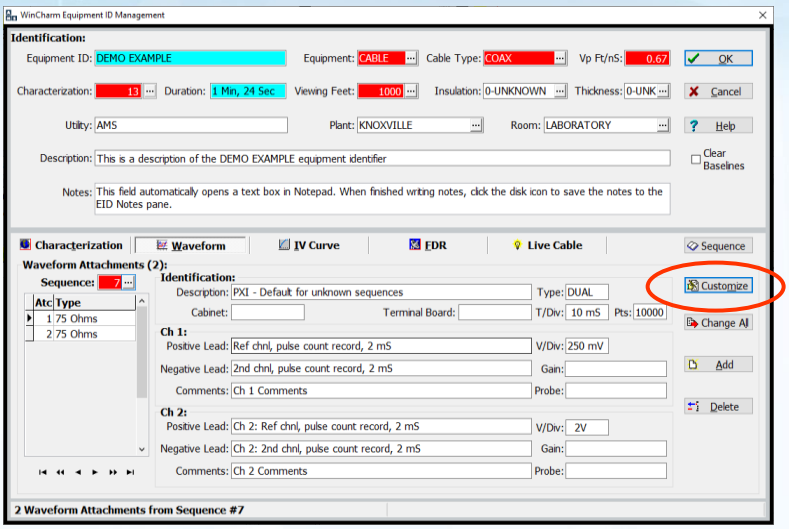
OPTION TO EDIT THE ATTACHMENTS



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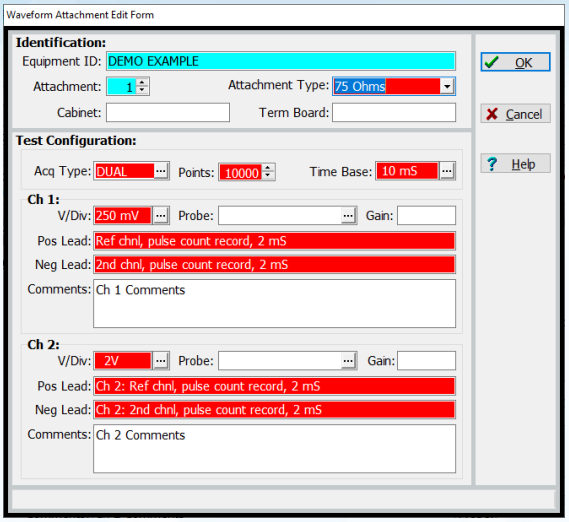
WAVEFORM ATTACHMENT EDIT FORM



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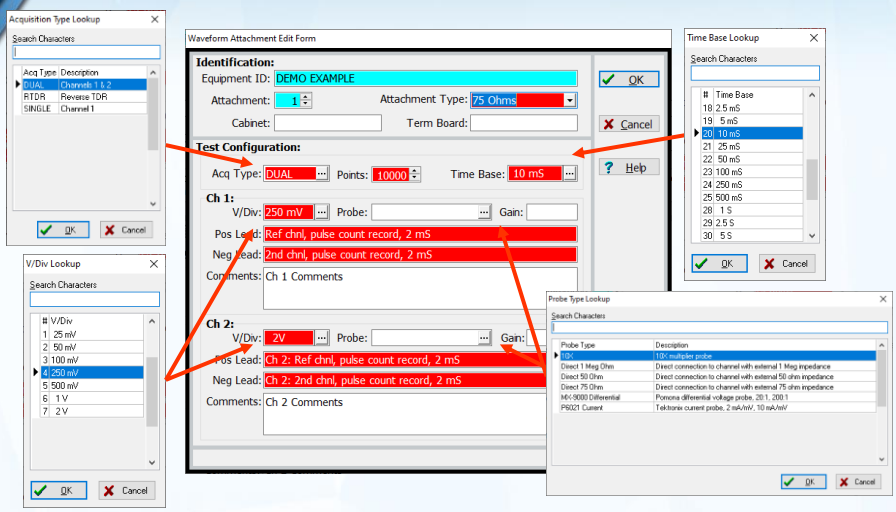
CLICK DROP DOWN BOX TO MODIFY PARAMETERS, VOLT/DIV, TIME BASE



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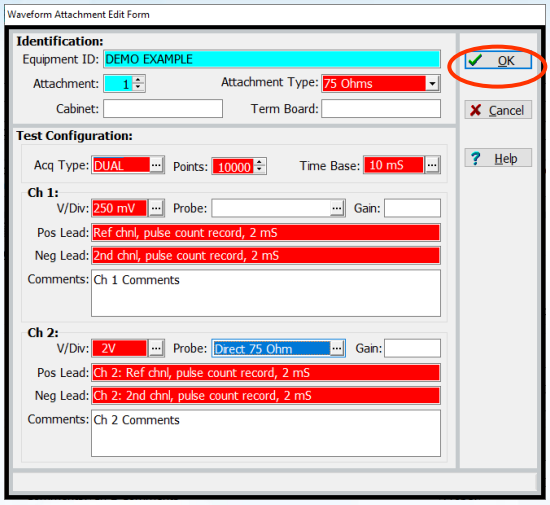
ATTACHMENT FIELDS UPDATED CLICK <OK>



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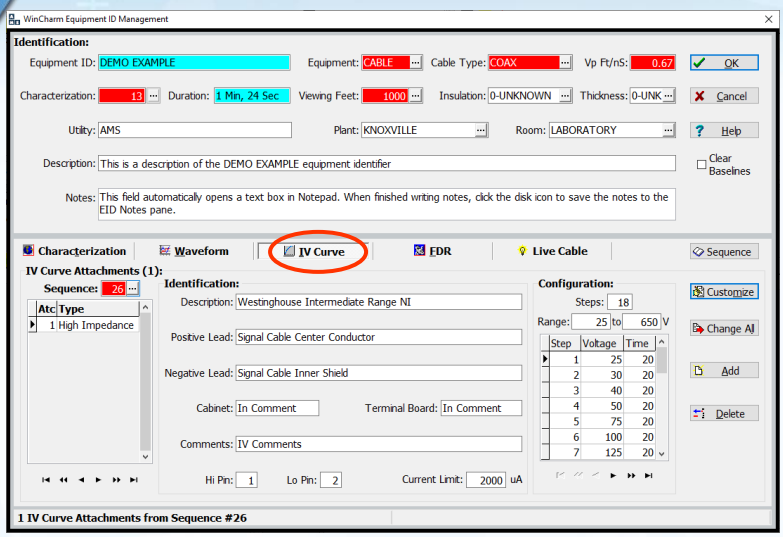
CLICK IV CURVE TAB TO DISPLAY IV CURVE SEQUENCE LOOKUP TABLE



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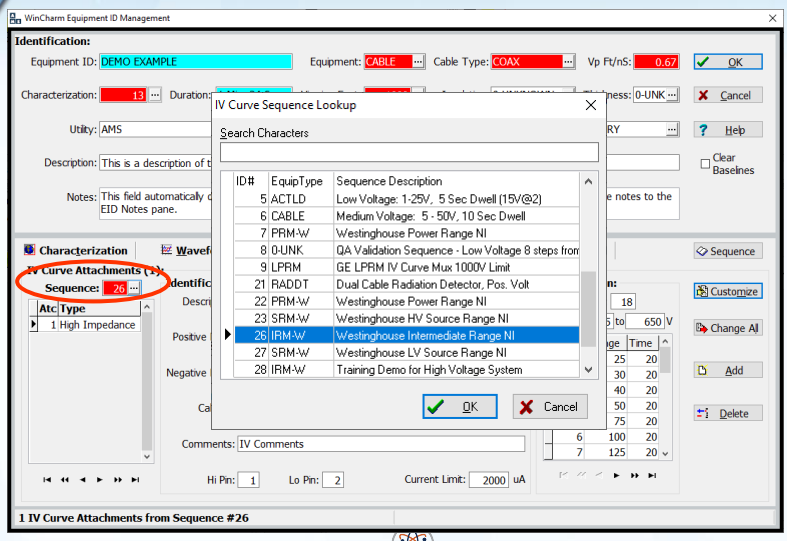
SELECT SEQUENCE CLICK <OK>



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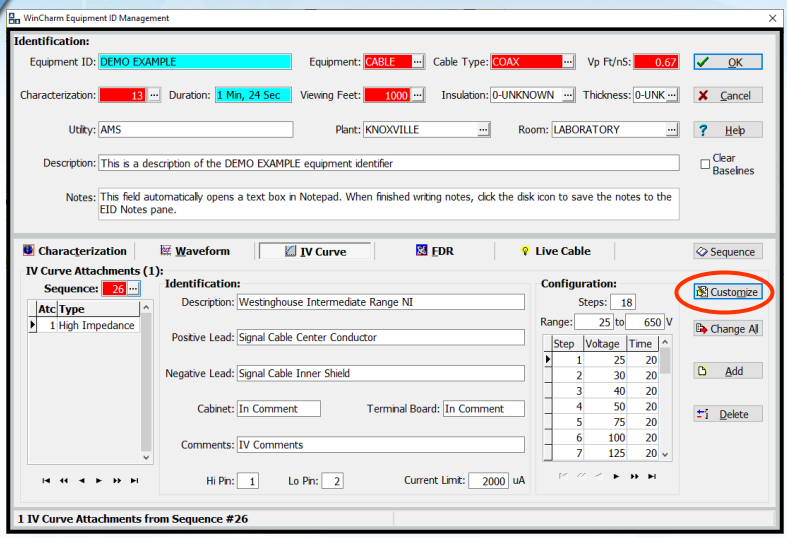
OPTION TO EDIT THE ATTACHMENTS



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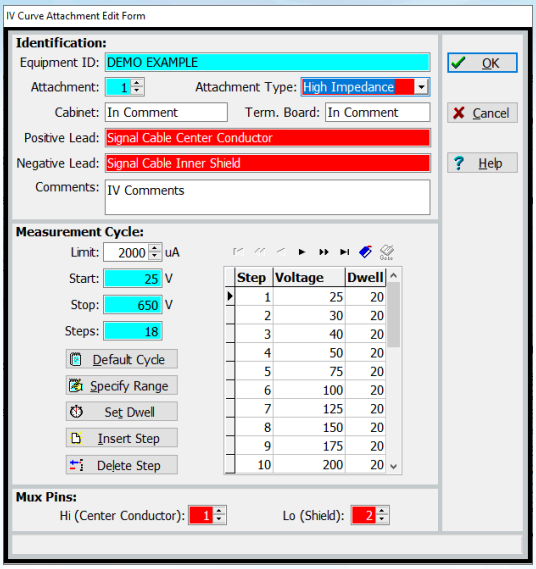
IV CURVE ATTACHMENT EDIT FORM



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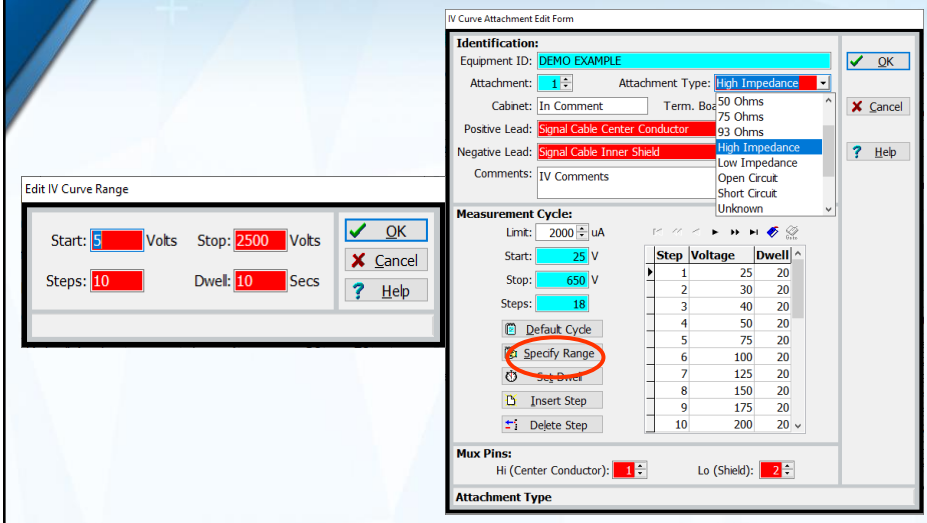
CLICK DROP DOWN BOX TO MODIFY PARAMETERS AND SPECIFY RANGE



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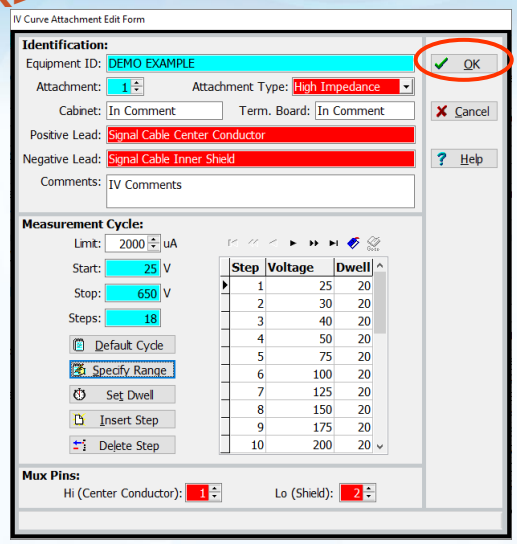
ATTACHMENT FIELDS UPDATED CLICK <OK>



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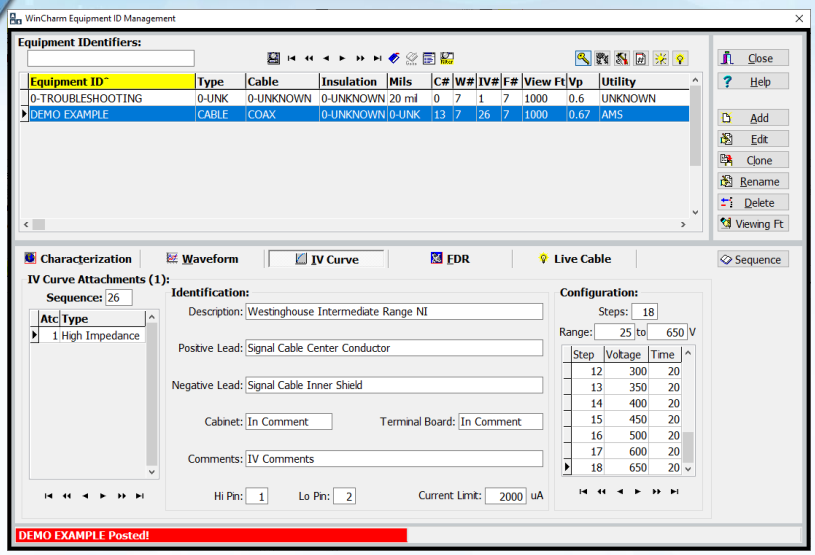
VERIFY ALL CHANGES MADE FOR EACH TEST TAB AND CLICK <CLOSE>



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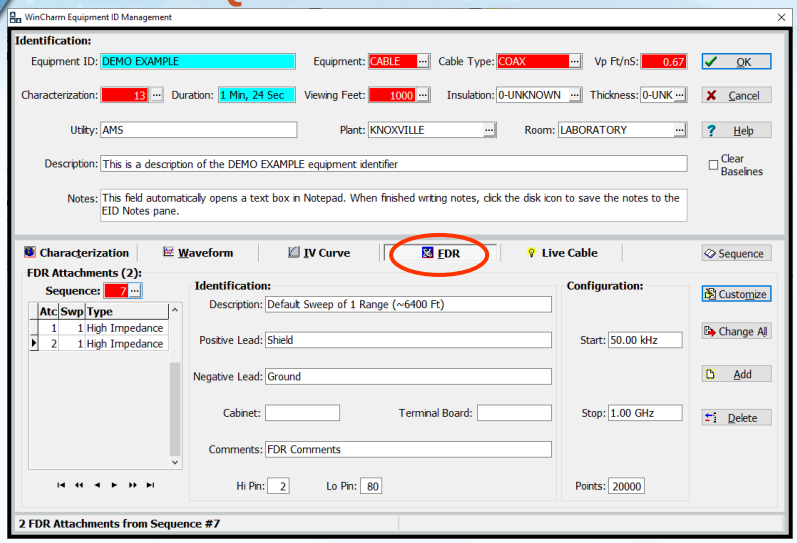
CLICK FDR TAB TO DISPLAY FDR SEQUENCE LOOKUP TABLE



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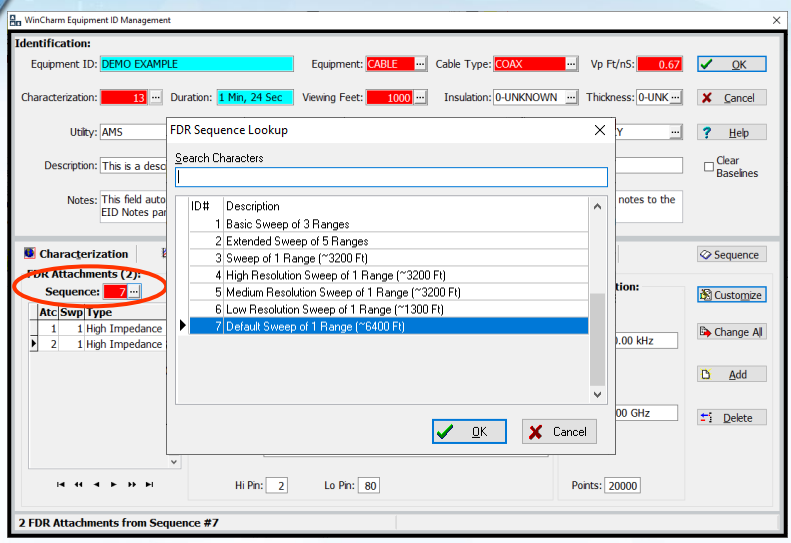
SELECT SEQUENCE CLICK <OK>



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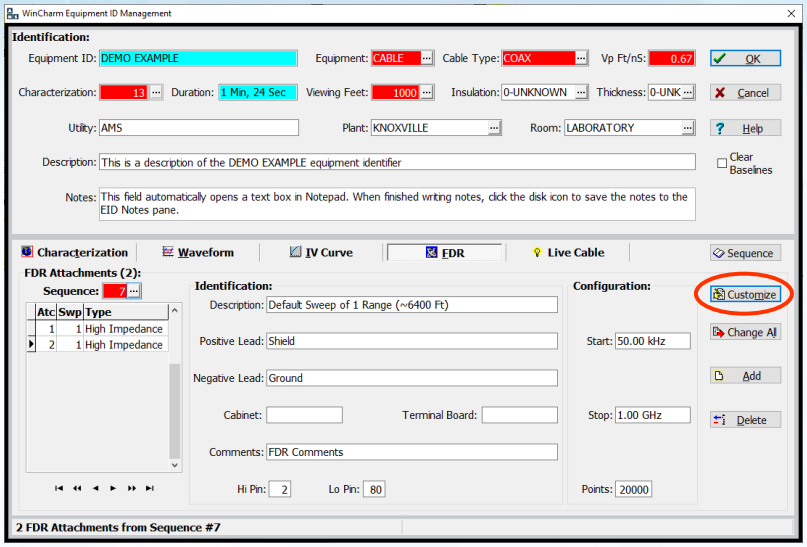
OPTION TO EDIT THE ATTACHMENTS



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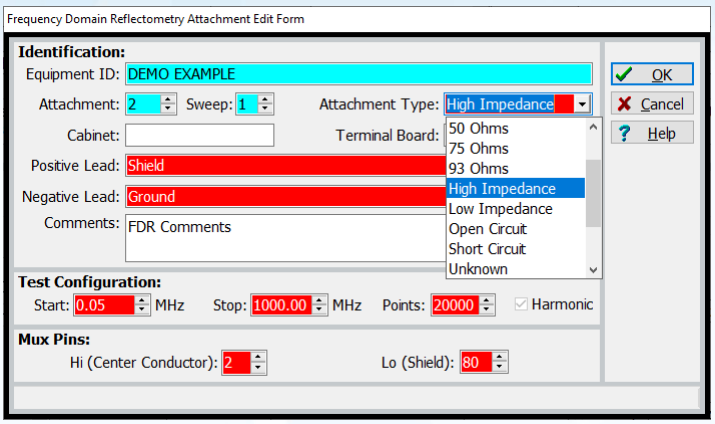
FDR ATTACHMENT EDIT FORM



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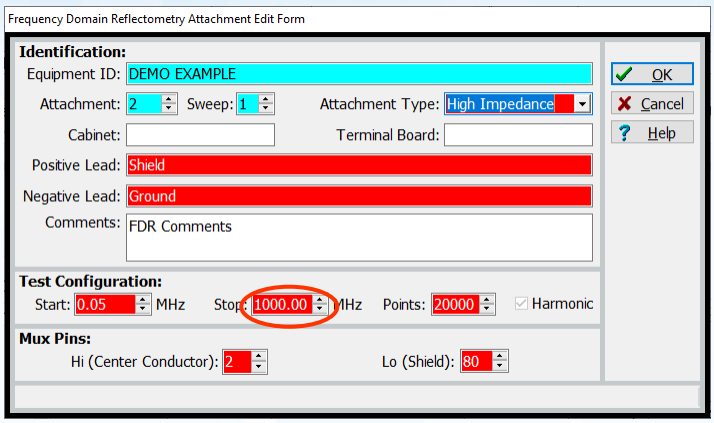
CLICK DIALS TO SPECIFY START AND STOP FREQUENCIES



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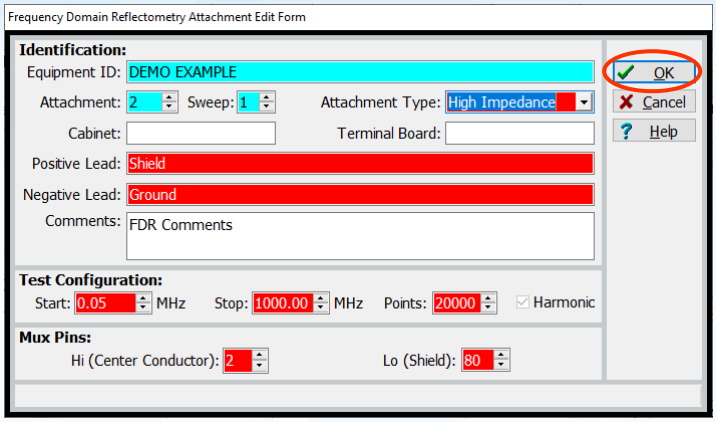
ATTACHMENT FIELDS UPDATED CLICK <OK>



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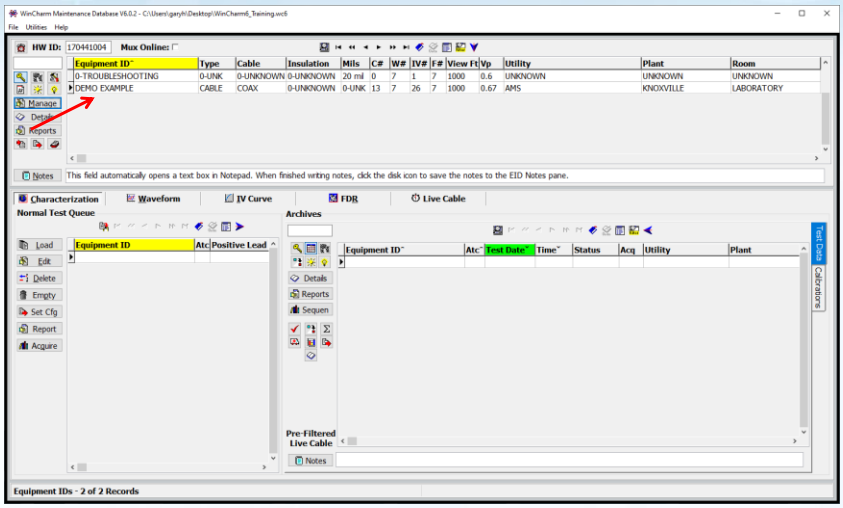
THE NEW EID IS ABLE TO BE VIEWED AND MANIPULATED



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CLONING OPTION

Cloning is used to create another EID using the same equipment type and cables.

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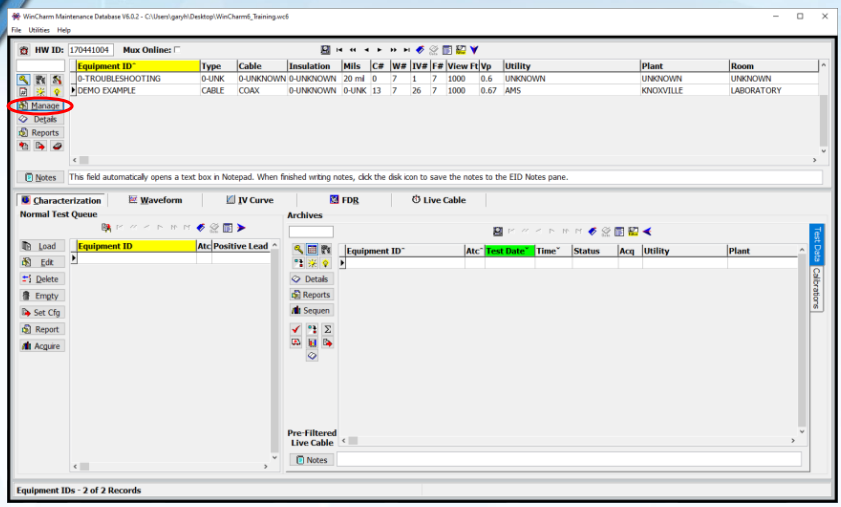
SELECT MANAGE… TAB TO CLONE AN EID



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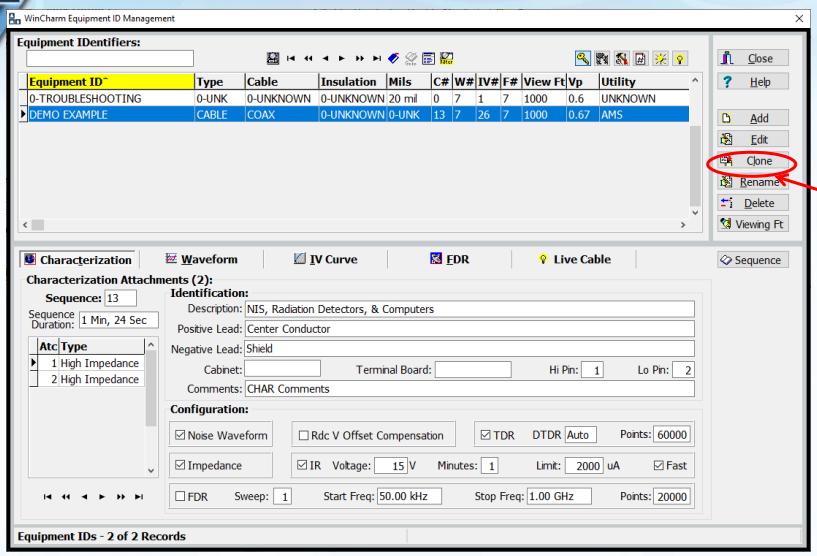
SELECT EID TO CLONE CLICK <CLONE>



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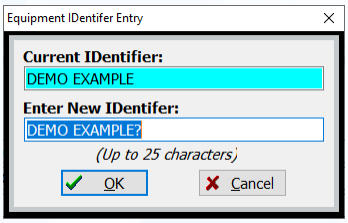
EDIT EQUIPMENT ID NAME CLICK <OK>



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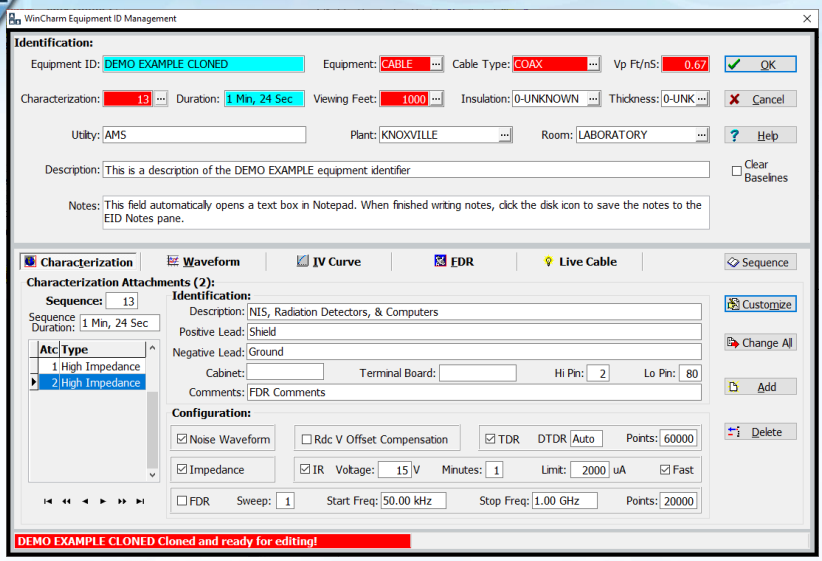
EQUIPMENT ID CLONED CLICK <OK>



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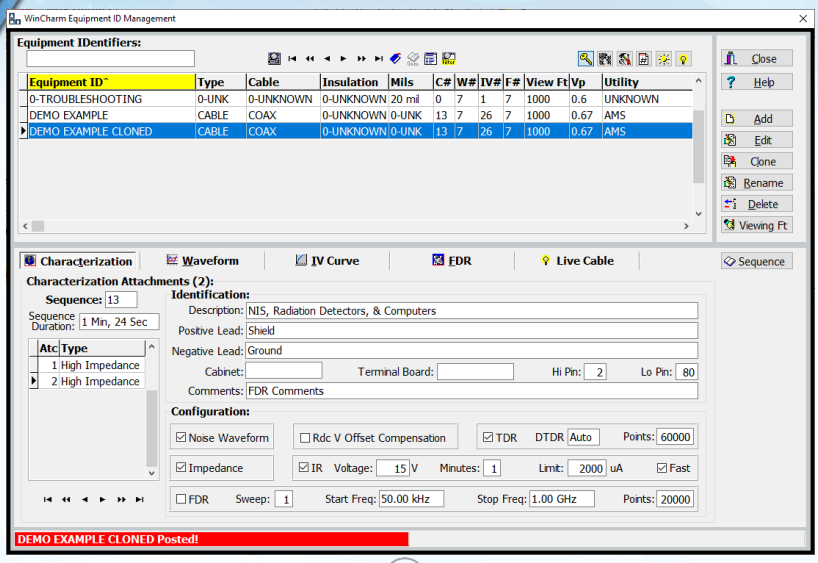
CLONED EQUIPMENT ID CREATED



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WinCharm ACQUISITION

LOADING THE TEST QUEUE TO PERFORM A CHARACTERIZATION TEST

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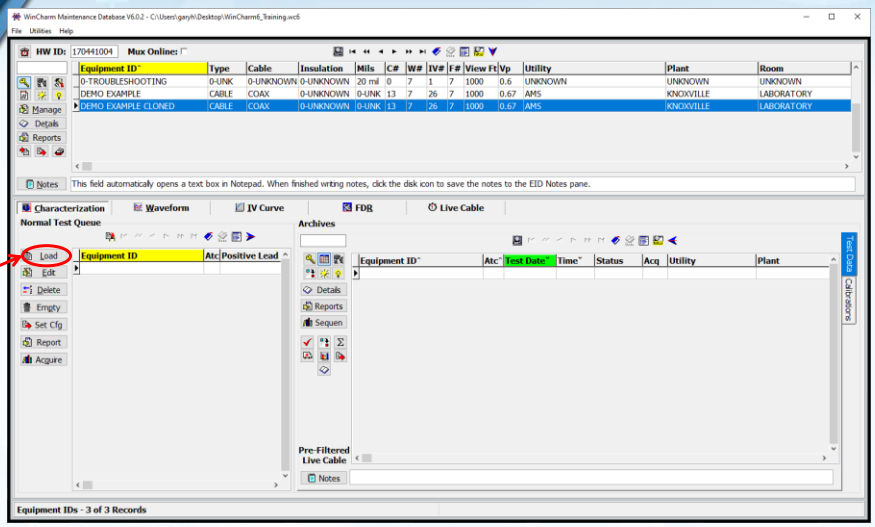
SELECT THE <CHARACTERIZATION> TAB, THEN CLICK <LOAD>



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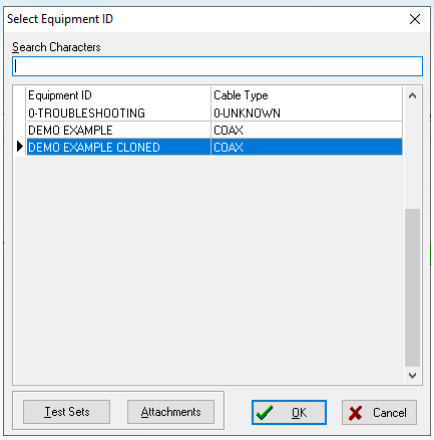
SELECT EQUIPMENT ID CLICK <OK>



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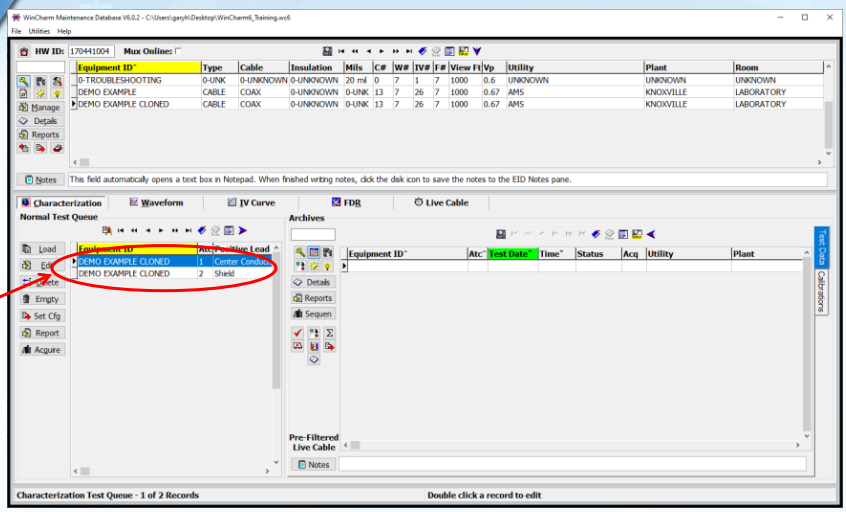
EID ATTACHMENTS WILL BE LOADED INTO THE TEST QUEUE



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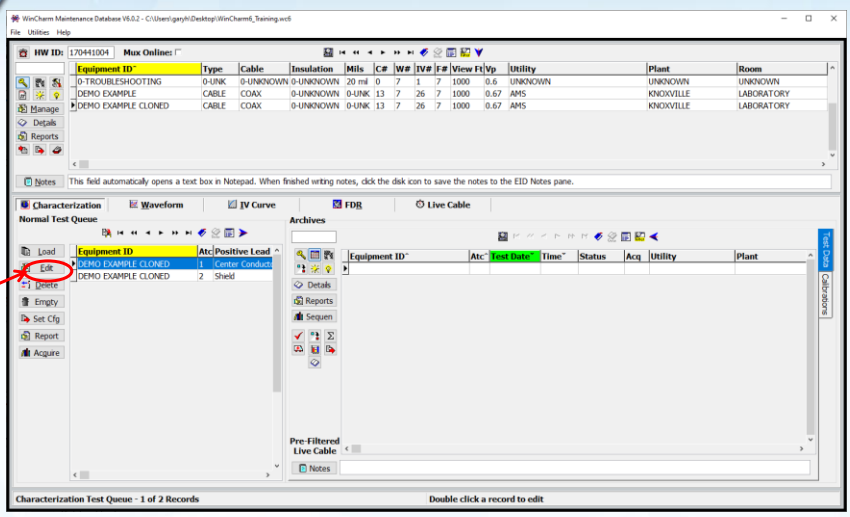
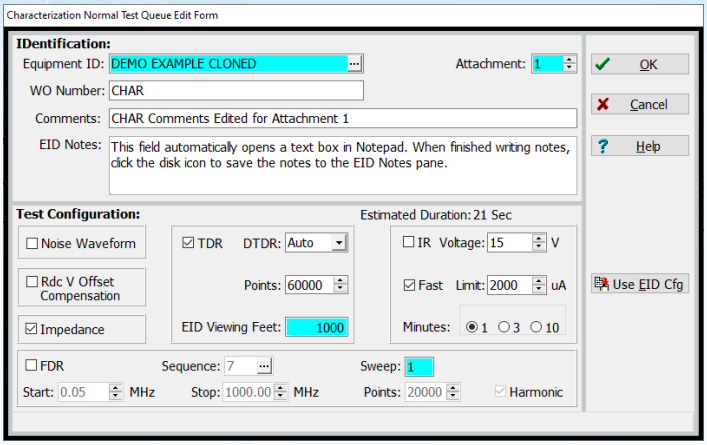
YOU CAN EDIT THE ATTACHMENTS; CLICK <EDIT>



Proprietary / Duplication Prohibited / Copyright 2022 by AMS Corporation

TEST QUEUE EDIT FORM



Comments edited & Noise Waveform (V) and IR unchecked.

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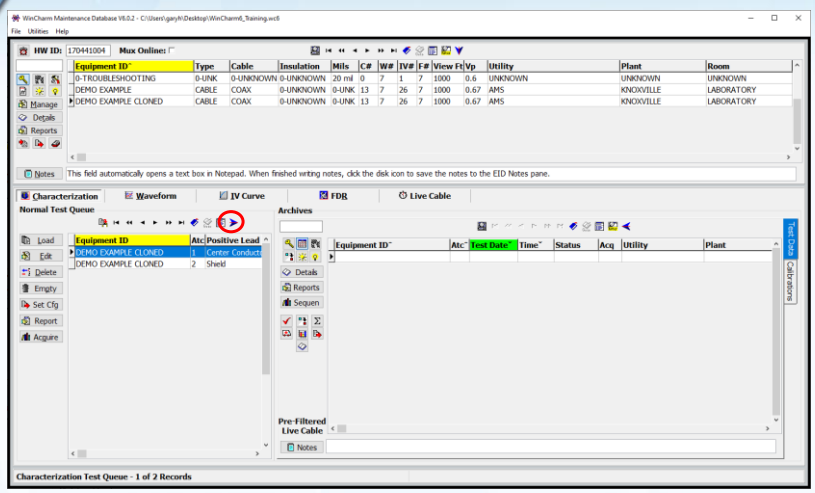
EXPAND TEST QUEUE WINDOW



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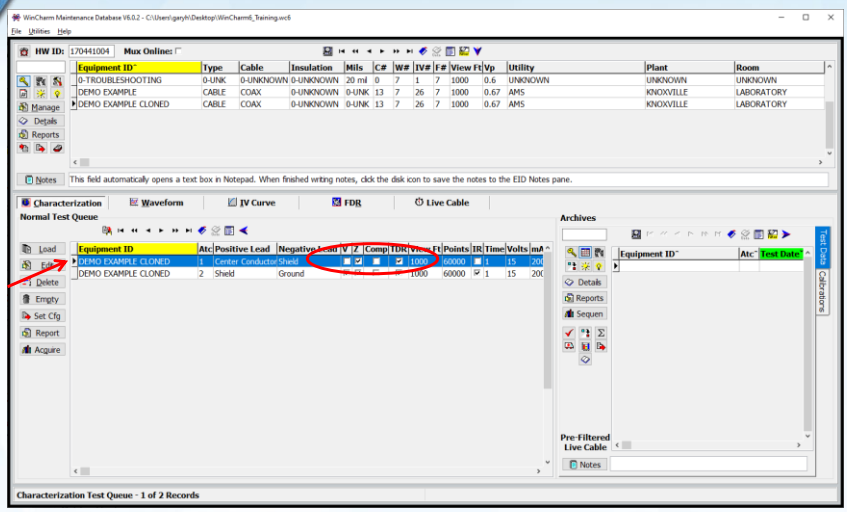
CHANGES ARE APPLIED TO ONLY THE ATTACHMENT YOU SELECTED



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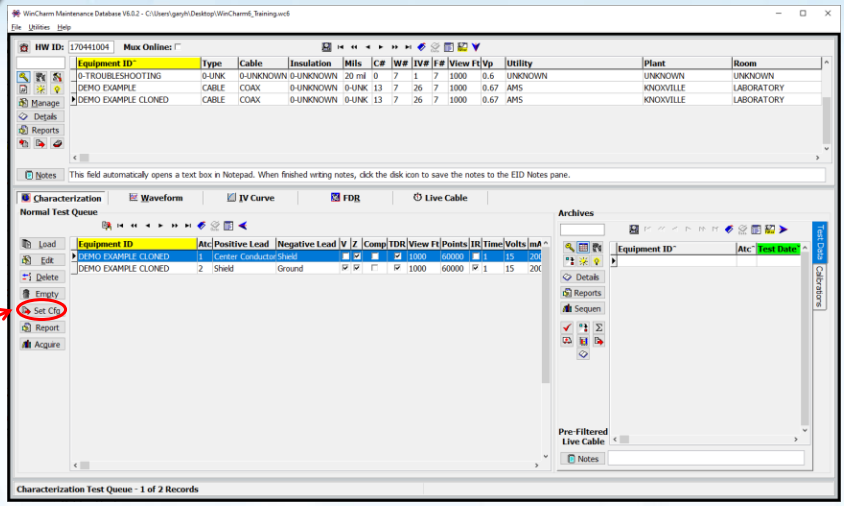
TO EDIT CHANGES FOR *ALL* ATTACHMENTS CLICK <SET cfg>



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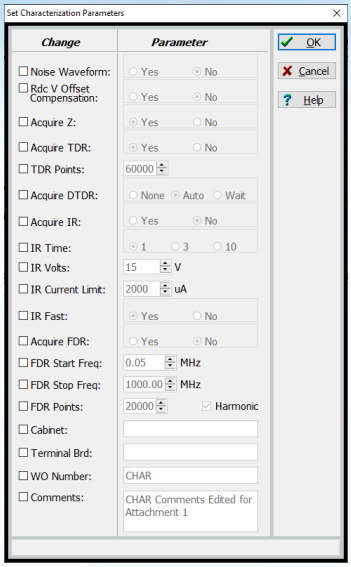
CHECK BOX TO CHANGE PARAMETER



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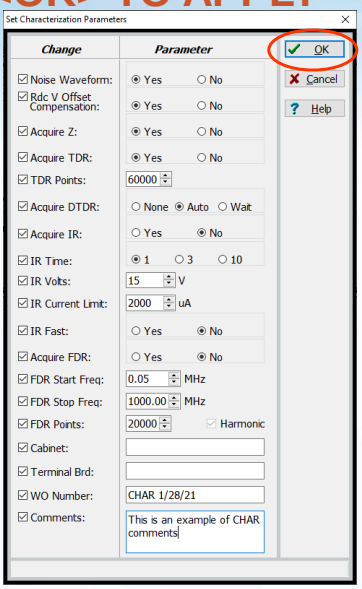
CLICK <OK> TO APPLY



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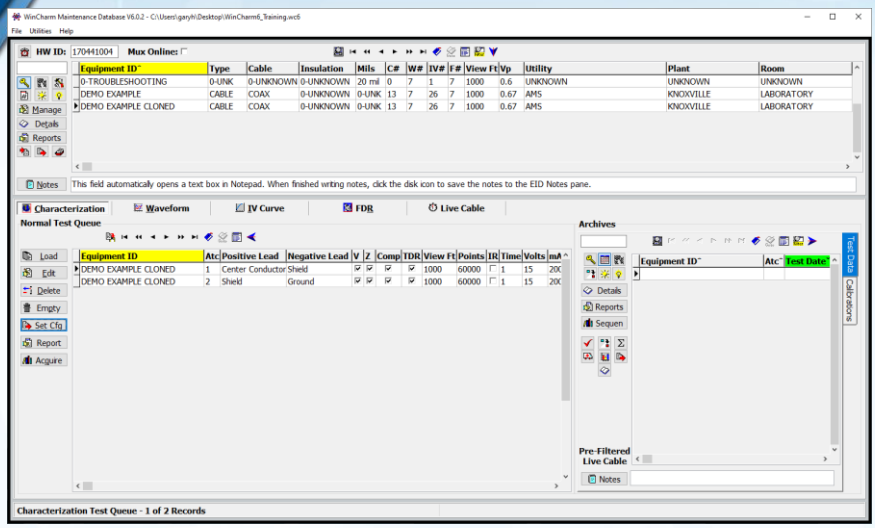
ALL ATTACHMENTS IN TEST QUEUE ARE CHANGED



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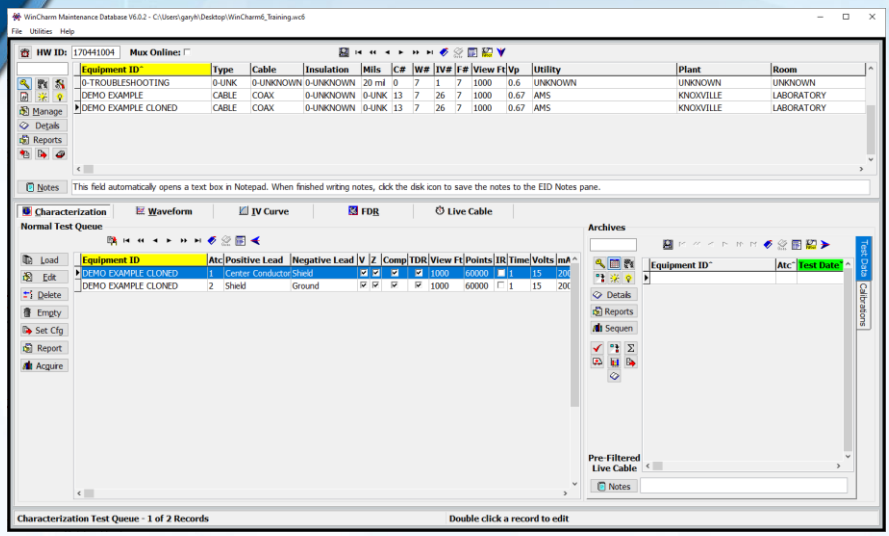
CHAR DATA ACQUISITION

PERFORMING A CHARACTERIZATION TEST

Proprietary / Duplication Prohibited / Copyright 2022 by AMS Corporation

IN THE TEST QUEUE, SELECT THE ATTACHMENT TO TEST; CLICK <ACQUIRE>



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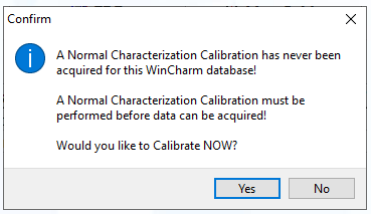
MESSAGE TO PERFORM CALIBRATION



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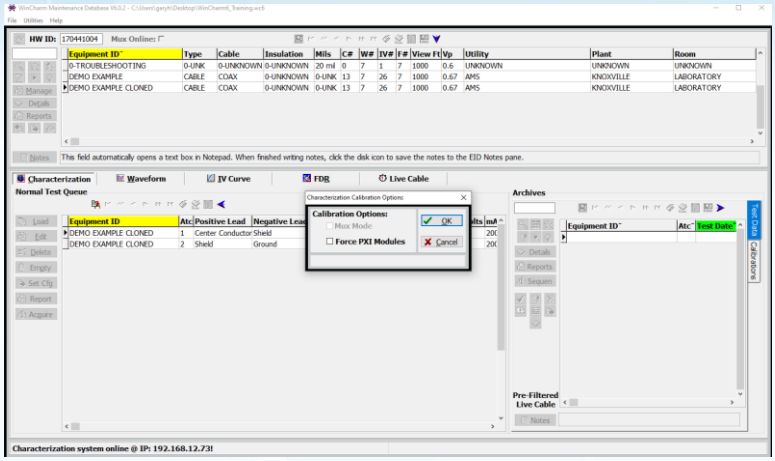
CALIBRATION IN PROGRESS



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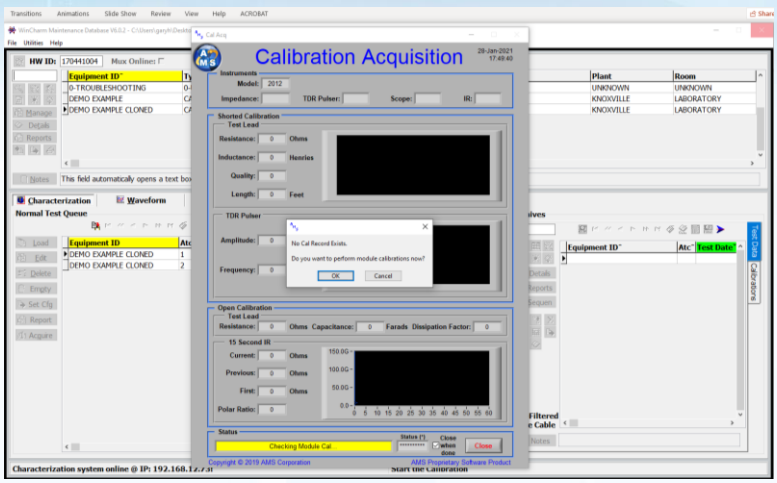
CALIBRATION IN PROGRESS



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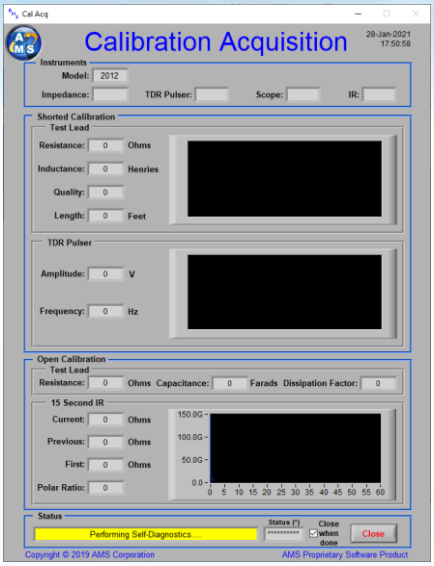
CALIBRATING INTERNAL CHAR MODULES



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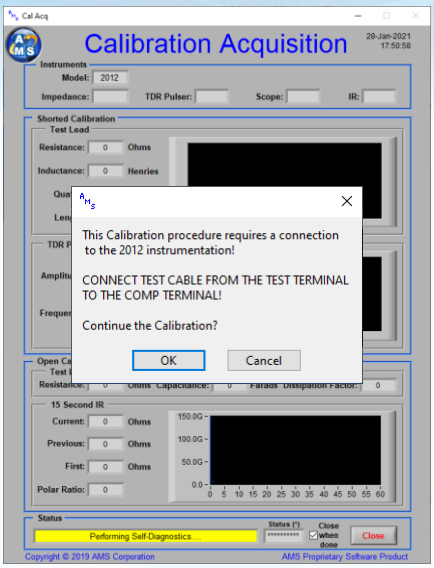
PROMPTS DURING SYSTEM CALIBRATION



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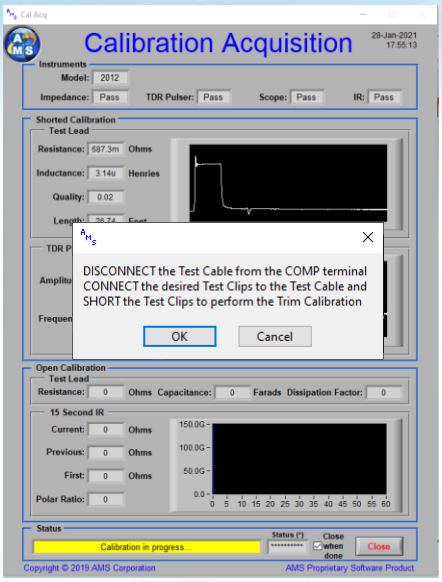
PROMPTS DURING SYSTEM CALIBRATION



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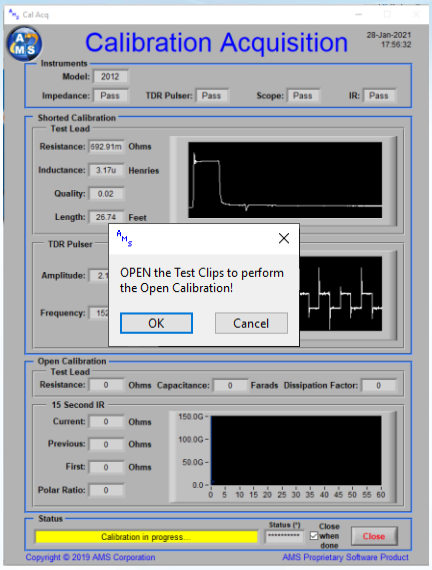
PROMPTS DURING SYSTEM CALIBRATION



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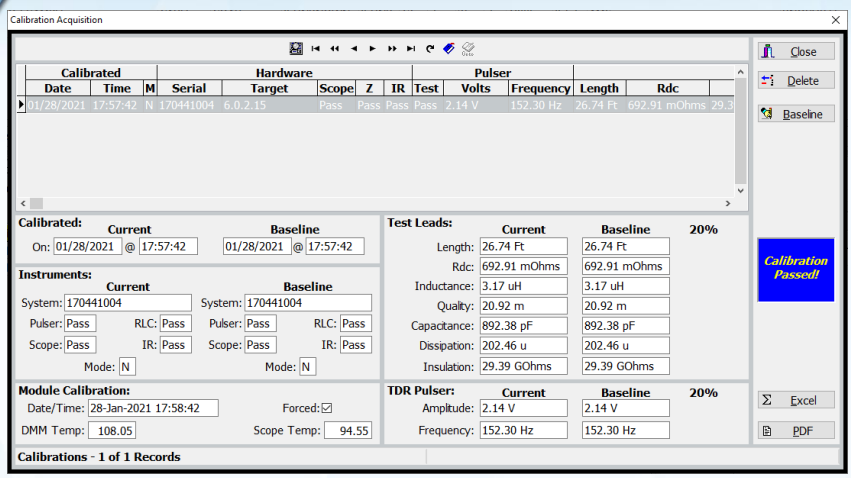
PROMPTS DURING SYSTEM CALIBRATION

CLICK <CLOSE>



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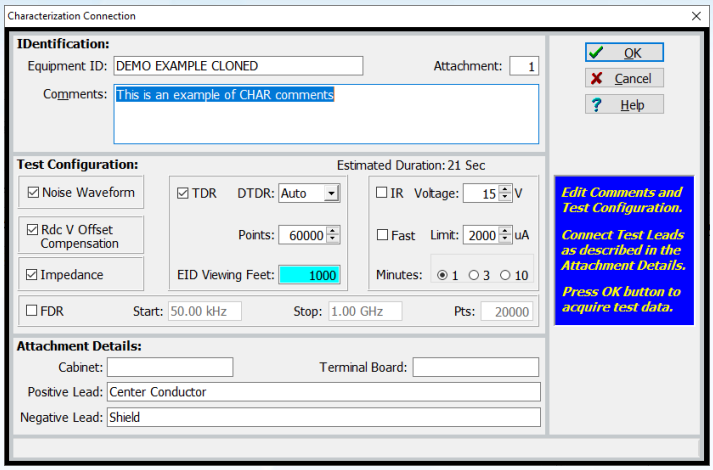
TEST ATTACHMENT CONNECTION FORM; ENTER COMMENT IN BOX CLICK <OK>



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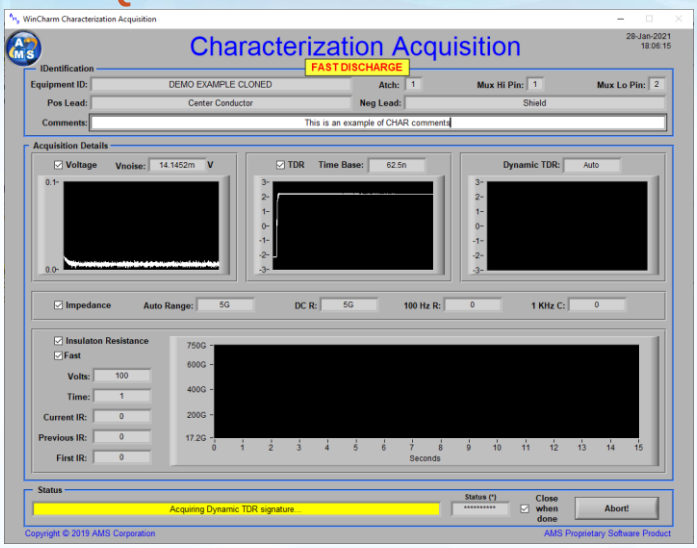
TEST PROGRESS DISPLAYED DURING ACQUISITION



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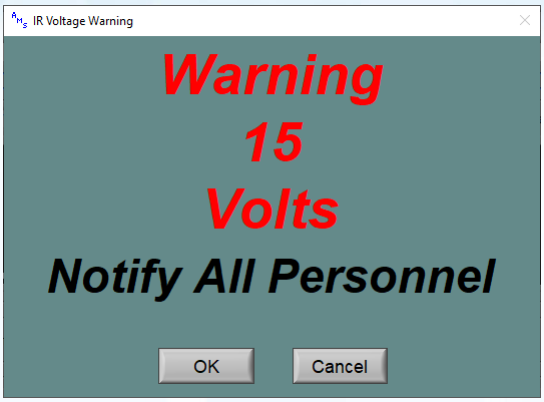
VOLTAGE WARNING BEFORE IR TEST; CLICK <OK>



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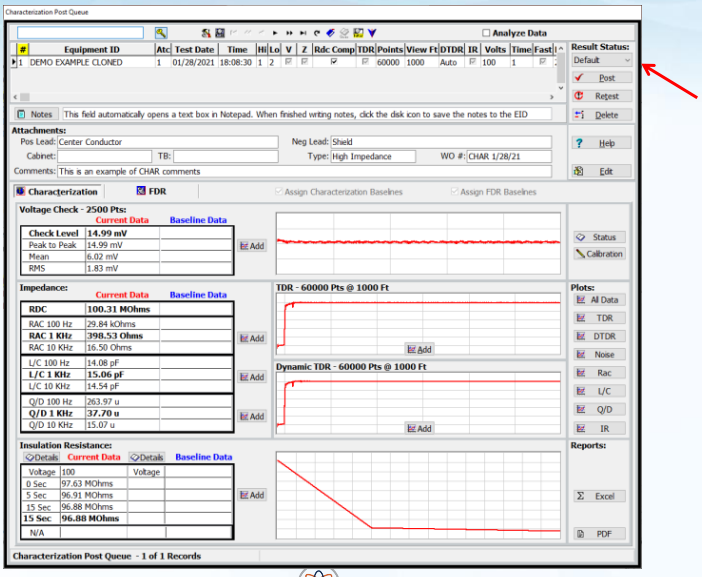
ACQUISITION COMPLETE; REVIEW RESULTS AND SET STATUS



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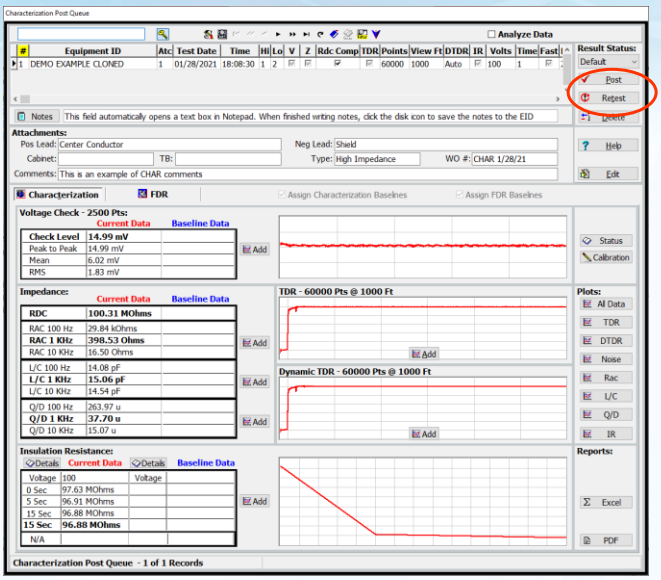
POST OR RETEST



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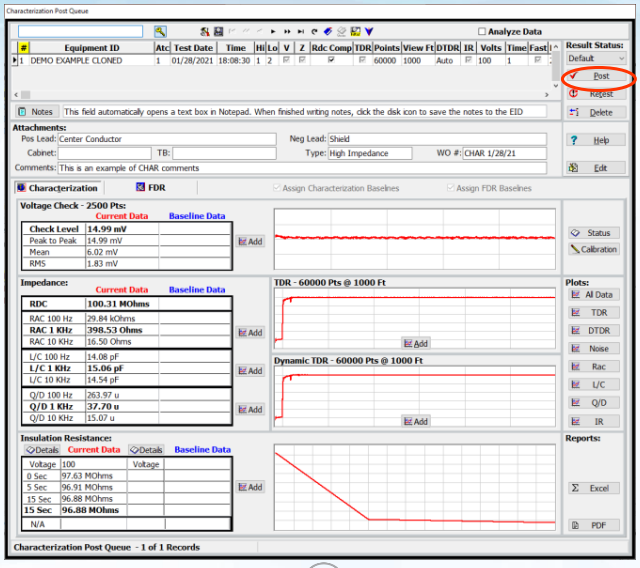
CLICK <POST> TO STORE THE RESULTS IN THE ARCHIVES AND REMOVE TEST FROM TEST QUEUE



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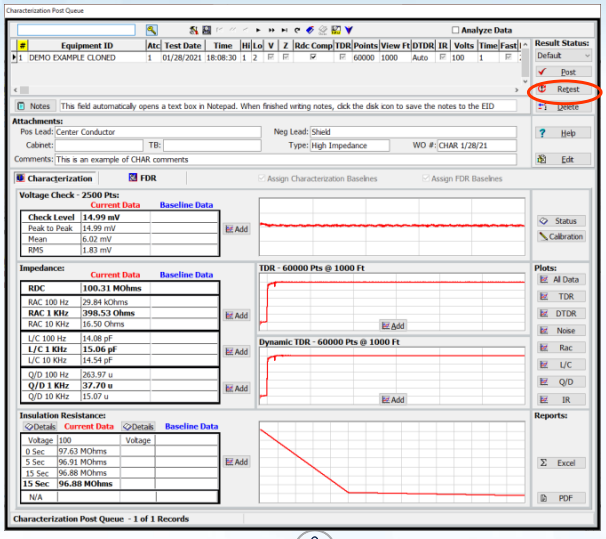
CLICK <RETEST> TO STORE DATA IN THE ARCHIVES AND KEEP THE EID IN THE TEST QUEUE



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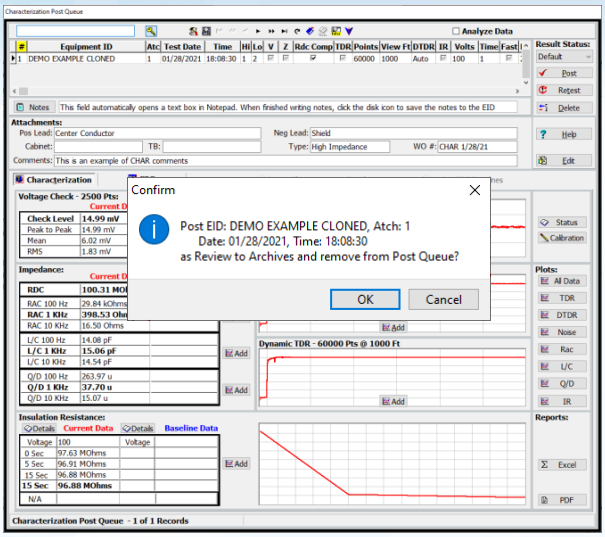
CONFIRMATION OF POSTING CLICK <OK>



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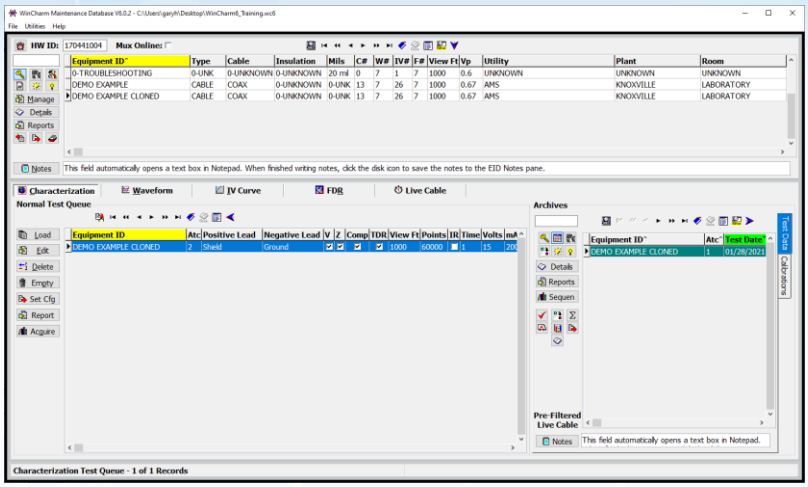
AFTER CONFIRMING, YOU WILL RETURN TO THE TEST QUEUE



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CHAR DATA REVIEW

VIEWING RESULTS STORED IN THE ARCHIVES

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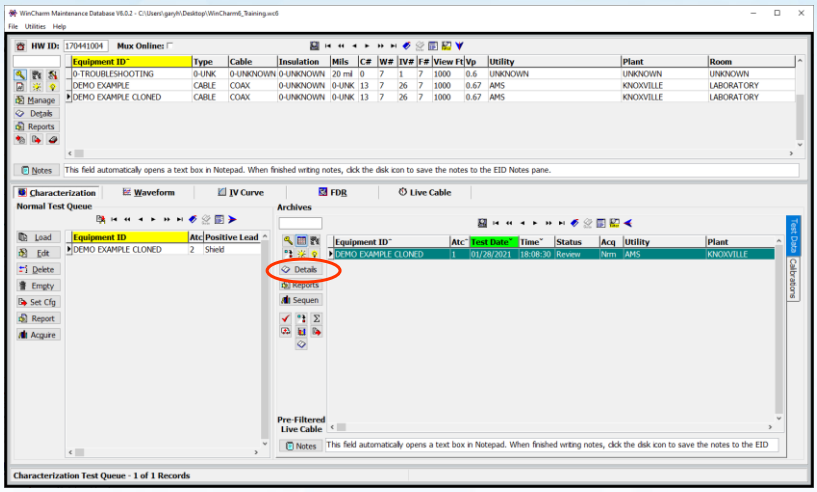
IN ARCHIVES, CLICK <DETAILS> TO VIEW DATA FOR EACH RECORD



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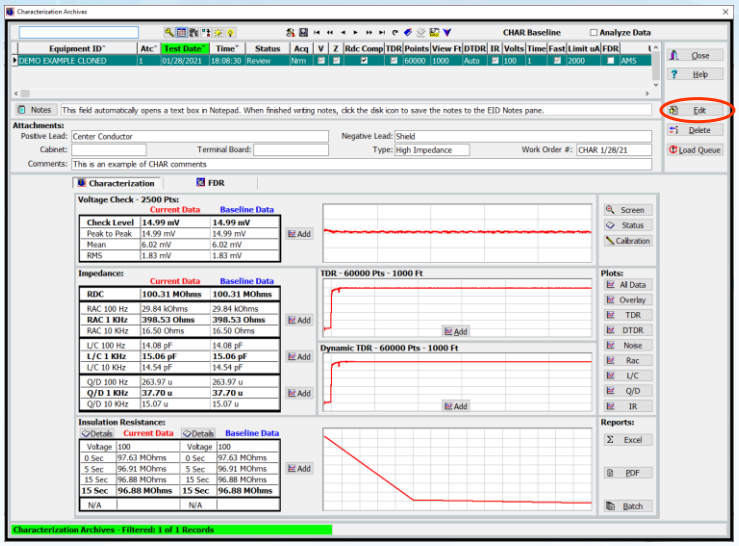
"DETAILS" ALLOW FOR EDITING AND VIEWING RESULTS, CLICK <EDIT>



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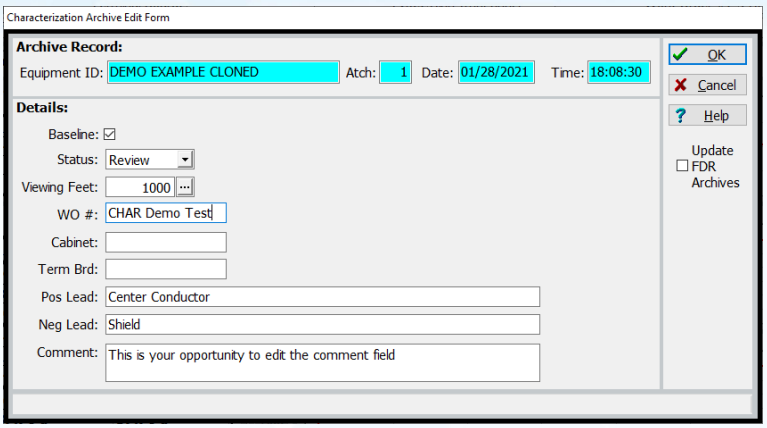
EDIT COMMENTS, RESULT STATUS, WO NUMBER, SELECT "OKAY"



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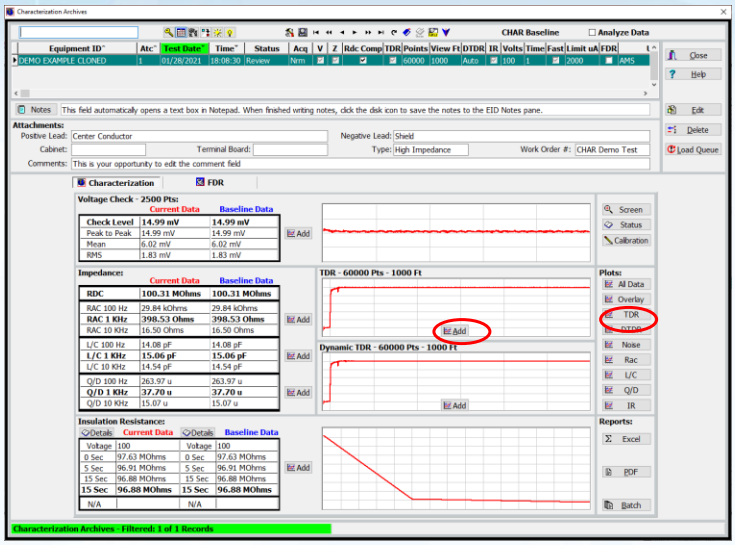
VIEWING ANY PLOT OR ADDING TO ANY PLOT FOR EXAMPLE, CLICK <TDR> OR CLICK <ADD>



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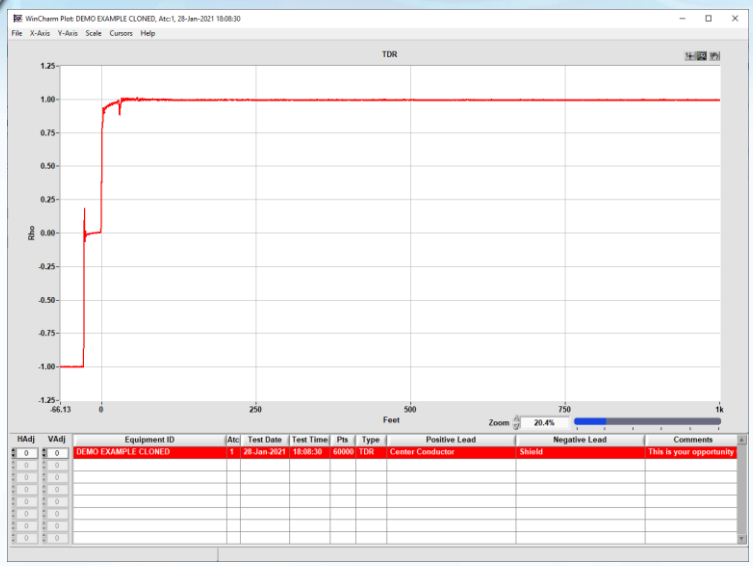
MANY OPTIONS WITHIN TDR PLOT WINDOW



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REVIEW AND QUESTIONS

- The student should now be able to:
  - Create, clone, and edit EIDs
  - Perform characterization tests and store data

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MULTIPLEXER CONNECTED TO THE CHAR SYSTEM

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MULTIPLEXER SPECIFICATIONS

- Multiplexer is a Computer Controlled Switch Adapter for the CHAR System
  - Isolated BNC input connection
  - Any one of 80 inputs can be tested relative to any other input
  - 500 volt rated
- Connects to CHAR System with Ethernet cable and BNC cable
- Five mux cables with 16 conductors each
- Mux cables are terminated in banana plugs

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Thank You!

Questions?