

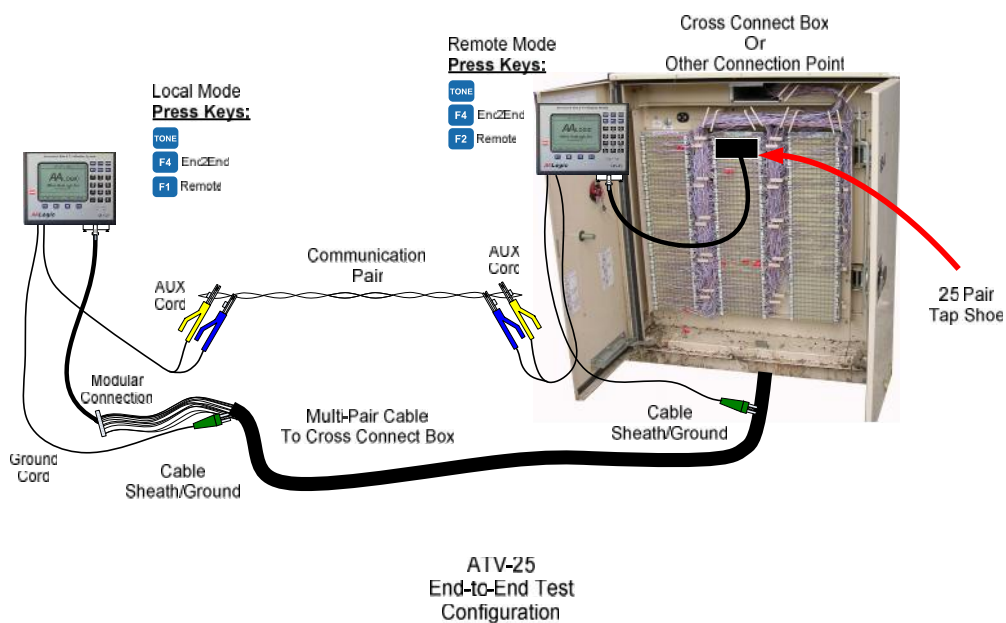
1.1 End-to-End

End-to-End (End2End) testing uses two test sets to confirm Tip and Ring continuity between 25 local pairs and 25 remote pairs. The test specifically checks to ensure that pair X of the local is the same as pair X of the remote and that the pair is not color reversed. Working and Vacant pairs can be tested.

The test uses DC, AC, and resistive measurements to identify the pair and the polarity between the local and the remote. The process is different for Vacant and Working pairs in order to avoid disturbances on Working pairs.

The test also includes the loop resistance, tip to ground, and ring to ground measurements on Vacant pairs. These measurements are required in some completion test projects and they provide indications of poor splices when the tip to ground measurement is not the same as the ring to ground.

A vacant pair is used to communicate between the two units. The figure below shows a typical connection for the End2End test.



1.1.1 Testing Conditions

The test may not be able to confirm the pair under all conditions. Low resistance values Tip to ground or Ring to ground can make it impossible for the test to verify the pair. The test can indicate a fault in these cases.

There may also be cases where an AC signal is highly attenuated. The test will indicate a fault if the attenuation prevents accurate verification.

A pre-test of the pairs can be used prior to an End2End test to identify pairs with faults that may prevent accurate end-to-end verification.

1.1.2 End2End Step-by-Step

Two ATV-25 units are required for End2End testing. The steps below provide the steps and displays for the Local and the Remote.

Local ATV-25	Remote ATV-25
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Press [TONE]

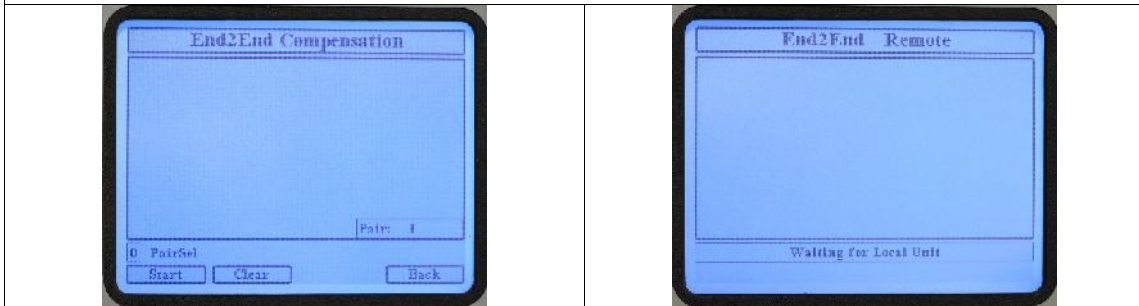
This screen shows the available Tone Test functions of the ATV-25. This figure shows [F1] ID Tone, [F2] Tagging, and [F4] End2End.



Press [F4] End2End

The End2End test requires one Local ATV-25 and one Remote ATV-25. One person can operate both ATV-25 sets by setting up the Remote and then moving to the Local unit. Two persons, one at the Remote and one at the Local, can make the End2End testing easier and faster when many groups of pairs need to be tested.

A communication pair must be identified between the Local and Remote units. The AUX cord of the Local and Remote units must be connected to this pair. The pair must be a vacant pair without battery, ground, or short faults. The ID tone function may be used to aid in identifying a pair.



Press [F4] E2E Comp

The E2E Comp function should be run at least once when either of the ATV-25 units are changed or when the testing locations change.

The purpose of the compensation function is to adjust the measurements for line noise and calibrate the two ATV-25 units.

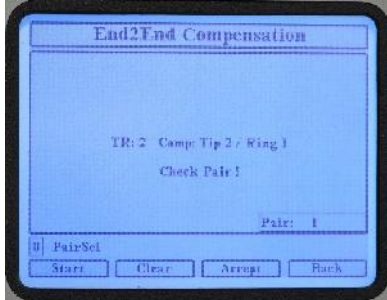
The test pair must be a vacant pair.

Press [F2] Remote

The AUX pair is used to communicate between the Local and Remote. The Remote is ready to establish communications with the Local Unit. No other key presses are required at the Remote unit.

The Remote should have 25 pairs connected to the Cinch connector and the green Ground cord must be properly connected.

The communication pair must be a vacant pair without voltage, shorts, or grounds. Test the pair with the Open Meter before attempting to communicate with the local unit.



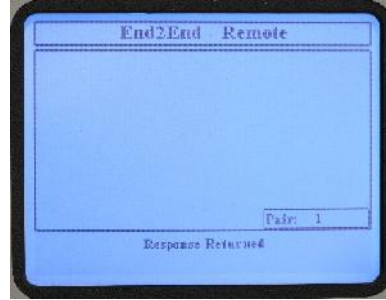
Select the appropriate desired pair and press **[F1] Start**. The **PRO** can be used for the compensation test. Connect the PRO cords on each end and enter 0 for the pair on the E2E Comp screen.

The Local machine communicates with the Remote machine. The Local processes the results and displays the calculated compensation values.

A Check Pair ! message indicates the tested pair may not be suitable for the compensation measurements. The user should determine if another pair should be used or to accept the compensation values.

The user can select:

- [F1] Start Retest the currently selected pair
- [F2] Clear Reset the comp values to 0.
- [F3] Accept The Local machine stores the calculated comp values.
- [F4] Back Return to the E2E initial screen.



The remote ATV-25 display will show various messages during testing. This only indicates testing activity.

The rest of this section will not include additional screen shots of the Remote.

Press **[F4] Back**
The main E2E screen is displayed.



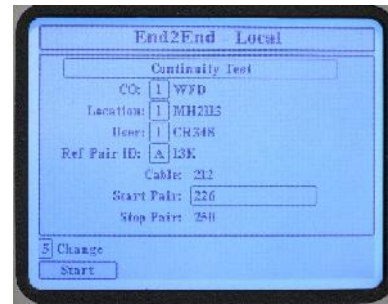
Press [F1] Local

The Local establishes communication with the Remote and displays the E2E test setup screen is displayed. Messages on the screen will indicate if a problem exists in establishing communications.

The CO, Location, User, and Ref Pair ID displayed are the currently selected values. These values can be changed by using the ▲ and ▼ keys to highlight the item and using the ◀ and ▶ to select other values. Use the [CFG] option if the desired value has not been stored in the ATV-25. The Ref Pair ID is not used by the E2E test.

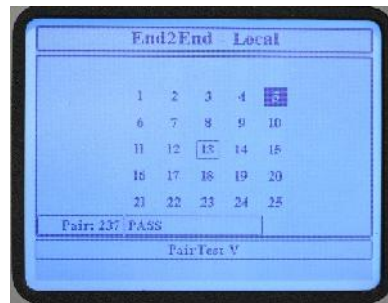
Enter the Cable and Start Pair by using the ▲ and ▼ keys to highlight the item and press **[S] Change**. Enter the new value using the keypad and press **[F1] Save** when done.

The Stop Pair is automatically calculated for a 25 pair group based on the start pair number. A different stop pair may be entered if desired.



Press [F1] Start

The Local begins testing and displays a 25 pair matrix. The pair being tested is indicated by a □ around the pair number. Pairs that fail are displayed as a black square.



The results are displayed at the end of the test and the first pair of the group is highlighted. The user can use arrow keys (◀, ▶, ▲, and ▼) to move the highlight to any pair and view the result. This helps review pairs that have failed. The **[F3] TestViewer** allows the user to see the meter measurements taken during the test.

The **[F1] ReTestPr** is used to retest a pair. This allows the user to correct and retest a defective pair before saving the results.

The **[F2] Save** key saves the test results into internal memory and returns to the setup screen.

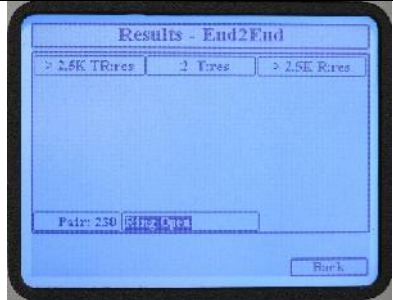


Testing is complete for pairs 226 through 250. Pair 5 is defective.

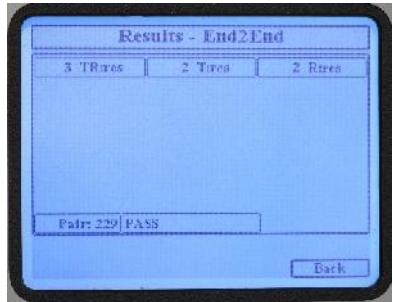


Pair 230 has a Ring side open.

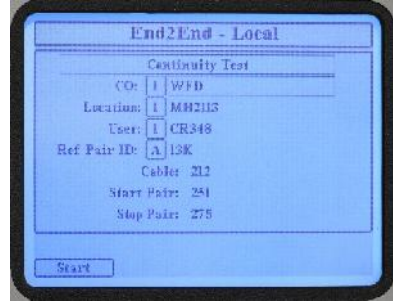
The End2End test returns to the test setup screen after saving the results. The pair count is automatically incremented to the next 25 pair group. The user must move the tap shoe connections at the Local and Remote and press **[F1] Start** to begin testing the next 25 pair group. Any of the information may be changed, if desired, before starting the next test.



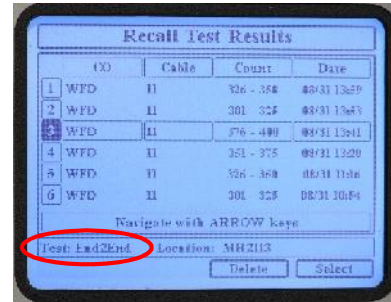
The measurements show a Tip to ground measurement of 2 ohms indicating Tip to Tip continuity. The loop resistance is greater than 2.5K ohms and the Ring to ground resistance is also greater than 2.5K ohms confirming the Ring side is open.



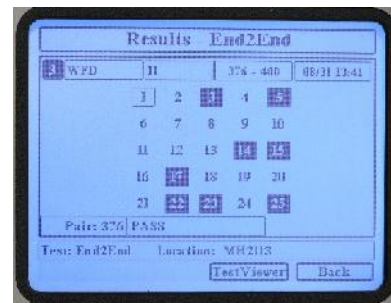
The left arrow, **◀**, is pressed in the test viewer to display pair 229. This pair passed. The loop resistance indicates continuity from the Tip at the Local unit through the Remote unit back to the Ring at the local unit.



Press [RCL] to review any saved test results.



Test results are shown with the last test on top. The highlighted test is an End2End test for the WFD office, Cable 11, Pairs 375 through 400.



The stored test results are displayed in the same format as the end of testing. This is a review only and the data cannot be changed.