

# ***Microsoft Response Point Telephony Performance Certification Program***

# *What is Response Point?*

- **User friendly IP-PBX system**
  - Base Unit
  - FXO Gateway (connection to the PSTN)
  - T1 Gateway
  - SIP Trunking Gateway (connection to VoIP services)
  - FXS Gateway (connection to legacy telephones / fax)
  - IP Telephones (special RP features)
  - RP Administrator software application
  - RP Assistant software for user's applications
- **Connected to an Ethernet LAN**
- **Easy to configure**
- **Integration with other Microsoft applications (e.g., Outlook)**
- **Includes speech recognition for connecting calls**
- **Voicemail (with voicemail-to-email feature)**
- **Auto-Attendant**

# *What is the Response Point Telephony Performance Certification Program?*

- **Verify the telephony design performance**
- **System testing and component testing**
- **Microsoft design quality process**
  - Required to pass and obtain Microsoft approval before using the “Response Point” trademark
  - Tested and certified before the RP system is in mass production and offered for sale
  - Performance requirements provided by Microsoft developed jointly with AST
- **Goals:**
  - Maintain customer satisfaction
  - Reduce customer trouble calls
  - Increase sales of Response Point systems
  - Speed time-to-market
  - Minimize product return rates and warranty costs

# *RP Certification Testing* *Parameters Outline*

- System testing and component testing
- Audio performance (levels, echo, noise, etc)
- Caller-ID reception
- System network connections (interfacing, signaling, and control)
  - FXO Gateway
  - SIP Trunking telephony
  - T1 Gateway
- FXS Gateway
  - Telephone signaling interface
  - DTMF receiver
- Base Unit
  - Voicemail speech signaling
  - System speech prompts
  - DTMF receiver (voicemail, remote access, routing)
- Environmental
  - Lightning surge immunity
  - ESD immunity
  - AC Power variations immunity
  - RFI (Radio Frequency Immunity)

# *Outline of the RP Certification Testing Parameters (cont'd)*

- **Telephone Devices**
  - Handset
  - Speakerphone
  - Headset
  - Cordless
    - RF Range
    - Talk-time and standby-time
    - Battery charging (not under or over charging)
    - Operational features (e.g., handset registration to base)
  - Audio and acoustics
  - Caller-ID displays and call logs
  - Hearing Aid Compatibility (HAC) of handsets
  - Environmental
    - ESD immunity
    - AC Power variations immunity
    - RFI (Radio Frequency Immunity)
    - Drop immunity
  - POE (Power Over Ethernet)

# *AST Technology Labs as Microsoft RP Business Partner*

- **AST Established 1995**
  - Long established relationships with RBOCs / Telcos
  - Long established relationships with telephone equipment developers and manufacturers
  - TIA telecom standards development leadership
- **Extensive Telecommunication Experience**
  - Telecom device performance testing
  - Product specifications
  - Product development and design consulting
  - Design Quality Assurance (DQA)

# *AST Business Overview*

- **Comprehensive Telephone Design Test Lab**
  - Wireline (PSTN) telephone equipment
  - VoIP telephone equipment
- **Independent telephone test lab**
  - US Telcos (AT&T [SBC / BellSouth], Verizon, Qwest, Embarq (Sprint))
  - International telephone development teams and manufacturers
  - Semiconductor manufacturers
- **Competitive Product Analysis Testing**
- **Quality Assurance Testing**
- **Product development team consulting**
- **Training (standards, telephone testing, etc.)**
- **Custom development of telephone test equipment**
- **TIA Standards leadership**
- **Testing and consulting for new and niche products**  
(e.g. VoIP, hearing impaired, speakerphone, headset, answering machine, ATA, VoIP PBX...)

# *AST PSTN CPE Testing Summary*

- **Standardized Testing**
  - Electro-Acoustic (TIA-470-C)
  - Cordless Range (TIA-470-C)
  - Cordless Features (TIA-470-C)
  - Environmental (TIA-571-B)
  - Radio Frequency Immunity (TIA-631-A)
  - Caller-ID (TIA-777-A)
  - Automatic Stutter Dial Tone Detection (TIA-855)
  - Hearing Aid Compatibility (TIA-504 / TIA-1083)
  - Terminal Adapter Analog Port (TIA-1063)
- **Non-Standardized Testing** *(AST Custom Test Plans)*
  - Speakerphone, Headset
  - Voicemail / DTAM
  - Hearing impaired
  - Multi-handset and cordless
  - KSU-Less multi-line
  - Cordless battery charging
  - MMI (user interface)
  - Instruction book review
  - others

# *AST VoIP CPE Testing Summary*

## VoIP CPE Standards

- TIA-810-B, Transmission Requirements for Narrowband Digital Telephones
- TIA-920-A, Transmission Requirements for Wideband Digital Telephones  
(still under development at TIA)
- TIA-1083 Digital-RF Cordless Hearing Aid Compatibility
- TIA-1063 Analog Telephone Port Requirements for Packet-based User Premises Terminal Adapters

## *AST's TIA Standards Leadership*

- Chairman TIA-TR-41.3 (Telephones) Subcommittee (since 2000): Bress
- Chairman TIA-TR-41.3.9 working group for Telephone Magnetic Noise standard (TIA-1083): Bress
- Editor TIA-TR-41.3.12 working group for Telephone Answering Machine standard (TIA-470.330-C): Bress
- Editor TIA-TR-41.3.10 working group for Hands-free standard (TIA-470.120-C): Bress
- Editor TIA-TR-41.3.9 working group for Cordless Features standard (TIA-470.320-C): Bress
- Chairman TIA-TR-41.7.4 working group for Environmental standard (TIA-571-B): McKinnon
- Chairman TIA-TR-41.7.3 working group for Radio Frequency Interference standard (TIA-631-A): McKinnon
- Chairman of all TIA-TR-41.3.(5,6,7,8) working groups for Electro-acoustics and Network Interface standards (TIA-470.xxx-C) (revision of TIA-470-B): McKinnon
- Editor TIA-TR-41.3.9 working group for Cordless Telephone Range Measurement Procedures standard (TIA-470.310-C): Bress
- Chairman TIA-TR-41.3.2 working group for Automatic Stutter Dialtone Detection standard (TIA-855): Bress
- Major contributor to TIA-TR-41.3.1 working group for Caller-ID standard (TIA-777-A): Bress / McKinnon

# *AST's Product Development Consulting*

- **Specifications and Test Plans**
  - RFP technical consulting
  - Detailed product specifications consulting
  - Detailed product development testing plans consulting
- **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
  - Final product testing before production start
- **Instruction Booklet review, editing, and writing**
- **Production Quality Assurance test plans and QA sample testing**

# *AST's Custom Test Systems*

## Caller-ID

- TTTST™ System (custom CAS Talkoff/Talkdown, automated)
- ATAS™ System (custom, automated)
- ASTT™ Manual Caller ID (custom, manual)

## Electro-Acoustics & Network Interface

- Electro-Acoustics Test System (custom, semi-automated)
- SoundCheck Audio-Acoustics Test System

## Cordless Range

- ART™ System (custom, automated)

## Automatic Stutter Dialtone Detection

- AST - SDT (custom, automated)

## Radio Frequency Immunity (RFI)

- A-RFI™ Test System (custom, automated)

## Environmental

- ESD Test System (OTS - manual)
- Lightning Test System (OTS - semi-automated)
- Temperature & Humidity Chamber (OTS - semi-automated)
- Impact Drop Tester (OTS - manual)
- AC Power Variation Tester (OTS - semi-automated)

## Telephone Signal Capture and Analysis

- TSA-6000® Test System (custom, automated, commercial product)

# *TSA-6000® Test System*

- **Telephone Line Signaling Capture Equipment and Analysis Software**
- **Signal Analysis Software Modules**
  - Telephone and General Signaling Analysis (Standard module provided with all systems)
  - Caller-ID Analysis
  - VoIP Terminal Adapter Signaling Analysis
  - SMS (Short Messaging Service) Analysis
  - DTMF and Dial Pulse Analysis (telephone tests)
  - WAVE Output of Captured AC Signals
  - Speech Voltmeter (per ITU P.56)
  - Tone Generator and Frequency Sweep (End-To-End Attenuation Analysis)

# TSA-6000® Test System

- Commercial Product: [www.tsa6000.com](http://www.tsa6000.com)

