

Home Page - Telecom Testing and Design Consulting



Leading the Industry in Telephone Product Performance Testing



Home – Testing Services – Product Design Consulting – Test Equipment – About Us – Site Map

INCREASE PROFITS for your company with improved product design performance leading to lower product return rates and faster time to market

AST Technology Labs has extensive expertise and experience in telecommunication product performance testing, product design consulting, and product specifications development.

Telecom Product Performance Testing and Design Consulting Services

- Telephone Devices (VoIP, Analog, Proprietary)
 - Handset - Headset - Speakerphone - Cordless – Answering Machine
- Voice Gateways (VoIP, FXO, FXS)
- Analog Terminal Adaptors (ATA)
- Set-Top Box (STB)
- PBX (VoIP, Analog, Proprietary)
- Telephony Semiconductors

Telecom Performance Standards

TIA-470.110-C	Analog Handset Acoustics
TIA-470.120-C	Analog Headset Acoustics
TIA-470.130-C	Analog Speakerphones Acoustics
TIA-810-B	VoIP Narrowband Telephone Device Acoustics
TIA-920.110-C	VoIP Wideband Handset Acoustics
TIA-920.120-C	VoIP Wideband Acoustics
TIA-920.130-C	VoIP Wideband Acoustics
TIA-504	Hearing Aid Compatibility (HAC)

TIA-1083-A	Analog & VoIP Hearing Aid Compatibility(HAC)
TIA-470.310-D	Cordless RF Range
TIA-470.320-C	Cordless Telephone Operation and Features
TIA-470.230-C	Network Dialing and Signaling
TIA-470.220-D	Alerter Acoustic and Response
TIA-470.210-D	Resistance and Impedance
TIA-777-A	Type 1/Type 2 Caller-ID, VMWI and CAS Detector
TIA-631-A	Radio Frequency Immunity (RFI)
TIA-571-B	Lightning, ESD, AC Power Variations, Drop
TIA-855-A	Stutter Dial Tone Detection
TIA-470.330-C	Answering Machine
TIA-1063	Terminal Adaptor Analog Port
TIA-912-B	Gateway Transmission
TIA-464-C	Analog PBX
TIA-594-B	Multi-Line Telephone Systems
TIA-968-B	Terminal Equipment connection to PSTN
ETSI TBR21	Dual Tone Multi Frequency (DTMF) signalling
ETSI TBR38	Analog Telephone Device
ETSI ETS 300 659-1	On hook data transmission (Caller-ID)
ETSI ETS 300 659-2	Off-hook data transmission (Caller-ID)
ETSI ETS 300 659-3	Data link message and parameter codings (Caller-ID)
China GBT15279	Analog Telephone Device
South Africa TE-001	Analog Telephone Device Acoustics
South Africa TE-002	Telephone Answering Machines and Recording Equipment
South Africa TE-003	Repertory Dialling
South Africa TE-005	Speakerphones
South Africa TE-010	Calling Line Identification (CLI)
AST Internal Standards	<ul style="list-style-type: none"> • Cordless Battery Charging • Voicemail • Answering Machine • Conference Speakerphone • Multi-handset • Feature Functionality • Customer Use Evaluations • Subjective Speech Quality • Echo Performance

Telecom Testing Categories

- Acoustics Testing
- Caller-ID Testing
- Network Interface Testing
- Radio Immunity Testing
- Environmental Testing
- Gateway Testing

Testing Services

Overview



Leading the Industry in Telephone Product Performance Testing



[Home](#) – [Testing Services](#) – [Product Design Consulting](#) – [Test Equipment](#) – [About Us](#) – [Site Map](#)

Overview

VoIP Device And Systems

Telephone Analog Devices

Telephone Digital Devices (VoIP)

Gateways (VoIP, FXO)

Analog Terminal Adaptors (ATA, FXS)

Set-Top Box (STB)

PBX (VoIP, Analog, Proprietary)

International Standards

Product Certification

AST Technology Labs has extensive expertise and experience in telecom product performance testing, product design consulting, and product specifications development.

Please contact us to learn how AST's services can help your company save money with improved product design performance leading to lower product return rates and faster time to market

INCREASED PROFITS FOR AST'S CUSTOMERS

- Lower Product Return Rates
 - A fully qualified design will ALWAYS lead to lower product return rates (lower warranty costs).
 - Increased customer satisfaction (increased sales)
 - Lower customer service costs
 - The *cost of design qualification vs. warranty dollars* saved is a very easily justified project cost for almost any product.
- Faster Time-To-Market
 - Meeting product delivery schedules is key to overall project success.
 - AST can provide support for product specifications up front in the project which may significantly reduce the development time required.
 - AST provides testing and development support during development for project completion.

Testing Services - VoIP Device And Systems



Leading the Industry in Telephone Product Performance Testing



[Home](#) – [Testing Services](#) – [Product Design Consulting](#) – [Test Equipment](#) – [About Us](#) – [Site Map](#)

Overview

VoIP Device And Systems

Telephone Analog Devices

Telephone Digital Devices (VoIP)

Gateways (VoIP, FXO)

Analog Terminal Adaptors (ATA, FXS)

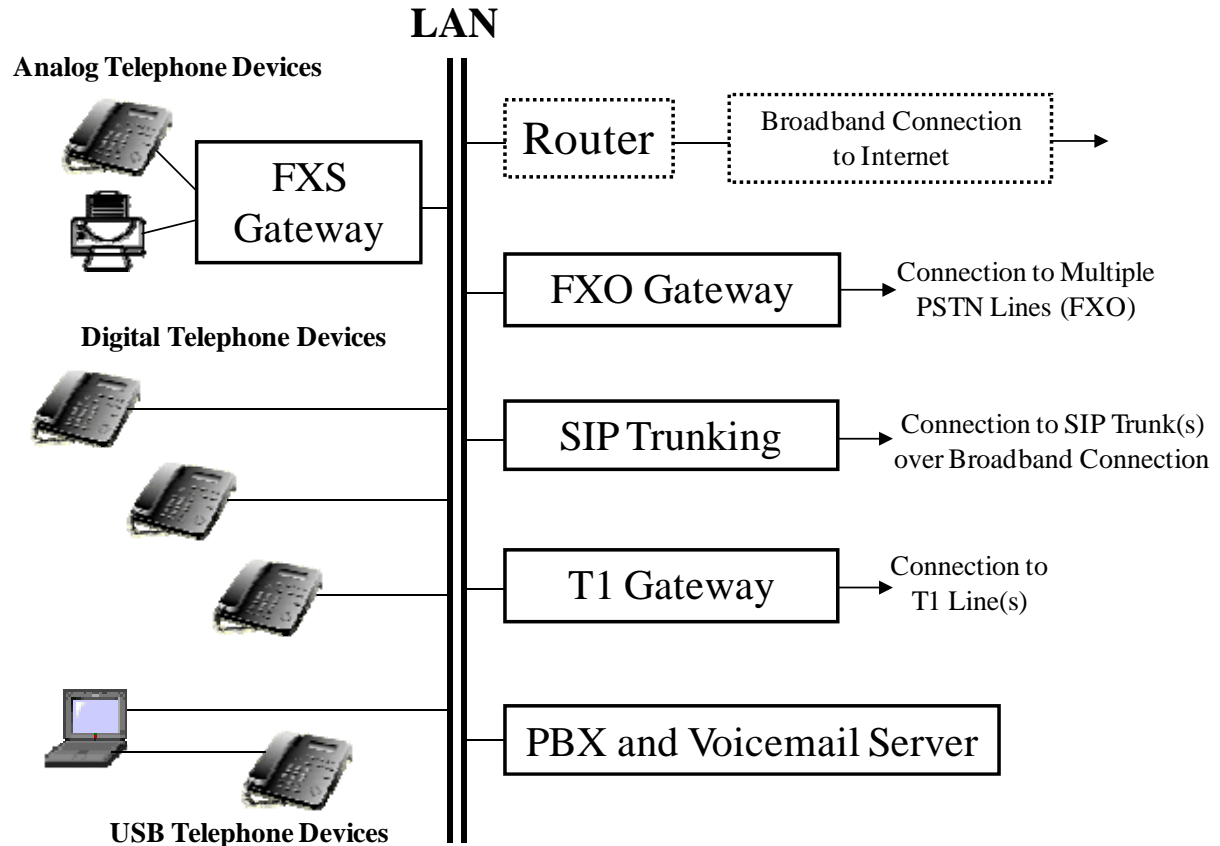
Set-Top Box (STB)

PBX (VoIP, Analog, Proprietary)

International Standards

Product Certification

VoIP device and systems testing includes performance tests for telephones, FXO, FXS, and Voicemail servers hardware components. The testing encompasses a wide range of industry performance standards as well as AST custom test plans to cover all operational aspects of VoIP devices and systems.



Testing Services - Telephone Analog Devices



Leading the Industry in Telephone Product Performance Testing



[Home](#) – [Testing Services](#) – [Product Design Consulting](#) – [Test Equipment](#) – [About Us](#) – [Site Map](#)

Overview

VoIP Device And Systems

Telephone Analog Devices

Telephone Digital Devices (VoIP)

Gateways (VoIP, FXO)

Analog Terminal Adaptors (ATA, FXS)

Set-Top Box (STB)

PBX (VoIP, Analog, Proprietary)

International Standards



Product Certification

Telephone analog device testing includes performance tests for handset, handset and speakerphone telephones and in addition network interface and signaling. Additional performance requirements are provided for cordless, Caller-ID, Answering Machine devices and Environmental considerations.

- Acoustics
 - Handset (TIA-470.110-C)
 - Headset (TIA-470.130-C)
 - Speakerphones (TIA-470.120-C)
 - Conference Speakerphones (TIA-470.120-C, AST Custom)
 - AST Custom test procedures
 - Testing parameters not covered by standards (e.g. Echo)
- Hearing Aid Compatibility (HAC) (TIA-1083-A, TIA-504)
- Cordless
 - RF Range (TIA-470.310-D)
 - Cordless Features (TIA-470.320-C)
 - Talk-time and Standby-time
 - Multi-handset
 - Indicators (low battery, out of range)
 - Battery Charging (AST Custom)
- Network Interface
 - Network Dialing and Signaling (TIA-470.230-C)
 - Alerter Acoustic and Response (TIA-470.220-D)
 - Resistance and Impedance (TIA-470.210-D)
- Caller-ID and VMWI (TIA-777-A)
 - Type 1 On-hook CID
 - Type 2 Off-hook CID
 - VMWI
 - Message Format
 - CAS Detector

	<ul style="list-style-type: none"> ➤ Radio Frequency Immunity (RFI) (TIA-631-A) ➤ Environmental (TIA-571-B) <ul style="list-style-type: none"> ○ Lightning Immunity ○ Electro-Static Discharge (ESD) ○ AC Power Variations ○ Temperature and Humidity ○ Drop Testing ○ Vibration ➤ Stutter Dial Tone Detection (TIA-855-A) ➤ Answering Machine (TIA-470.330-C Draft, AST custom)
--	---

Testing Services - Telephone Digital Devices (VoIP)

	<p>Leading the Industry in Telephone Product Performance Testing</p>  <p style="text-align: center;">Home – Testing Services – Product Design Consulting – Test Equipment – About Us – Site Map</p>
<p>Overview</p> <p>VoIP Device And Systems</p> <p>Telephone Analog Devices</p> <p>Telephone Digital Devices (VoIP)</p> <p>Gateways (VoIP, FXO)</p> <p>Analog Terminal Adaptors (ATA, FXS)</p> <p>Set-Top Box (STB)</p>	<p>Telephone digital device testing includes performance tests for narrowband and wideband handset, handset and speakerphone telephones and in addition network interface and signaling. Additional performance requirements are provided for cordless, Caller-ID and Environmental considerations.</p> <ul style="list-style-type: none"> ➤ Acoustics <ul style="list-style-type: none"> ○ Handset (TIA-810-B, TIA-920.110-A) ○ Headset (TIA-810-B, TIA-920.130-A) ○ Speakerphones (TIA-810-B, TIA-920.120-A) ○ Conference Speakerphones (TIA-810-B, TIA-920.120-A, AST Custom) ○ AST Custom test procedures <ul style="list-style-type: none"> ▪ Specialized, proprietary products ▪ Testing parameters not covered by standards (e.g. Echo) ➤ Hearing Aid Compatibility (HAC) (TIA-1083-A, TIA-504) ➤ Cordless <ul style="list-style-type: none"> ○ RF Range (TIA-470.310-D) ○ Cordless Features (TIA-470.320-C)

<p>PBX (VoIP, Analog, Proprietary)</p> <p>International Standards</p> <p>Product Certification</p>	<ul style="list-style-type: none"> ▪ Talk-time and Standby-time ▪ Multi-handset ▪ Indicators (low battery, out of range) <ul style="list-style-type: none"> ○ Battery Charging (AST Custom) <p>➤ Network Interface</p> <ul style="list-style-type: none"> ○ Hookswitch Timing (Disconnect and Flash) ○ Call Progress Signals Generation (Call state and RFC 2833) ○ Acoustic Ringer Performance ○ DTMF and Call Set-up Processing ○ Caller-ID Reception and Display ○ Device Response Timing to User Inputs Performance <p>➤ Caller-ID and VMWI (TIA-777-A)</p> <p>➤ Radio Frequency Immunity (RFI) (TIA-631-A)</p> <p>➤ Environmental (TIA-571-B)</p> <ul style="list-style-type: none"> ○ Lightning Immunity ○ Electro-Static Discharge (ESD) ○ AC Power Variations ○ Temperature and Humidity ○ Drop Testing ○ Vibration
---	--

Testing Services - Gateways (VoIP, FXO)

	<p>Leading the Industry in Telephone Product Performance Testing</p>  <p>Home – Testing Services – Product Design Consulting – Test Equipment – About Us – Site Map</p>
<p>Overview</p> <p>VoIP Device And Systems</p> <p>Telephone Analog Devices</p>	<p>Gateway device testing includes performance tests for analog and digital interfaces. Additional performance requirements are provided for Environmental considerations.</p> <ul style="list-style-type: none"> ➤ Idle State: FXO Port Operational Performance <ul style="list-style-type: none"> ○ Electrical Interface (TIA-470.210-D)

**Telephone Digital Devices
(VoIP)**

Gateways (VoIP, FXO)

**Analog Terminal Adaptors
(ATA, FXS)**

Set-Top Box (STB)

**PBX (VoIP, Analog,
Proprietary)**

International Standards

Product Certification

- Impedance and Resistance
- DC Voltage Operating Range
- Non-Response to PSTN Line Maintenance Signals
- Operation When First Connected to a Telephone Line (TIA-968-B)
- Visual Message Waiting Indicator (VMWI) Reception (TIA-777-A)
- Cross-talk Protection Performance (TIA-912-B)
- Alerting State: FXO Port Operational Performance
 - Electrical Interface (TIA-470.210-D)
 - Ring Detection (TIA-470.220-D)
 - Auto-Answer Timing
 - Caller-ID Reception (TIA-777-A)
- Talk State: FXO Port Operational Performance
 - Electrical Interface (TIA-470.210-D)
 - Non-Response to DC Signals
 - Parallel Phone Off-hook
 - Line State Transitions – Port Release after BYE: Message
 - FXO Port Selection for Outgoing Calls and Disconnect Timing
 - Emergency Call (911) FXO Port Takeover
 - Dialtone and Stutter Dialtone Signal Detection
 - FXO Port Speech Path Connection Delays
 - Flash Signal Generation
 - Detection of Timed Disconnect Signal (TDS)
 - Talk State Transition Interruption From Ring-Trip Delays
 - Caller-ID With Call Waiting Reception
 - Call Waiting Reception
 - Call Progress Signals Detection
 - Call Progress Signals Generation (Call state and RFC 2833)
 - Cross-talk Protection (TIA-912-B)
 - DTMF Detection and Generation
 - Speech Path (TIA-912-B)
 - Echo Control
 - Data Transmission (TIA-912-B)
- Radio Frequency Immunity (RFI) (TIA-631-A)

- Environmental (TIA-571-B)
 - Lightning Immunity
 - Electro-Static Discharge (ESD)
 - AC Power Variations
 - Temperature and Humidity
 - Drop Testing
 - Vibration

Testing Services - Analog Terminal Adaptors (ATA, FXS)



Leading the Industry in Telephone Product Performance Testing



Home – **Testing Services** – Product Design Consulting – Test Equipment – About Us – Site Map

Overview

VoIP Device And Systems

Telephone Analog Devices

Telephone Digital Devices (VoIP)

Gateways (VoIP, FXO)

Analog Terminal Adaptors (ATA, FXS)

Set-Top Box (STB)

Analog Terminal Adaptor device testing includes performance tests for analog and digital interfaces. Additional performance requirements are provided for Environmental considerations.

- Idle State: FXS Port Operational Performance (TIA-1063, TIA-464-C)
 - Transitions to the Idle State
 - Idle State Operations
 - Stopping Signal Generation Upon Entering the Idle State
 - DC Voltage and Off-hook Termination Detection
 - Immunity to Short Off-hook Terminations
 - Crosstalk Interference
 - VMWI Feature Performance
- Alerting State: FXS Port Operational Performance (TIA-1063, TIA-464-C)
 - Alerting State Transitions
 - Alerting State Operations
 - Alerting State Timings After Receiving an INVITE: Message
 - FXS Port Ringer Drive and DC Voltage
 - Ringing Signal Timing Patterns

**PBX (VoIP, Analog,
Proprietary)**

International Standards

Product Certification

- Ring Trip (Off-hook Termination) Detection
- Caller-ID Feature Performance
- Originating Call State: FXS Port Operational Performance (TIA-1063, TIA-464-C)
 - Originating-Call State Transitions
 - Originating-Call State Operations
 - DC Voltage and Current
 - DTMF Receiver Response Timing
 - Dial Tone or Stutter Dial Tone Generation
 - Removal of Dial Tone After DTMF Reception
 - Dialing Plan and Call Set-up Timing
 - Response to SIP Response Code Messages after INVITE:
 - Originating-Call State Time-Out Procedures
 - Disconnect Signal Detection
 - FXS Port Off-Hook Voice-band Impedance Return Loss
 - DTMF Receiver Performance
- Talk State: FXS Port Operational Performance (TIA-1063, TIA-912-B, TIA-464-C)
 - Talk State Transitions
 - Talk State Operations
 - FXS Port DC Voltage and Current
 - FXS Port Off-Hook Voice-band Impedance Return Loss
 - Flash Signal and Disconnect Signal Detection
 - Timed Disconnect Signal Generation
 - Call Waiting Feature
 - 3-Way Calling Feature
 - Echo Cancellation
 - Reflected Echo Cancellation
 - Crosstalk Interference
 - Speech Path Performance
 - Data Transmission Performance
 - DTMF Generation Performance
- Call Progress Signals Generation Performance (TIA-1063, TIA-464-C)
 - Dial Tone
 - Stutter Dial Tone
 - Recall Dial Tone
 - Ringback Tone
 - Busy Tone
 - Reorder Tone
 - Call Waiting Tone
 - Special Information Tone
 - Receiver Off-hook Warning Tone

- Talk State RFC2833 Call Progress Signal Generation
- Radio Frequency Immunity (RFI) (TIA-631-A)
- Environmental (TIA-571-B)
 - Lightning Immunity
 - Electro-Static Discharge (ESD)
 - AC Power Variations
 - Temperature and Humidity
 - Drop Testing
 - Vibration

Testing Services - Set-Top Box (STB)



Leading the Industry in Telephone Product Performance Testing



Home – **Testing Services** – Product Design Consulting – Test Equipment – About Us – Site Map

Overview

VoIP Device And Systems

Telephone Analog Devices

Telephone Digital Devices (VoIP)

Gateways (VoIP, FXO)

Analog Terminal Adaptors (ATA, FXS)


Set-Top Box (STB)

Set-Top Box (STB) device testing includes performance tests for analog network interface and signaling. Additional performance requirements are provided for Environmental considerations.

- Network Interface
 - Network Dialing and Signaling (TIA-470.230-C)
 - Alerter detection and non-response (TIA-470.220-D)
 - Resistance and Impedance (TIA-470.210-D)
 - DC Signaling and Events
- Caller-ID and VMWI (TIA-777-A)
 - Type 1 On-hook CID
 - VMWI
 - Message Format
- Radio Frequency Immunity (RFI) (TIA-631-A)

<p>PBX (VoIP, Analog, Proprietary)</p> <p>International Standards</p> <p>Product Certification</p>	<ul style="list-style-type: none"> ➤ Environmental (TIA-571-B) <ul style="list-style-type: none"> ○ Lightning Immunity ○ Electro-Static Discharge (ESD) ○ AC Power Variations ○ Temperature and Humidity ○ Drop Testing ○ Vibration
---	---

Testing Services - PBX (VoIP, Analog)

	<p>Leading the Industry in Telephone Product Performance Testing</p>  <p>Home – <u>Testing Services</u> – Product Design Consulting – Test Equipment – About Us – Site Map</p>
<p>Overview</p> <p>VoIP Device And Systems</p> <p>Telephone Analog Devices</p> <p>Telephone Digital Devices (VoIP)</p> <p>Gateways (VoIP, FXO)</p> <p>Analog Terminal Adaptors (ATA, FXS)</p> <p>Set-Top Box (STB)</p>	<p>PBX System and component testing includes performance tests for Gateway and Network interface and signaling. Additional performance requirements are provided for Environmental considerations.</p> <ul style="list-style-type: none"> ➤ System Features Performance <ul style="list-style-type: none"> ○ Auto Attendant ○ Music On-Hold ○ Page ○ Intercom ○ Hold ○ Transfer ○ Conference ○ Call Routing ○ Provisioning and Configuration ➤ Voicemail (TIA-470.330-C) <ul style="list-style-type: none"> ○ Voice Prompts ○ Outgoing Messages (OGM) ○ Incoming Messages (ICM)

<p>PBX (VoIP, Analog, Proprietary)</p> <p>International Standards</p> <p>Product Certification</p>	<ul style="list-style-type: none"> ○ AGC Operation ○ Silence Detection ○ DTMF Detection ○ Remote Access ➤ Digital Telephones Devices ➤ Analog Telephone Devices ➤ Gateways (VoIP, FXO) ➤ Analog Terminal Adaptors (ATA, FXS) ➤ Radio Frequency Immunity (RFI) (TIA-631-A) ➤ Environmental (TIA-571-B) <ul style="list-style-type: none"> ○ Lightning Immunity ○ Electro-Static Discharge (ESD) ○ AC Power Variations ○ Temperature and Humidity ○ Drop Testing ○ Vibration
---	---

Testing Services - International Standards

	<p>Leading the Industry in Telephone Product Performance Testing</p>  <p>Home – Testing Services – Product Design Consulting – Test Equipment – About Us – Site Map</p>
<p>Overview</p> <p>VoIP Device And Systems</p> <p>Telephone Analog Devices</p> <p>Telephone Digital Devices (VoIP)</p>	<p>International Testing Services:</p> <p>AST Technology Labs supports the testing of international telephony standards including but not limited to ETSI, South Africa, China, and Mexico. If you do not see your specific standard listed below please contact us.</p> <ul style="list-style-type: none"> • ETSI <ul style="list-style-type: none"> ○ TBR38, Attachment requirements for a terminal equipment incorporating an analogue handset function to the analogue interface of the PSTN in Europe ○ ES 203 038, Speech and multimedia Transmission Quality (STQ);Requirements and tests methods for terminal equipment incorporating a handset when connected to the analogue interface of the PSTN

Gateways (VoIP, FXO)

**Analog Terminal
Adaptors (ATA, FXS)**

Set-Top Box (STB)

**PBX (VoIP, Analog,
Proprietary)**

International Standards

Product Certification

- **TBR21**, Attachment requirements for pan-European approval for connection to the analogue Public Switched Telephone Networks (PSTN) of TE in which network addressing by means of Dual Tone Multi Frequency (DTMF) signalling
- **ES 203 021-1**, Access and Terminals (AT);Harmonized basic attachment requirements for Terminals for connection to analogue interfaces of the Telephone Networks;Update of the technical contents of TBR 021, EN 301 437, TBR 015, TBR 017;Part 1: General aspects.
- **ES 203 021-2**, Access and Terminals (AT);Harmonized basic attachment requirements for Terminals for connection to analogue interfaces of the Telephone Networks;Update of the technical contents of TBR 021, EN 301 437, TBR 015, TBR 017;Part 2: Basic transmission and protection of the network from harm.
- **ES 203 021-3**, Access and Terminals (AT);Harmonized basic attachment requirements for Terminals for connection to analogue interfaces of the Telephone Networks;Update of the technical contents of TBR 021, EN 301 437, TBR 015, TBR 017;Part 3: Basic Interworking with the Public Telephone Networks.
- **ETS 300 659-1**, Subscriber line protocol over the local loop for display (and related) services; Part 1: On hook data transmission (Caller-ID)
- **ETS 300 659-2**, Subscriber line protocol over the local loop for display (and related) services; Part 2: Off-hook data transmission (Caller-ID)
- **ETS 300 659-3**, Subscriber line protocol over the local loop for display (and related) services; Part 3: Data link message and parameter codings (Caller-ID)
- **South Africa**
 - **TE-001**, Standard Specification for Telephone Attachments for Connection to the Public Switched Telephone Network
 - **TE-002**, Functional Requirements for Telephone Answering Machines and Recording Equipment
 - **TE-003**, Functional Requirements for Repertory Dialling Equipment
 - **TE-005**, Functional Requirements for Loudspeaking Equipment
 - **TE-010**, Functional Requirements for Calling Line Identification (CLI) Customer Premises Equipment (CPE)
- **China**
 - **GBT15279**, The Specifications of Automatic Telephone Set
- **Mexico**
 - **NOM-EM-151-SCTI-1998**, Interface to public networks for terminal equipment (NIRPET)

Testing Services - Product Certification



Leading the Industry in Telephone Product Performance Testing



[Home](#) – [Testing Services](#) – [Product Design Consulting](#) – [Test Equipment](#) – [About Us](#) – [Site Map](#)

Overview

VoIP Device And Systems

Telephone Analog Devices

Telephone Digital Devices (VoIP)

Gateways (VoIP, FXO)

Analog Terminal Adaptors (ATA, FXS)

Set-Top Box (STB)

PBX (VoIP, Analog, Proprietary)

International Standards

Product Certification

Certification Services:

AST Technology Labs can provide telephone equipment testing certification services using customer requirements.

AST Technology Labs was selected to provide telephony certification testing for Microsoft Response Point systems and components. Please Click on the Link Below to Learn More About the Response Point Telephony Certification Program

[Response Point Telephony Certification Program](#)

Product Development

Consulting



Leading the Industry in Telephone Product Performance Testing



[Home](#) – [Testing Services](#) – [Product Design Consulting](#) – [Test Equipment](#) – [About Us](#) – [Site Map](#)

Consulting

Seminars and Training

Consulting:

AST Technology Labs Inc. provides consulting for product design and development.

- Specifications and Test Plans
 - RFP technical consulting
 - Detailed product specifications
 - Detailed product development testing plans
- US standards based training for product developers
- Product testing and consulting during the design stage
 - Design consulting with product developers
 - Design teams on-site at AST for design analysis and troubleshooting
 - Lab setup assistance and correlation testing
- Final product testing before production start
- Instruction Booklet review, editing, and writing
- Production Quality Assurance test plans and QA sample testing

Product Development - Seminars and Training



Leading the Industry in Telephone Product Performance Testing



[Home](#) – [Testing Services](#) – [Product Design Consulting](#) – [Test Equipment](#) – [About Us](#) – [Site Map](#)

Consulting

Seminars and Training

Seminars and Training:

AST Technology Labs Inc. provides seminars and training via custom designed seminars for large and small groups, and for more informal one-on-one meetings. The topics of these meetings are specified by our customers.

Test Equipment

Overview



Leading the Industry in Telephone Product Performance Testing



[Home](#) – [Testing Services](#) – [Product Design Consulting](#) – **[Test Equipment](#)** – [About Us](#) – [Site Map](#)

Overview

TSA 6000®

ATAS™

ART™

Test Equipment Products:

AST Technology Labs has developed state-of-the-art Automated Test Equipment in order to provide conformance testing services. This equipment is now available to CPE manufacturers and suppliers for design verification and quality assurance self-testing labs.

- **TSA 6000®**, A Caller ID and Telephone signal recording and analysis system.
- **ATAS™**, Automated Telephony Audit System tester. The solution for your automated Caller-ID testing requirements built on advanced technologies.
- **ART™**, Automated Range Test system. A turnkey system for range testing cordless telephones and other wireless devices that eliminates outdoor range test problems.

Test Equipment - TSA6000



Leading the Industry in Telephone Product Performance Testing



[Home](#) – [Testing Services](#) – [Product Design Consulting](#) – **[Test Equipment](#)** – [About Us](#) – [Site Map](#)

Overview

TSA 6000®

ATAS™

ART™

The TSA 6000® is a USB device that provides complete analysis of telephone signals including Caller-ID protocols, FXS/FXO interface testing, DTMF, power ringing, single frequency interference noise, call progress tones, noise and more. The TSA 6000® is FCC, CSA C/US and CE approved.

This product can be easily used by all field and lab personnel. Please visit www.TSA6000.com to see all of the TSA 6000® key features, to review its software or to download a demonstration.

FOR USE IN:

- VoIP and Set top box terminal adaptors testing
- FXS and FXO port testing
- Telephone Line and Caller-ID Signaling Verification
- Telephone Line and Caller-ID Troubleshooting
- Central Office Signaling Analysis
- Digital Loop Carrier (DLC) Signaling Verification (GR-57)
- CPE Troubleshooting
- Network Equipment Installation Verification
- ILEC / CLEC Signal Interface Troubleshooting
- Caller ID Loop Surveys
- Wireline SMS (ETSI ETS 100 900, ETSI ETS 100 901)
- ADSI Protocol Verification (SR-1273, SR-2461)
- Russian ANI (Russian Caller ID) Verification
- ADEMCO Alarm Protocol Verification
- Plus many other uses





Leading the Industry in Telephone Product Performance Testing



[Home](#) – [Testing Services](#) – [Product Design Consulting](#) – **[Test Equipment](#)** – [About Us](#) – [Site Map](#)

Overview

TSA 6000®

ATAS™

ART™

ATAS™, Automated Telephony Audit System tester. The solution for your automated Caller-ID testing requirements built on advanced technologies

ATAS™
Automated Telephony Audit System Tester



- **FOR USE IN:**
 - Quality Assurance Testing
 - Manufacturing Audit Testing
 - Product Life Testing
 - Design Regression Testing
- **KEY FEATURES:**
 - Easily extended test suites using the ATAS™ signal script language
 - Sub-second image analysis from signal play to database logging
 - Simple one-time learning for any device model
 - State-of-the-art mechanical positioning table and light chamber for repeatable and robust testing of device models
 - Complete with hardware and software for data archiving and backup
 - Software support for remote monitoring of ATAS™ Windows® NT based workstations
- **INCLUDES:**
 - Comprehensive analog signal generation hardware for Caller-ID and telephony testing
 - Automated Machine Vision solution that provides hands-off test suite execution and reporting



Leading the Industry in Telephone Product Performance Testing



[Home](#) – [Testing Services](#) – [Product Design Consulting](#) – **[Test Equipment](#)** – [About Us](#) – [Site Map](#)

Overview

TSA 6000®

ATAS™

ART™

ART™, Automated Range Test system. A turnkey system for range testing cordless telephones and other wireless devices that eliminates outdoor range test problems.

• **FOR USE IN:**

- Quality Assurance
- Production Line Audits
- Design Analysis
- Comparison Testing
- Building Consumer Confidence

• **KEY FEATURES:**

- Four Models - 900 MHz, 2.4GHz, 5.8 GHz and 1.9 GHz (DECT 6.0)
- Controlled Testing Environment
- Accurate Audio Quality Measurements (SINAD)
- No Dependence on Weather
- Shielded from External Radio Interference
- Repeatable test results
- No Need for a Large, Flat Unobstructed Field
- Isolation chambers eliminate external radio interference
- Test transmitter-to-receiver and receiver-to-transmitter
- Calibrated to industry standard radio propagation model
- Complete test results in less than two minutes
- Graphical color output to display and printer
- Repeatable tests with a controlled environment
- Testing is performed indoors in the lab or factory

• **THE COMPLETE ART™ SYSTEM INCLUDES:**

ART™

ART™ System
Automated Range Test System

(Draft TIA-470.xxx-C)



- | | |
|--|--|
| | <ul style="list-style-type: none">○ Two anechoic test chambers for RF isolation○ Windows® based system controller○ High quality Hewlett Packard RF system components interfaced to system controller○ Acoustic interface hardware for handset coupling○ Telephone line interface hardware with audio interface○ Configurable system software (including pass/fail analysis) |
|--|--|

About Us

Overview



Leading the Industry in Telephone Product Performance Testing



[Home](#) – [Testing Services](#) – [Product Design Consulting](#) – [Test Equipment](#) – **[About Us](#)** – [Site Map](#)

Overview

Executive Team

Client List

Standards Development

Labs and Facilities

Contact Us

AST Technology Labs has extensive expertise and experience in telecom product performance testing, product design consulting, and product specifications development.

Please contact us to learn how AST's services can help your company save money with improved product design performance leading to lower product return rates and faster time to market

- Telecom product testing services and reports:
 - Telephone Devices (VoIP, Analog, Proprietary)
 - Gateways (VoIP, FXO, FXS)
 - Analog Terminal Adaptors
 - Set-Top Box (STB)
 - PBX (VoIP, Analog, Proprietary)
 - International standards
 - Product Certification
- Telecom product design consulting
- Training services for standards, testing and telephone test equipment operation.
- Telecom standards development (TIA)

About Us - Executive Team



Leading the Industry in Telephone Product Performance Testing



[Home](#) – [Testing Services](#) – [Product Design Consulting](#) – [Test Equipment](#) – **[About Us](#)** – [Site Map](#)

[Overview](#)

[Executive Team](#)

[Client List](#)

[Standards Development](#)

[Labs and Facilities](#)

[Contact Us](#)

Executive Team



President: James Bress

A former Bellcore employee with over 25 years experience in telephone equipment testing and design, and network services. Mr. Bress has authored key Bellcore Caller-ID and CPE requirements, and is currently a member (serving as Chairman and Editor) of several TIA TR 41 sub-committees and working groups developing telephone equipment standards.



Vice President of Testing Services: Don McKinnon

A former Thomson employee with over 22 years experience in telephone equipment testing and design. Mr. McKinnon is currently a member (serving as Chairman and Editor) of several TIA TR 41 sub-committees and working groups developing telephone equipment standards.

About Us - Client List



Leading the Industry in Telephone Product Performance Testing



Home – Testing Services – Product Design Consulting – Test Equipment – **About Us** – Site Map

Overview

AST Technology Labs provides services to telecommunication service providers, U.S. and International manufacturers of telephone and network equipment, and semiconductor devices.

Executive Team

Client List

Standards Development

Labs and Facilities

Contact Us

- **Service Providers**

AT&T [SBC / Bell South]	Embarq [Sprint]	Qwest	Verizon
----------------------------	--------------------	-------	---------

- **Product Manufacturers**

Aastra	D-Link	Microsoft	SNI
Alcatel	Echostar	Multicom	Sony
Ascalade	ESP	Nortel	Tecom
AT&T	GTC	Notify Technologies	Teledex
Belco	Honor Tone	Panasonic	Telefield
Casio Phonemate	HP	Philips	Telematrix
CCT	IDT	Plantronics	Thomson (GE-RCA)
Cidco	International Resources	Quanta	TT Systems
CIDmate	Inventel	Rayson	Uniden
ClassCo	Kingtronics	RTX	VTech
Consumerware	Lionda	Samsung	Wave
Dell	Lucent	Siemens	Wyle Labs
Direct TV			

- **Semiconductor Manufacturers**

Conexant (Rockwell)	NPC	Realtek / M-Square	Telechips
Marvell Semiconductors	Philips	SI Labs	Zilog
Motorola	Pijnenburg		

About Us - Standards Development



Leading the Industry in Telephone Product Performance Testing



[Home](#) – [Testing Services](#) – [Product Design Consulting](#) – [Test Equipment](#) – **[About Us](#)** – [Site Map](#)

Overview

Executive Team

Client List

Standards Development

Labs and Facilities

Contact Us

AST Technology Labs is actively involved with the telephony industry as a member of the Telecommunications Industry Association (TIA) and is involved in committee TR41, User Premises Telecommunications Requirements.

- Vice-Chairman TIA-TR-41.3 (Telephones) Subcommittee (2007 - Present): Bress
- Chairman TIA-TR-41.3 (Telephones) Subcommittee (2000 - 2007): Bress
- Chairman TIA-TR-41.3.2: Automatic Stutter Dialtone Detection (TIA-855): Bress
- Chairman TIA-TR-41.3.9: Telephone Magnetic Noise (TIA-1083): Bress
- Chairman of TIA-TR-41.3.5,6,7,8 Telephone Electro-acoustics (TIA-470-C): McKinnon
- Chairman and Editor TIA-TR-41.3: Analog Terminal Adaptor (TIA-1063): Bress
- Chairman and Editor TIA-TR-41.7.4: Environmental (TIA-571-B): McKinnon
- Chairman and Editor TIA-TR-41.7.3: Radio Frequency Interference (TIA-631-A): McKinnon
- Major contributor to TIA-TR-41.3.1: Caller-ID (TIA-777-A): Bress / McKinnon
- Editor TIA-TR-41.3.12: Telephone Answering Machine (TIA-470.330-C): Bress
- Editor TIA-TR-41.3.10: Speakerphone Telephone (TIA-470.120-C): Bress, McKinnon
- Editor TIA-TR-41.3.9: Cordless Features (TIA-470.320-C): Bress
- Editor TIA-TR-41.3.9: Cordless Telephone Range Measurement Procedures (TIA-470.310-C): Bress
- Editor TIA-TR-41.3.9: Cordless Telephone Range Measurement Procedures (TIA-470.310-D): McKinnon
- Editor TIA-TR-41.3.9: Telephone Magnetic Noise (TIA-1083-A): McKinnon
- Editor TIA-TR-41.3.3 VoIP Telephone Acoustics (TIA-920-A): McKinnon

About Us - Labs and Facilities



Leading the Industry in Telephone Product Performance Testing



[Home](#) – [Testing Services](#) – [Product Design Consulting](#) – [Test Equipment](#) – **[About Us](#)** – [Site Map](#)

[Overview](#)

[Executive Team](#)

[Client List](#)

[Standards Development](#)

[Labs and Facilities](#)

[Contact Us](#)

Location:

AST Technology Labs is located in Melbourne FL, 4.2 miles (6.7 km) from the Melbourne International Airport (MLB) and 60 miles (97 km) from the Orlando International Airport (MCO).

Our Facility:

8000 square foot (743 square meters) of office and laboratory space.

- Telephone Device Acoustics Lab
- Network Signaling and Interface Lab
- VoIP Lab
- RFI Lab
- Caller ID Labs
- Environmental Labs
- Mechanical Lab
- Cordless RF Range Test Labs
- Battery Test Lab

About Us - Contact Us



Leading the Industry in Telephone Product Performance Testing



Home – Testing Services – Product Design Consulting – Test Equipment – [About Us](#) – Site Map

Overview

Executive Team

Client List

Standards Development

Labs and Facilities

[Contact Us](#)

AST Technology Labs

Phone: 321-254-8118

Fax: 321-254-9511

Email: jrbress@asttechlabs.com

1430 Sarno Road
Melbourne, FL 32935

Site Map



Leading the Industry in Telephone Product Performance Testing



Home – Testing Services – Product Design Consulting – Test Equipment – About Us [Site Map](#)

Home Page - Telecom Testing and Design Consulting	1
Testing Services	4
Overview	4
Testing Services - VoIP Device And Systems	5
Testing Services - Telephone Analog Devices	6
Testing Services - Telephone Digital Devices (VoIP)	7
Testing Services - Gateways (VoIP, FXO)	8
Testing Services - Analog Terminal Adaptors (ATA, FXS)	10
Testing Services - Set-Top Box (STB)	12
Testing Services - PBX (VoIP, Analog)	13
Testing Services - International Standards	14
Testing Services - Product Certification	16
Product Development	17
Consulting	17
Product Development - Seminars and Training	18
Test Equipment	19
Overview	19
Test Equipment - TSA6000	20
Test Equipment - ATAS	21
Test Equipment – ART	22
About Us	24
Overview	24
About Us - Executive Team	25
About Us - Client List	26
About Us - Standards Development	27
About Us - Labs and Facilities	28
About Us - Contact Us	29
Site Map	30