

# Singulus® G10

## Portable Advanced Quality Monitoring, Analysis, and Test System for 10Gigabit Digital Video Networks

The Singulus® G10 hardware platform is the industry's first and only 10Gb video monitoring, analysis, generation and test tool. The Singulus G10 hardware is a multi-functional platform for monitoring, analyzing, troubleshooting, testing and measurement of video networks. The Singulus G10 connects to the video network through a 10Gigabit fiber Ethernet port and provides either network traffic generation (Stimulus) or monitoring and analysis. Based on reconfigurable technology, the Singulus G10 allows the user to configure the hardware into alternate modes of operation. The Singulus G10 can be configured as an advanced development and troubleshooting platform or a simple remote video monitoring platform. The user can easily switch operational modes using a web page interface.

The Singulus G10 simultaneously and continuously monitors and analyzes multiple live (SPTS, MPTS, etc.) IP video flows with deep packet analysis of PIDs, PCRs, etc. for remote troubleshooting and lab testing. In MediaAnalyzer mode, the Singulus G10 can perform many other tasks such as event triggering and capturing up to 200 MB of live video, playing remotely via the IQtv™ feature, logging events and trending of IP flow and MPEG statistics, and much more. The Singulus G10 in analysis mode is supported by IneoQuest's iVMS® video management system, IQMediaAnalyzer Pro® Software, IQDVx®, HTML interface, and Tcl scripting language.

### MONITORING & ANALYSIS FEATURES

- Reconfigurable hardware for scalable features
- Real-time monitoring and measurements of thousands of IP video flows
- Supports MDI (RFC # 4445)
- Provides analysis & deep packet inspection of IP & MPEG
- Monitoring and analysis to the transport stream PID level – over 64,000 PIDs
- Record and playback IP and MPEG video problems with a 200Mb Trigger/Capture buffer
- Supports MPEG2, MPEG4 Part 2, MPEG4 Part 10/H.264, H263, H261, DC II, VC1 & WinMedia 9
- Supports Unicast, Broadcast, and Multicast IP flows
- Supports IGMP Joins/Leaves, monitoring, and measurements
- TR 101 290 test standard support
- Support SNMP, SNTP, Syslog, Telnet and VLAN
- Ease of configuration with HTML interface
- Video Network Fiber Connection supports XFP interfaces 850nm, 1310nm, and 1550nm optics
- Remote Management through 10/100 Ethernet connection
- Local Management through mini USB 2.0 connection



## TRAFFIC GENERATION FEATURES

- Generates up to 10Gb of network traffic: video, voice, or data
- Live IP flow Replication using dedicated 10/100 Mb port
- Playback of Transport Stream File
- Playback of Protocol Capture with timestamp
- Simulate Headend flows and Programs
- Tcl Scripting Support
- IP and MPEG Transport Impairment Capabilities: Cumulative Jitter, Loss, PID Drop, Packet Drop, PCR Jitter modification, Duplicate IP Packets, and Out of Sequence IP Packets
- USB slave port for generating network traffic with large files

## SPECIFICATIONS

PHYSICAL	
Description	Specification
Singulus G10	Width: 7.13" (180.4mm) Height: 2.25" (57.2mm) Depth: 11.1" (282mm)
Weight (w/rubber edging)	2.39 kg (5.28 lbs) 3.52 kg (7.76 lbs) - with external power supply and power cord

ENVIRONMENTAL	
Description	Specification
Operating Temperature	0 to 40°C
Storage Temperature	-20 to 60°C
Environment	Indoor use only in a non-explosive atmosphere. Pollution degree 2
Operating Altitude	2000m maximum
Operating Humidity	80% maximum for temperatures up to 31°C, decreasing linearly to 50% relative humidity at 40°C

REFERENCE CLOCK AND CALIBRATION	
Description	Specification
Internal Reference Clock	25 MHz +/- 50ppm accuracy
Calibration	The Singulus G10 requires no periodic calibration adjustments during its lifetime.
External Clock	For future use.

POWER AND COOLING	
Description	Specification
Power Requirements - External Power Supply	Mains Supply: 100 VAC to 240 VAC, 0.9A, 47 Hz to 63 Hz, voltage fluctuations up to +/- 10% of the nominal voltage
Power Requirements - Singulus G10 Input	12 volts DC, 3.5 A Maximum
Singulus Cooling Fans	Unit is fan cooled with right to left airflow. Recommend 2" on left and right side of G1-T for airflow. G10 alone is 42 watts = 143.31 Btu/h G10 with PS is 60 watts = 204.73 Btu/h



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