



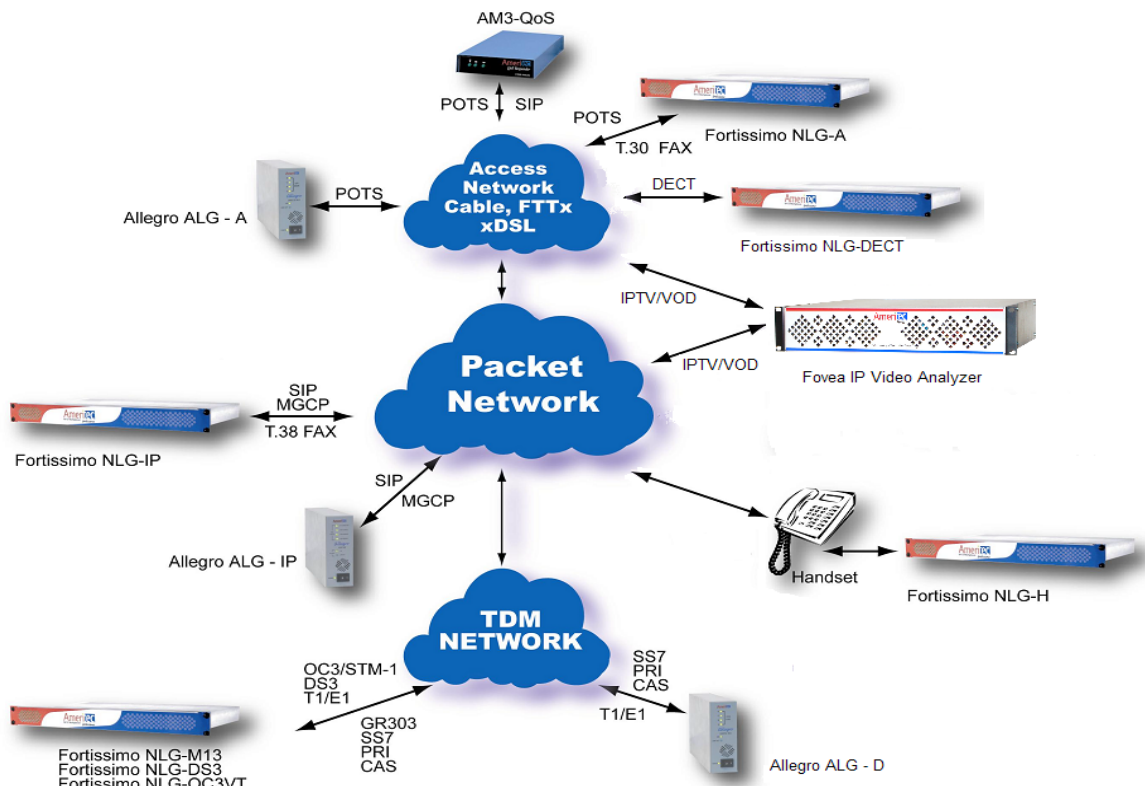
**Allegro
Desktop Network Call Generators**



- ◆ Allegro is the world's smallest, full-featured network load generation product designed to test and qualify the voice and packet network.
- ◆ Allegro speeds up your system integration, functional and performance testing at an unbeatable price/performance ratio.
- ◆ Allegro is designed to place calls to or receive calls from other Allegro, Fortissimo or AM3-QoS units to provide a complete test system of call generation and Quality of Service (QoS) measurements.

The Allegro family of network load generators represents a significant technological advancement in desktop call generation. Designed to meet the requirements of today's developer of both legacy and new generation switches including hardware and software modules. Operators focusing on system integration or revenue and quality assurance will also enjoy the functionality, ergonomics and costs of this solution. The Allegro packs the power of 8 simultaneous SIP/MGCP calls, up to $4 \times$ T1/E1 spans or $4 \times$ analog POTS (loop/ground/fax/data modem) circuits in a unit that sits inconspicuously on a desktop.

The Allegro comes in three versions - an Ethernet VoIP (SIP/MGCP) configuration, a multi-span T1/E1 configuration, or a 4-line analog configuration. The Allegro IP Voice Quality Tester (VQT) is capable of generating signaling and media traffic on 8 unique IP sessions. The QoS measurement package is standard on this unit. The digital version ships complete with 2 T1/E1 software selectable spans, a full quality of service (QoS) measurement package and CAS, PRI and SS7 signaling capabilities. Optionally, the unit may be configured for 3 or 4 digital spans. The analog version supports 4 analog circuits, complete with loop and ground start signaling, fax and data modem operation and Ameritec's industry leading QoS measurement package.

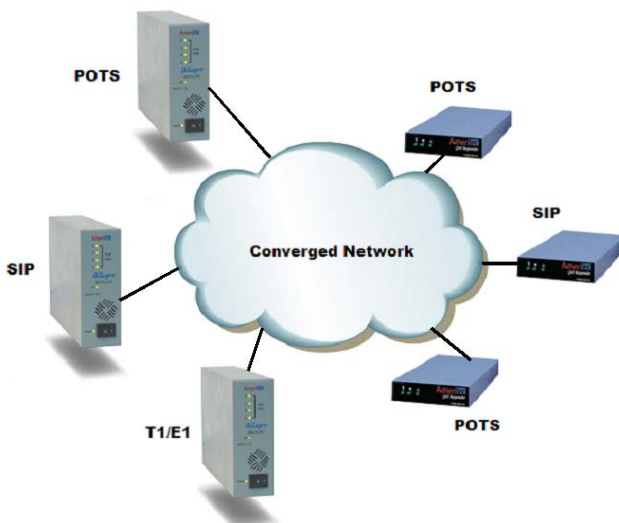




Applications

- ◆ Load Generation
- ◆ Cable Telephony, FTTP, PON, VoDSL
- ◆ Automated Testing via Telnet and Tcl
- ◆ Fax and Data Modem Testing
- ◆ Quality of Service Testing
- ◆ CLASS Calling Feature Testing
- ◆ Live Network Testing
- ◆ Point of Sale Terminal Testing
- ◆ Voicemail, IVR Testing
- ◆ Echo Testing
- ◆ Wideband Voice Testing and Verification

Live Network Testing



- ◆ Provides Call Detail Records with Timestamps
- ◆ Calling #, Called #, QoS Measurements
- ◆ Active Call Completion and QoS Testing

Operation

The Allegro products allow the developer to simulate various types of network traffic on a select number of spans or lines without having to go to the expense of purchasing large-scale units. Maintaining full testing flexibility on a smaller line count is the premise behind Allegro. Each Allegro is controlled via a PC workstation over a 10/100 MB Ethernet port and utilizes a Conductor graphical user interface (GUI) that is intuitive and easy to use. Alternately, a command set option allows the user to remotely control units via a Telnet or Tcl session for test automation applications. Full scripting of call scenarios is accommodated and manipulation of signaling protocols is provided to allow the user to fully test and debug equipment under test before releasing product to the next stage of development. Audio monitoring and capture is provided on the Allegro to complete the testing phase so that a developer can further verify the integrity of any call scenario.

Measurements

Long known for providing the most comprehensive set of measurements in the call generation industry, Ameritec has incorporated into every Allegro product the ability to simultaneously measure traditional call statistics such as calls originated and completed as well as a comprehensive set of QoS measurements designed to provide packet quality and voice quality scoring. This complete set of measurements provides the developer with PSTN to packet network correlation scores. The ability to utilize our GoldenVoice technology to measure packet loss, jitter, signal to noise ratio, clipping and delay while simultaneously providing R-factor, GMOS, G-PSQM, G-PESQ, and G-PESQ-LQ scoring on all lines makes this product an invaluable development tool.

Enhanced Features

A modem QoS feature verifies accurate detection and transport of Fax, Modem and TTY/TDD signals in pass-through scenarios. Synchronized call scripts provide the ability to test complex call scenarios such as A->B;B->A, and CLASS features such as conference calling, call waiting, etc. Full wideband audio testing allows the Allegro IP to ensure that High Definition (HD) voice quality is operational. Real fax and data modem emulation is fully supported on Allegro analog units to provide complete network testing.

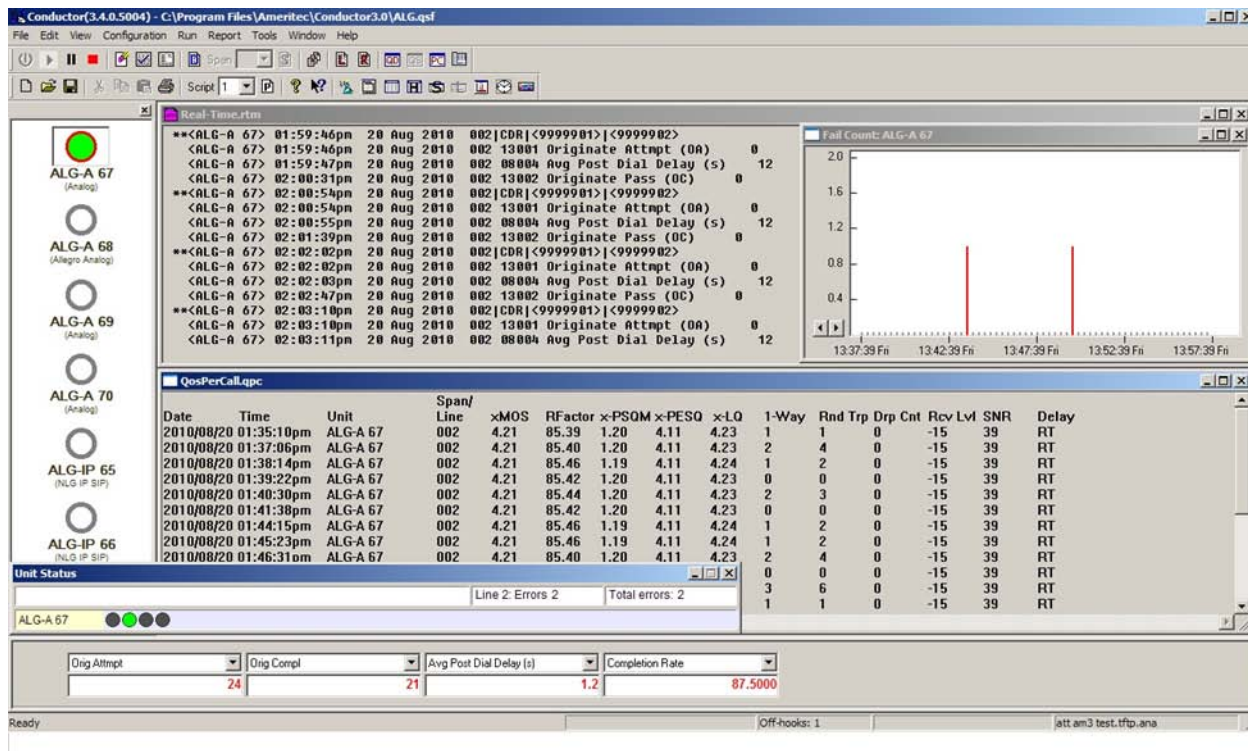
Configuration

Upon power up, each Allegro prompts the user to recall previously stored test configurations from the PC. This includes the type of call programs that the user desires to run and any parameter settings that are required for a specific test. At the completion of any test, the user is prompted to store the unit's configuration so that it may later be retrieved to verify test integrity or re-run a previous test. Virtually, an unlimited number of these configurations can be stored on the workstation for easy recall.

Performance

While this may be the industry's smallest network load generator, ounce for ounce it provides highest performance. Utilizing independent resources, each Allegro can generate as many calls as your equipment can support. The Allegro can configure nearly every parameter associated with the generation or answering of a call and therefore it is possible to test for load related issues as well as fundamental integrity issues. Additionally, as many as 32 Allegro units can be used side by side to increase call volumes without significantly increasing your investment.

Conductor Graphical User Interface



The Configuration Summary dialog box is shown, with tabs for Unit Setup, Signaling, Scripts, and Fax Setup. The Unit Setup tab is active, displaying fields for Images to Send, Image Capture Setup, and Trace Capture Setup.

Images to Send:

Index	Image Name	Index	Image Name
1.	Standard MH ITU T22 A	3.	Use last assigned image
2.	Use last assigned image	4.	Use last assigned image

Image Capture Setup:

Image	Line	Page	Trigger Condition	Image	Line	Page	Trigger Condition
1.	1	1	Continuous	3.	1	1	Disabled
2.	1	1	Disabled	4.	1	1	Disabled

Trace Capture Setup:

Trace	Line	Trigger Condition	Trace	Line	Trigger Condition
1.	1	Continuous	3.	1	Disabled
2.	1	Disabled	4.	1	Disabled

Buttons: Save, Save As, Close, Help

The Test Scheduler dialog box is shown, with tabs for Sched 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12. The Sched 1 tab is active, displaying fields for Schedule Time, Start Time, Run for, Start Date, and Report Details.

Schedule Time:

Start Time: 9:00:00 PM Run for: 12:00 Start Date: 08/23/2010

Report Details:

Report Contents: All Configuration RealTime Statistics PerCall Line Filter

Directory: C:\Program Files\Ameritac\Conductor3.0\Temporary Files

Unit:

Unit	Configuration
ALG-IP 66	ALGIP-ALGA QOS ftp.aip
ALG-A 68	ALGA QOS.ala

Buttons: Add Unit, Modify Unit, Delete Unit, Summary Editor

Buttons: Clear Sched, Start test, Save, Close, Help

General Characteristics

User Interface	Windows 7, Vista, XP based GUI
Ethernet Port	One RJ45 connector and two LED indicators per network interface 10/100 BaseT interface Complies with IEEE 802.3
Dimensions	2" Wide x 5" High x 7" Deep
Power	90 – 264 VAC, 47 to 65 Hz
Weight	2 Pounds (0.9kg)

Call Programs and Scripts

Features	Commonly used scripts supplied with unit Scripts created and downloaded from workstation or PC
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System

Capacity	8 unique IP sessions, 4 analog lines, or 2 digital spans (opt. 4)
Call Volume	Typically 500 confirmed calls per hour per line (DTMF dialing, tone ID confirmation, 2 unpaired lines)
Line Types	- SIP/MGCP calls - Loop start/ground start, 2 wire - T1/E1 spans (CAS, PRI, SS7) - Pulse, DTMF, MFR1 & MFR2 dialing
Test Interface	RJ45 (VoIP VQT), RJ45 (digital) RJ11 (analog)

Fax and Data Modem

Data Modem	Rates from 300 bps to 33.6 Kbps Bell 103, 212, V.21-V.34 modulations Connection rate, data throughput, Retransmissions, errors, error rate, Signal level, carrier loss
Fax	T.30 fax supported to V.17 rates (14.4 K) ECM, non-ECM Capture and trace

Voice Channel Functions

Detectors	Tone detectors are based on digital signal processors (DSP) 1 per channel
Call Progress Detectors	One detector per line Detects dial tone, busy, reorder, ring, ringback, supervision
Path Confirmation	One receiver per line Accuracy: 1%, +/- 10 Hz
Single Frequency Tone Generator	64 Selectable tones

Voice over Packet

Voice Path Confirmation	GoldenVoice signal designed to pass through vocoder
Packet Drop Out Count	Count lost packets for frame sizes of 5, 10, 15, 20, 30, 40 and 100 ms
Measure Delay	Round trip delay +/- 10 ms accuracy One way delay +/- 5 ms accuracy
Measure Clipping	Peak and average clipping of standard reference with +/- 5 ms accuracy
Jitter	Peak and average jitter of standard reference with +/- 5 ms accuracy
SNR	Average and maximum SNR received (from 0 to 39 dB)
Signal Energy	Average and maximum GoldenVoice energy received (0 to -50 dBm)
Spurious Energy	Maximum non-GoldenVoice energy (0 to -50 dBm)
Total Energy	Average and maximum GoldenVoice energy plus extraneous noise received (0 to -50 dBm)
GoldenVoice	Noise received from 0 to -50 dBm Ten programmed GoldenVoice tone signals used to send the ID from each side encoded as three tone sequences
QoS	Calculation of R-Factor, GMOS, G-PSQM, G-PESQ R-factor is based upon E-Model in ITU-T G.107, Amendment 1, June 2006

Printout and Reports – Call Statistics

Manual Reports	Call Statistics for each line Totals for all lines
Automatic Reports	Prints automatically at 1 minute to 1 hour intervals Contents of each column in the printout are user selectable

Call Statistics for each Originate Line	Call Attempt Count Call Completion Count Delayed Start Signal Count No Start Signal Count No Alert Signal Count No Voice Path Count Busy Signal Count No Answer Count Average Dial Tone Delay Average Post Dial Delay Custom Code Report Count	GMOS tests	Average and maximum percent drop Drop packet size (ms) Drop test time (s) Average and maximum one-way delay (ms) Average and minimum circuit noise Minimum and maximum receive level Average and maximum round trip delay (ms) Average and maximum SNR
Call Statistics for each Terminate Line	Attempted Calls Count Completed Calls Count Custom Code Report Count	Analog Impedances Supported (ALG-A+) Ordering Information Mainframe/Chassis/Test Set ALG-A-PLUS ALG-M ALG-D ALG-IP	600 ohm, 900 ohm 600 ohm + 1uF, 600 ohm + 2.16uF, 900 ohm + 1uF, 900 ohm + 2.16uF, 270 ohm + (750 ohm 150nF), 220 ohm + (820 ohm 120nF), 370 ohm + (620 ohm 310nF), 320 ohm + (1050 ohm 230nF), 370 ohm + (820 ohm 110nF), 275 ohm + (780 ohm 150nF), 120 ohm + (820 ohm 110nF), 350 ohm + (1000 ohm 210nF), 0 ohm + (900 ohm 30nF)
Printout and Reports – VoP Statistics			
Signal Analysis Tests	Average and maximum dropout duration (ms) Average and maximum front clip duration (ms) Average and maximum back clip duration (ms) Average and maximum jitter duration (ms)		
Dropout Tests	Average and maximum dropout duration (ms) No tone detected Tone lost		
One Way Delay Tests	Average, minimum and maximum one-way delay (ms)		
GoldenVoice Tests	Minimum and maximum total energy Minimum and maximum SNR Minimum and maximum GoldenVoice energy Maximum spurious energy overflow Spurious energy overflow Low SNR	240092 250532 250533 250534 250538 250566 250567	Digital License Key, adds 2 T1/E1 spans to ALG-D unit Command Set Feature G.729 Software Analog GPS Option Extended Feature Set Fax License for ALG-M (2 lines max) Modem License for ALG-M (2 lines max) Tcl License
Round trip Delay Tests	Average, minimum and maximum round trip delay (ms)	250571	
		Accessories 190005 240091	Protocol Development Kit XpresScript Visual Scripting Tool

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