



# ATV-25 Pair Identification

Optimizing Field Testing  
and Records Integrity

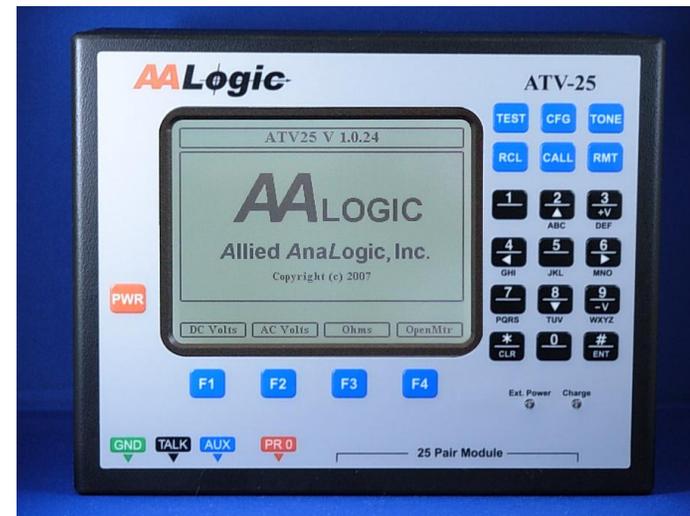


# Pair Identification Options

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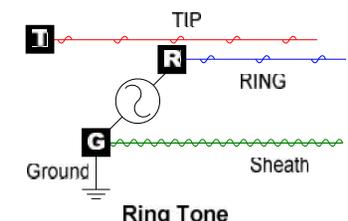
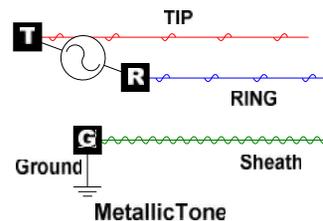
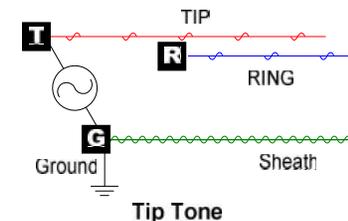
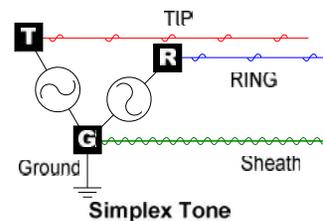
The ATV-25 provides features useful in automatic and manual pair identification.

- ID Tone Generator
- Automatic Tone Search
- Automatic Pair Tagging (Identifier)
- Automatic End-to-End Test



# ID Tone

- ID Tone is compatible with standard tone probes in use in the field.
- Dual frequency capability and multiple modes are provided to meet most applications.
- The table below shows the frequency and mode options available.

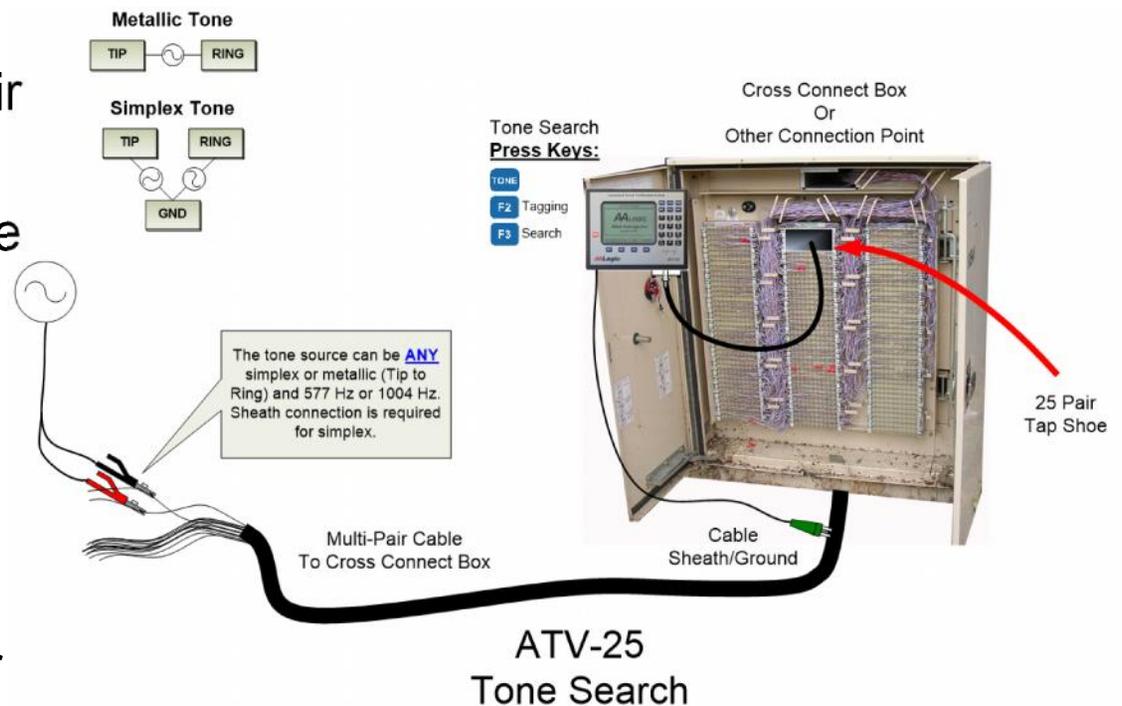


ID Tone Modes

Mode	577 Hz	1004 Hz
Simplex	✓	X
Metallic	✓	✓
Tip to Ground	✓	✓
Ring to Ground	✓	✓

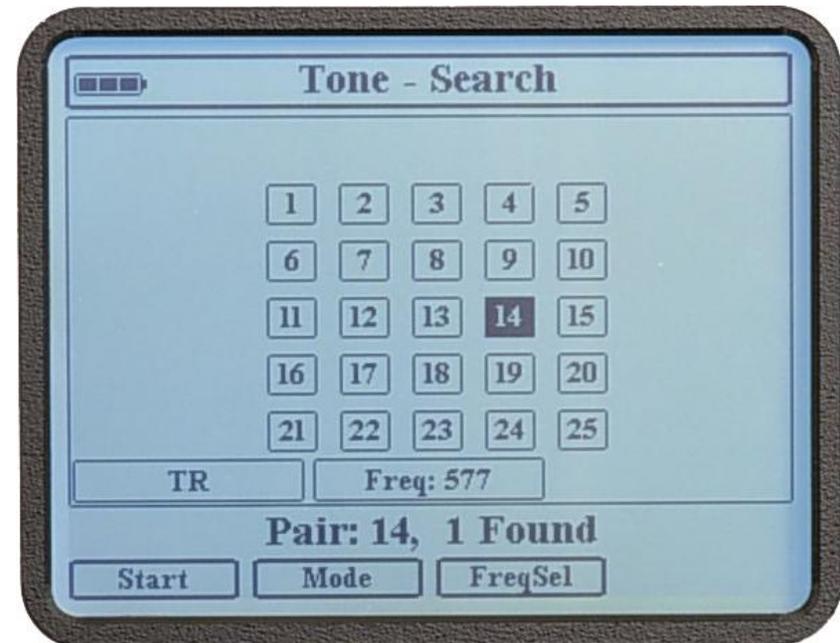
# Automatic Tone Search

- Automates the process of tone probing for a pair
- More accurate than using an inductive probe
- Searches 25 pair
- Works with standard tone probes
- 577 Hz and 1004 Hz tone supported
- Searches for metallic or simplex tone



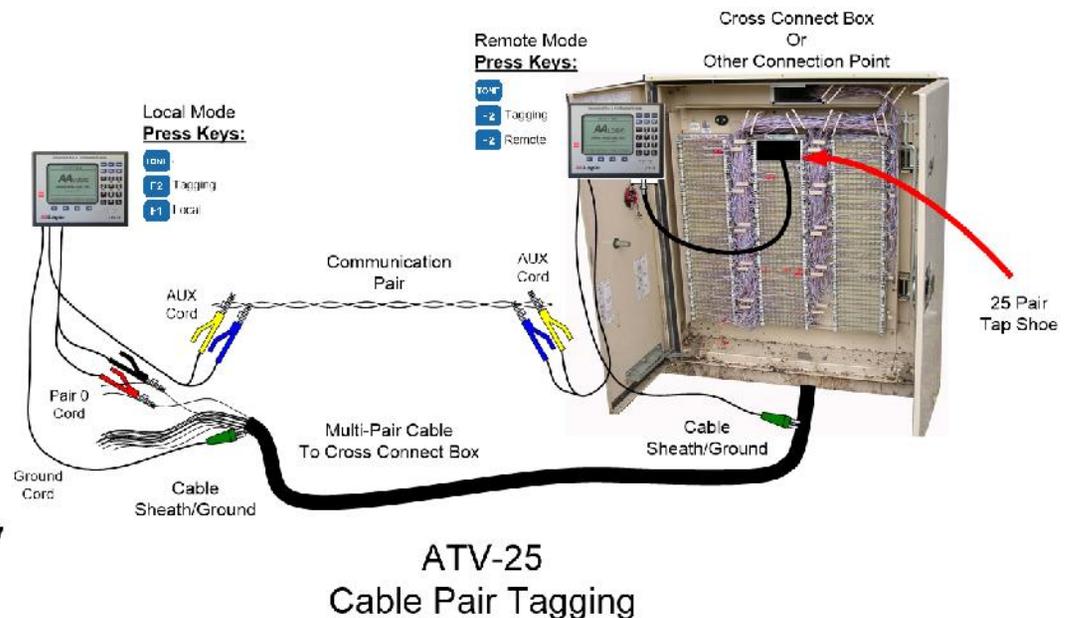
# Automatic Tone Search

- The Tone Search result screen shows a matrix of the 25 pairs. Pairs with tone that meets the internal threshold have black backgrounds.
- The display indicates the frequency, mode and the identified pair, 14 in this case.



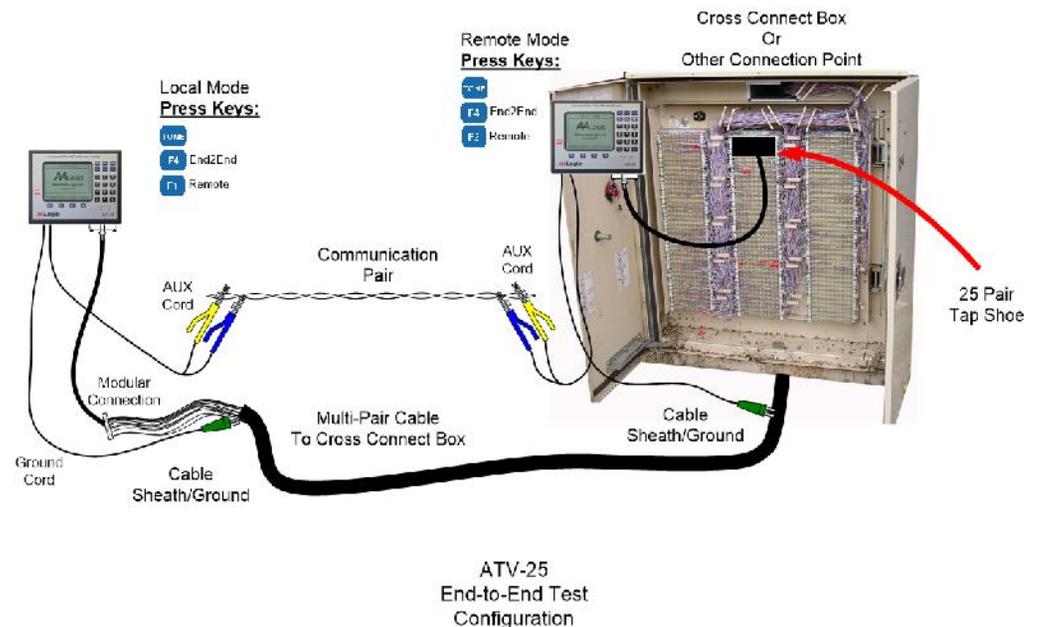
# Automatic Pair Identification

- Matches AC and DC parameters for the pair at the local and remote locations
- Multiple remote units may be used to increase the capability to 50, 74, or 100 pair
- Pairs are typically identified within 6 seconds



# End-to-End Pair Confirmation

- Verifies Tip and Ring continuity between the local and remote locations
- Reports opens and reversals
- Tests working and vacant pairs
- Measures Tip-Ring and Tip to ground resistance values on vacant pairs
- Results are stored electronically for uploading to a PC.



# Optimizing Effort

## ■ Identification of Service

- Voltage Checks
  - DC Voltages
  - AC Voltages
    - Special Circuits
    - Noise
- Resistance Checks
  - Shorts
  - Grounds
- Open checks
  - Pair Length
  - Balance
  - Bridge Tap
- Assigned Number Retrieval

## ■ Additional Tests

- Loop Current
- Load Coils
- mW Reference
- Quiet Termination
- Spectral Plot



## ■ Pair Identification

- Tone Generator
- Continuity Checks

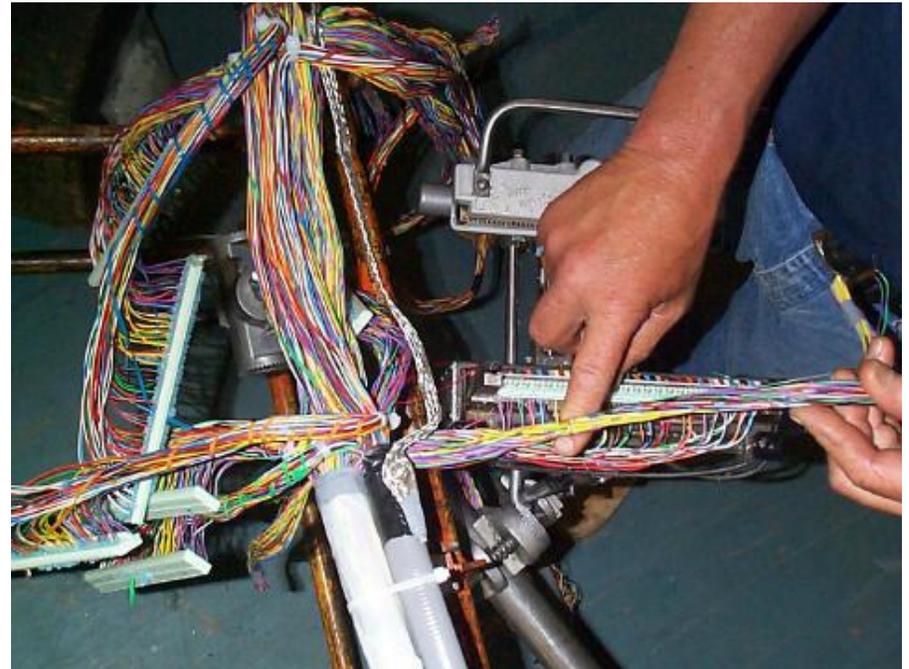
## ■ Record Updates

## ■ Preventive Maintenance

# Optimizing Test Time

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- Multiple Pair Access
  - Connect 25 pair at a time.
- Identification of Service
- Point of Reference for Cable and Pair
  - Tone Generation
  - Tone Search
  - Pair Tagging
- Electronic Storage of Test Information



# Tap Shoes Cinch Connector

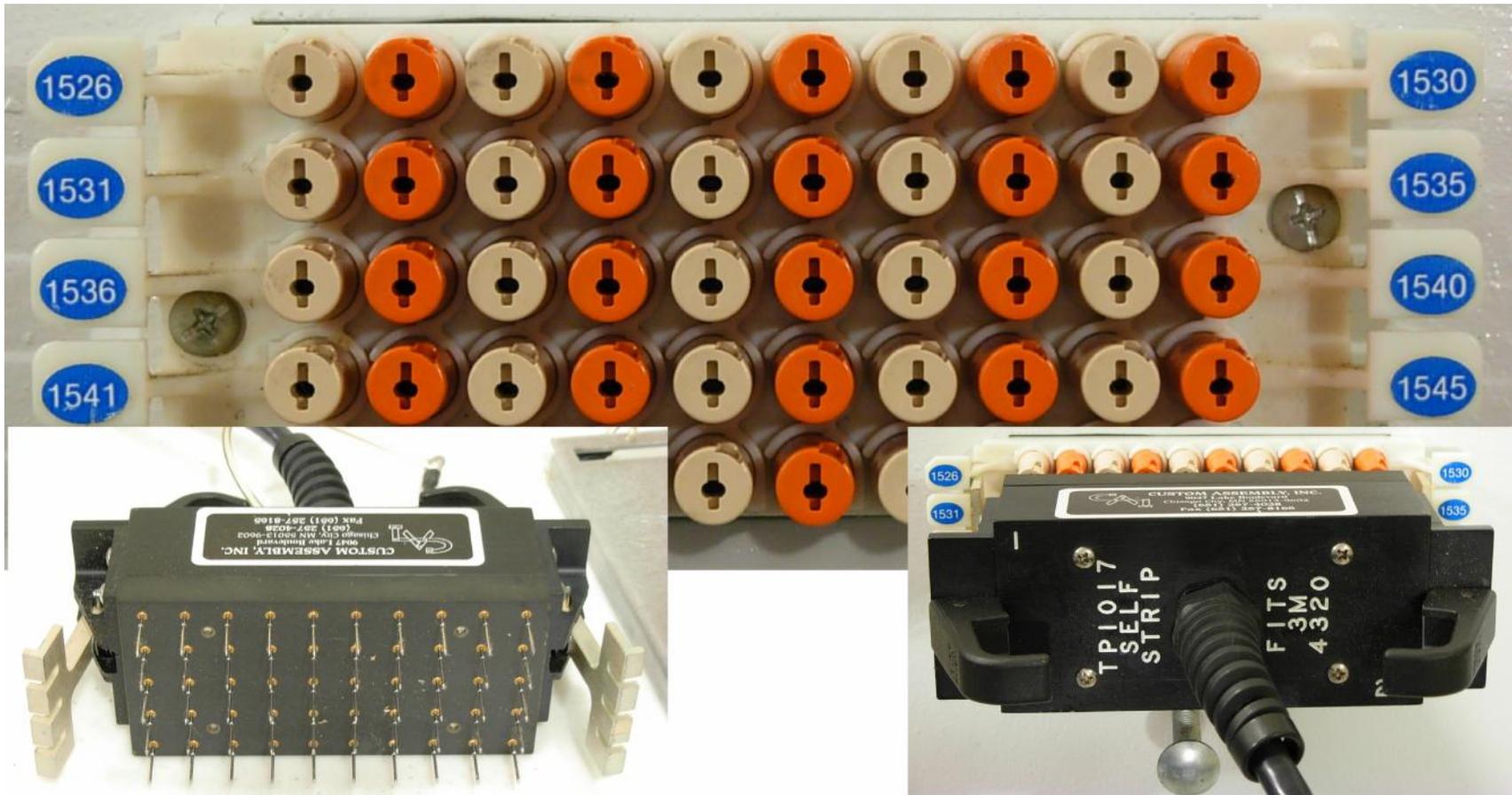
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# Tap Shoes

## 3M 4320

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# Efficiency – Working Pair Test

<b>Work Period</b>	<b>4</b>	<b>Hours</b>	
<b>Time to move shoe</b>	<b>5</b>	<b>Minutes</b>	
<b>Working Pair Test</b>	<b>1.70</b>	<b>Minutes</b>	<b>Per 25 Pairs</b>
	<b>DC Volts</b>		
	<b>Resistive Faults</b>		
	<b>Open Tests</b>		
	<b>Vacant Noise</b>		
	<b>Loop Current</b>		
	<b>Record all measurements</b>		
<b>Total Pairs Tested</b>	<b>875</b>		

# Efficiency – Vacant Pair Test

<b>Work Period</b>	<b>4</b>	<b>Hours</b>	
<b>Time to move shoe</b>	<b>5</b>	<b>Minutes</b>	
<b>Vacant Pair Test</b>	<b>2.2</b>	<b>Minutes</b>	<b>Per 25 Pairs</b>
	<b>DC Volts</b>		
	<b>Resistive Faults</b>		
	<b>Open Tests</b>		
	<b>Vacant Noise</b>		
	<b>Record all measurements</b>		
<b>Total Pairs Tested</b>	<b>825</b>		

# Efficiency – Rapid Pair Test

<b>Work Period</b>	<b>4</b>	<b>Hours</b>	
<b>Time to move shoe</b>	<b>5</b>	<b>Minutes</b>	
<b>Rapid Pair Test</b>	<b>0.4</b>	<b>Minutes</b>	<b>Per 25 Pairs</b>
	<b>DC Volts</b>		
	<b>Open Tests</b>		
	<b>Record all measurements</b>		
<b>Total Pairs Tested</b>	<b>1,100</b>		

# Efficiency – Other Test Times

Test	Pair Type	Time (1 pr) Sec	Time (25 pr) Min	Prs/4 hours	Prs/Hr
<b>User</b> (Spl ID, Loop Current, ANR, QT, mW)	POTS	35.00	14.58	<b>306</b>	77
<b>User</b> (vacant with loads)	Vacant	8.96	3.73	<b>687</b>	172
<b>User</b> (vacant w/ noise)	Vacant	5.28	2.20	<b>833</b>	208
<b>Working</b>	POTS	4.00	1.67	<b>900</b>	225
<b>Vacant</b>	Vacant	2.92	1.22	<b>965</b>	241
<b>Rapid</b>	Vacant	0.92	0.38	<b>1115</b>	279

# Electronic Reports

The screenshot displays the 'ATV Tools' software interface. The window title is 'ATV Tools' and it has a menu bar with 'File', 'Edit', 'View', 'Tools', and 'Help'. Below the menu bar are icons for 'New', 'Delete', and 'Save'. The main interface is divided into several sections:

- Left Panel:** A tree view showing a folder 'WFD' containing a sub-folder '132 REDTAIL'. Under '132 REDTAIL', there is a list of dates and times: '10/24/07 10:18:18', '10/25/07 10:01:15', '10/26/07 12:57:22' (highlighted), '10/26/07 13:09:19', and '10/26/07 13:24:03'. Below this list are several buttons: 'Test Results' (highlighted), 'ATV Configuration', 'Test Configurations', 'Users', 'Locations', 'Central Offices', and 'Communication'.
- Summary Table:** A table with two columns: 'Pair' and 'Result'. It lists pairs 101 through 121 with their corresponding results.
- Test Header Meters Table:** A table with four columns: 'Meter', 'T-R', 'T-G', and 'R-G'. It shows values for 'Volts', 'Ohms', and 'Opens'.
- Tests Table:** A table with two columns: 'Test' and 'Result'. It lists various tests and their results.
- Spectral Plot:** A section at the bottom right, currently empty.

At the bottom of the window, the status bar shows 'ATV-25 Disconnected'.

Pair	Result
101	TR Noise
102	TR Noise
103	Vacant
104	Vacant
105	Short
106	Vacant
107	Vacant
108	Vacant
109	Vacant
110	Vacant
111	Vacant
112	Vacant
113	Open
114	Vacant
115	Vacant
116	Vacant
117	Vacant
118	Open
119	Vacant
120	Vacant
121	Tip Open

Meter	T-R	T-G	R-G
Volts	0.0	0.2	0.2
Ohms	> 10M	> 10M	> 10M
Opens	10.39	10.20	10.24

Test	Result
Assigned Number	----
Load Coil Detection	----
Loop Current (mA)	----
Loss, mw Reference (dB)	----
Noise, Quiet Term (dBm)	----
Special Circuit ID	----
Vacant Noise, PI (dBm)	0 dB
Vacant Noise, TR (dBm)	17 dB

# ATV-25 Applications

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- Pair Identification/Tagging
- Records Verification
- Automatic Number Retrieval
- Bulk Pair Recovery
- New Construction Verification
- Testing Conditioned Cable
- Preliminary Cable Fault Analysis
- Proof of Performance Verification
- End-to-End Pair Confirmation



# ATV-25 Construction Test System

