1.1 Pair Identification ATV-25 to ATV R/T

Pair Identification ATV-25 to ATV R/T requires one ATV-25 and one ATV R/T to identify cable pairs. The ATV R/T placed at a known location with access to pairs using tap shoe cables. The ATV R/T is referred to as the Remote. The ATV-25 is used at the pair identification location and referred to as the Local.

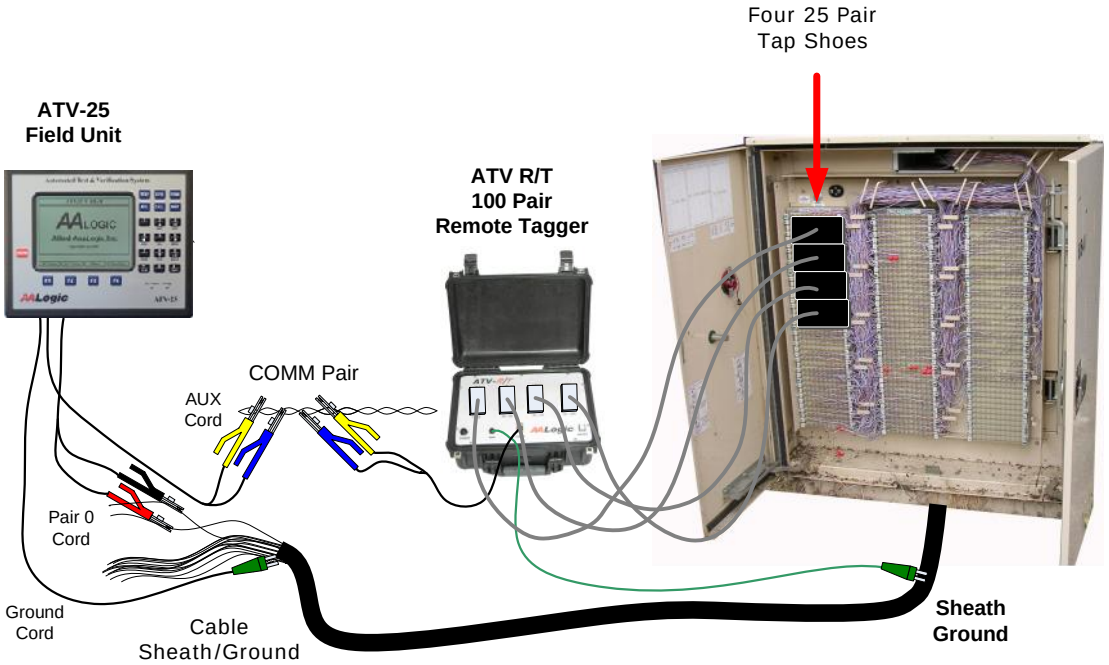
The Remote Tagging feature is similar to the ATV-25 to ATV-25 tagging feature. The ATV R/T is a more cost effective approach when tagging more than one 25 pair group at a time.

This system identifies the Tip and the Ring on working or vacant pairs and reports the identified pair number. The Tip and Ring can be straight or color reversed.

Some pair faults such as open and grounds may prevent the pair from being identified. Split pairs will not report a pair number. The Remote Tone mode can be used to locate these pairs. More than one pair may be reported in some cases such as 4-wire circuits.

The ATV R/T user's guide contains detailed instructions on setup for ATV-25 to ATV R/T tagging.

The ATV-25 and ATV R/T use a communication pair connected to the AUX cord at each end. The figure below shows a typical pair identification configuration.



ATV-25
100 Pair Tagging with
ATV *R/T*

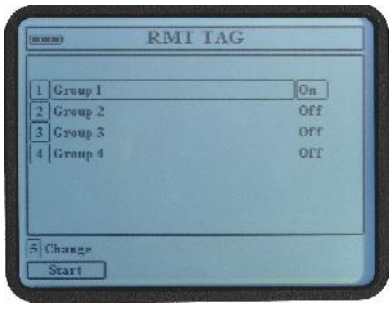
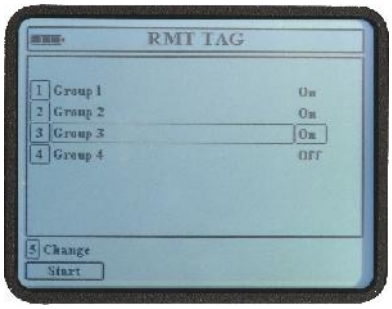
1.1.1 Pair Identification RMT, Tagging Step-by-Step

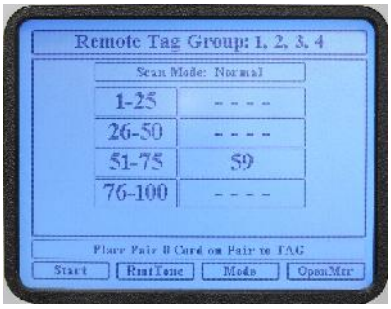
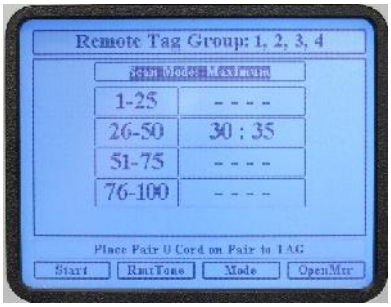
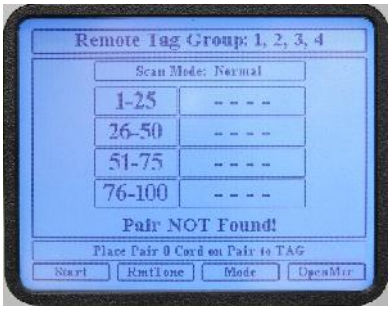
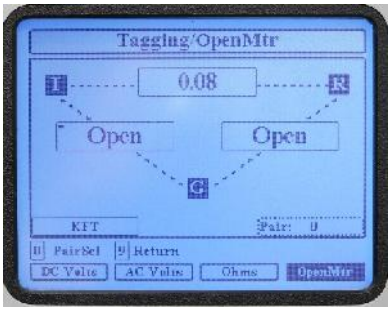
One ATV-25, One ATV R/T, and one to four tap shoe cables are required. The steps below provide the steps and displays for the ATV-25 and the ATV R/T.

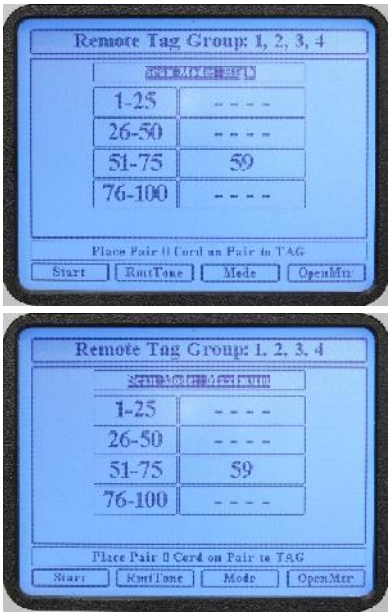
Identify a vacant pair between the local and remote locations for use as a communications pair. This can be any balanced, vacant pair. The ATV-25 meters are useful in identifying the pair.

At the remote location:

- Connect one or more tap shoe cables, up to four, to the ATV R/T.
- Connect the ATV R/T power supply to the ATV R/T and 110Vac supply.
- Connect the ground cable to the ATV R/T and to the ground of the cable being tested.
- Connect the COMM cord to the ATV R/T and the communication pair previously identified.
- Secure the cords and cables, if needed, to avoid accidental removal.
- Connect the tap shoe cables to the pairs to be identified.

Press **[RMT]** This screen allows the user to select the module(s) to search during tagging. Any combination of the four 25 pair groups can be enabled to search. When tagging, pairs identified in Group 1 will be reported as pairs 1 to 25, Group 2 as 26 to 50, Group 3 as 51 to 75, and Group 4 as 76 to 100.	 Group 1 is selected  The selection shown would search 75 pairs, Groups 1 through 3.
Press **[F1] Start** when the desired groups are selected. The ATV-25 may display the message “Searching for Remote” repeatedly if it is unable to detect the tone from the ATV R/T. This means there is an issue with the ground connections, the ATV R/T is not turned on or connected properly, or there is a problem with the communication pair. The ATV-25 connects to the ATV R/T and displays the main tagging screen. The selected groups are indicated at the top of the screen. The Scan Mode is also displayed at the top of the information area.	 Initial tagging screen with all groups selected and Normal Scan Mode

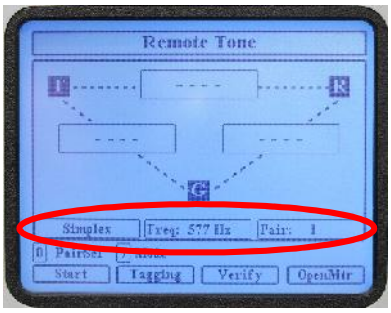
Connect the PR0 cord to a pair and press **[F1] Start**. The ATV-25 displays a table with one row for each selected group. The identified pair number is displayed in the row for the group. Dashes indicate no pair was found for that group.	 Pair 59 identified
Normally only one pair is located. In some cases more than one pair may be reported. This may be in the same group or in a different group. This could be due to cable faults or special circuits.	 Multiple pairs found, 30 and 35, probably a 4-wire circuit.
When all rows have dashes the message "**Pair NOT Found!"** is displayed indicating no pair match is found. An error tone is also heard. Check the PR0 cord and press **[F1] Start** to retest. If the pair is still not found, press **[F4] OpenMtr** to select the open meter and check for defects on the pair or move on to another pair. It is not possible to identify pairs with grounds or opens in some cases. The Tagging program requires the Tip *and* Ring be located before displaying a pair number. Split pairs will not be located using the Tagging program. Remote tone assists users in identifying pairs with problems.	 Pair Not Found  Open meter indicates a missing ground, press 9 to return to tagging

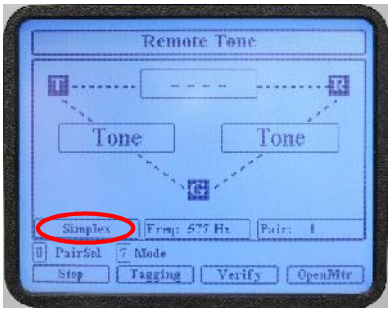
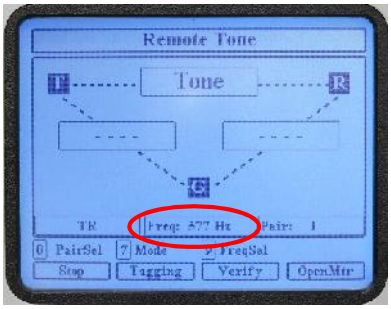
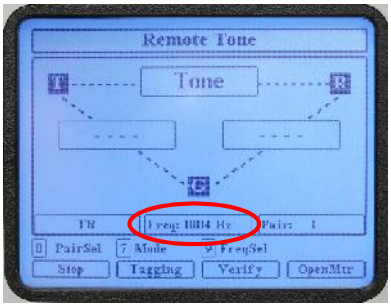
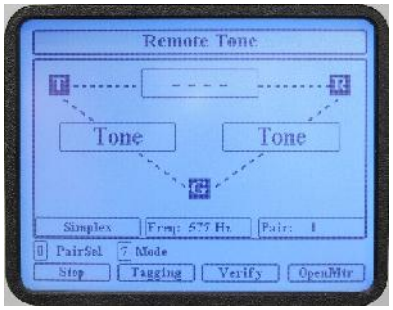
Some cable conditions may cause the tagging tone sent by the ATV-25 to be decreased to a level below the normal minimum at the ATV R/T. Pressing **[F3] Mode** allows the user to change the Scan Mode from Normal to High or Maximum. High and Maximum lower the minimum tone required for the ATV R/T to find a match. Changing the mode is useful when the ATV R/T is located in an office or near equipment that has a low resistance to ground on Tip or Ring or applies battery to the pair with low impedance.	

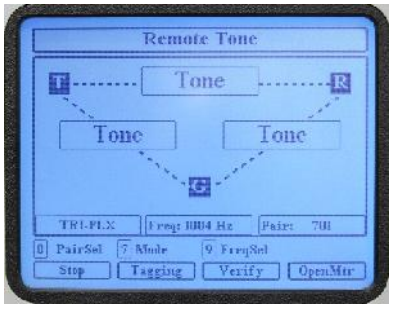
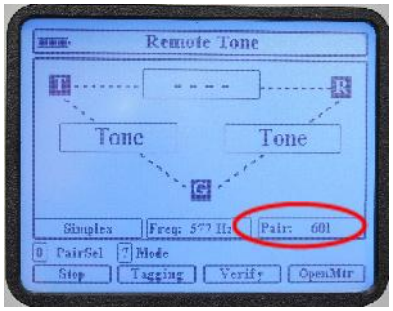
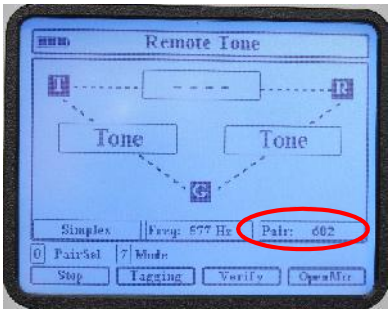
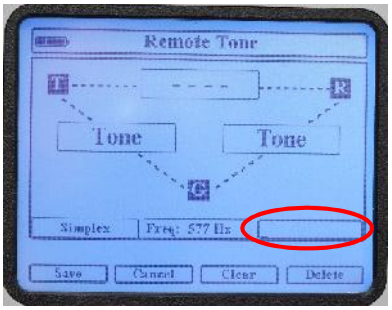
1.1.2 Pair Identification RMT, Remote Tone Step-by-Step

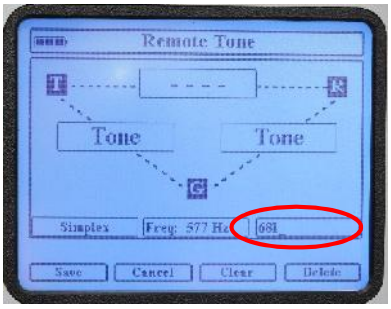
Remote tone is used to send tone on a pair from the ATV R/T. This mode is used to:

- Identify pairs that are not identified using the Tagging feature
- Identify pairs in cables where 100 pair groups are not identifiable. This can occur with random splices for example
- Identify pairs at more than one location at the same time

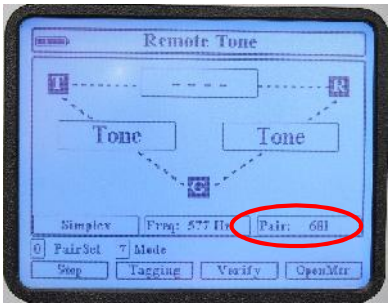
Press **[F2] RmtTone** to switch to the remote tone mode from the main tagging screen. This mode allows the user to request tone from the ATV R/T on a specified pair. Remote tone is used to identify pairs that were not found during tagging. It may also be used when the cable does not allow for identification of 100 pair groups or to identify pairs at multiple locations at the same time. The user selects the tone mode, frequency, and pair at the ATV-25. The ATV-25 sends instructions to the ATV R/T over the communication pair to apply the tone to the pair.	 The default tone mode is Simplex, 577Hz, on pair 1. Tone is off, **[F1] Start** is used to turn the tone on

The mode options are Simplex, Metallic (TR), Ring to Ground, Tip to Ground, and TRI-PLX. The mode is selected by pressing 7 Mode until the desired tone mode is displayed on the screen.	 The current tone mode is Simplex
The frequency options are 577Hz or 1004Hz. The 577Hz is the most common frequency for toning pairs and it is the default frequency. Press 9 FreqSel to toggle the frequency between 577Hz and 1004Hz. Note: Simplex only allows 577Hz and the 9 FreqSel is not displayed when in Simplex mode.	 577Hz tone  1004Hz tone
The **[F1]** key is used to **Start** and **Stop** the tone. The word **Tone** is placed in the boxes to indicate how tone is applied to the pair. Dashes (- - - -) are displayed in boxes where tone is not applied. The 7 Mode and 9 FreqSel keys can be pressed at any time. It is not necessary to turn the tone off.	 577Hz Simplex tone applied to pair 1. No tone is applied Tip to Ring.

	 1004Hz TRI-PLX tone applied Tip to Ring, Tip to Ground and Ring to Ground.
The pair can be changed by pressing the ▶ key to switch to the next higher pair and the ◀ key to switch to the next lower pair. The actual cable pair number can be used when selecting pairs. Refer to **Error! Reference source not found.** for details on entering pair numbers.	 Tone on pair 601  Tone on pair 602
The pair number can also be entered using the keypad. Press **0 PairSel** and the cursor is placed in the pair number field. Enter the number of the desired pair and press **[F1] Save**. The ATV-25 allows entry of the actual pair numbers.	 ATV-25 is ready for the pair number to be entered.



Pair number 681 has been entered, Press **[F1] Save** to complete the entry.



Tone is on pair 681 at the ATV R/T

1.1.2.1 Pair Identification RMT, Pair Verification, Remote Tone Step-by-Step

The ATV R/T Remote Tone mode includes short/ground detection and pair verification features. Once a pair is located using tone, verification allows the ATV R/T to confirm the correct pair as would normally be done by using another person at the remote site.

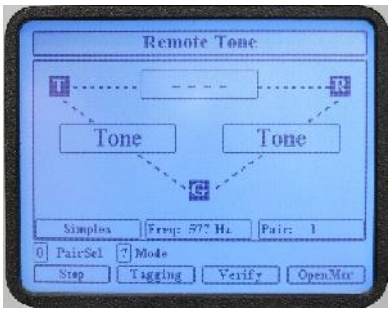
Select Remote Tone mode. Select a tone mode, frequency, and pair.

1. Press **[F1] Start** for the ATV R/T to send the selected tone.
2. Use a probe to locate the pair.

The pair may be shorted or grounded to confirm the pair depending on the tone mode as indicated in the table below.

When the ATV R/T detects a short or ground on the pair, the ATV-25 displays the word BUZZ and a tone is heard.

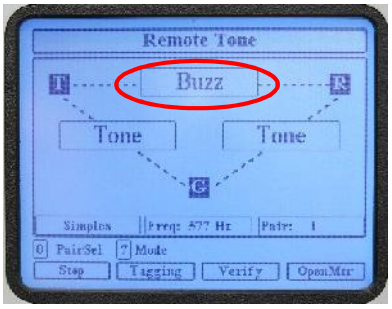
Tone Mode	Short	Ground
Simplex	×	
Metallic (TR)	×	



577Hz Simplex tone on pair 1

Ring Ground		×
Tip Ground		×
TRI-PLEX	×	×

The ATV R/T measures the existing levels on the line when the tone is applied. It then monitors the line for a change in the levels. A change is interpreted as a short or ground applied by the user. This feature is not available when a low value short or ground is already on the pair.



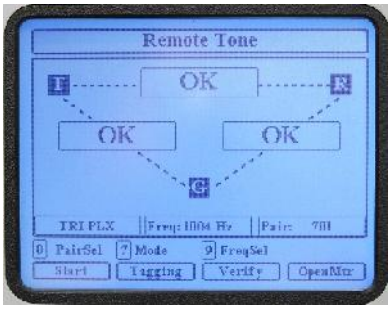
The word BUZZ indicates the ATV R/T has detected a short on the pair.

The pair can also be confirmed using the Verify function. This reduces the possibility of creating interference on the pair.

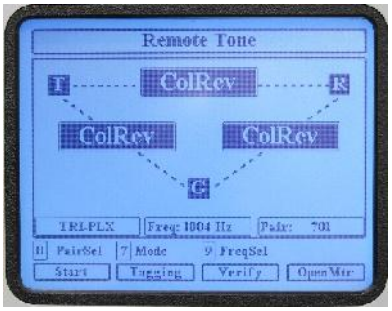
Use a probe to locate the pair with tone. Connect the PR0 cord to the pair. Press **[F3] Verify**.

The ATV-25 and the ATV R/T test from end-to-end to confirm the pair. This testing attempts to confirm the Tip and Ring of the pair. The results indicate the results of the testing.

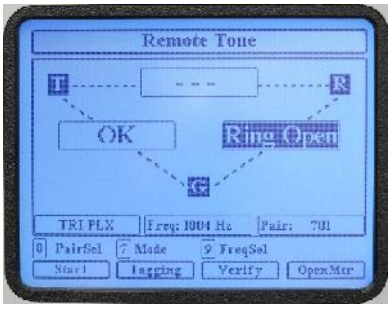
The **[F4] OpenMtr** is available to test the pair for possible defects. The meter can indicate resistive defects, opens, and voltages on the pair. This can help the user determine the status of the pair and decide on a resolution.



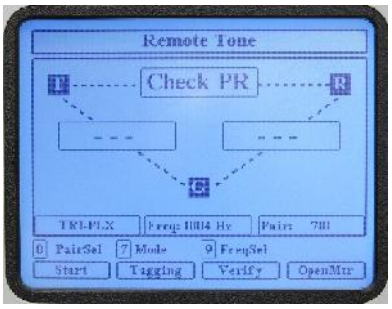
The pair was verified, the Tip and Ring were confirmed



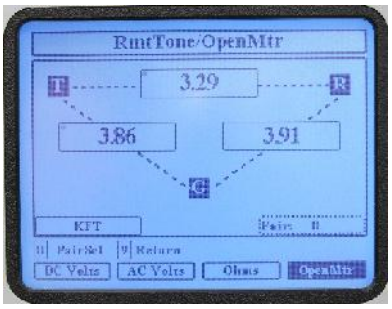
The pair was verified, the Tip and Ring were confirmed but ther is a polarity reversal between the ATV R/T and the ATV-25



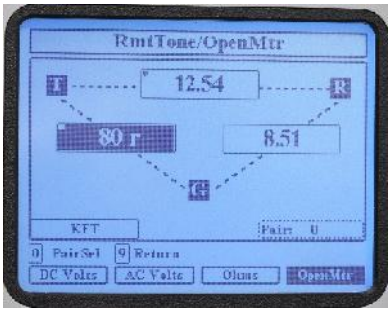
The Tip was found but the ring was not Verified. Tone can be sent on the pair to locate the other side of the pair if the pair is split.



The Verify program was not able to confirm the Tip or Ring. The OpenMtr can be used to determine the status of the pair.



The image shows a vacant, balanced pair that is 3,290 feet long. The 9 Return key is used to return to the Remote Tone mode.

	 This image shows a defective pair with an 80 ohm ground on the tip. This defect can make the pair difficult to identify. The field side of the pair can be opened to complete verification in some cases.