



Application Overview

Television systems are rapidly migrating from analogue to digital signal transmission. This change in technology produces a whole new approach to TV signal testing with Set-top box manufacturers needing to do component, board level and final unit testing. Compliance testing for video and audio outputs, IR remote control signals, and the need for accurate measurement of frequency, current and voltage requires a new level of precision and the use of a high-resolution digitizer.

Applications include: Set-top box manufacturers, digital TV manufacturers (standard and HDTV), cable TV operators, TV component manufacturers and DVR (digital video recorder) manufacturers all have a potential need for specialized and custom testing systems. As digital television operates using modern modulation techniques test systems need to be able to acquire signals with high dynamic range, excellent time resolution and wide bandwidth.



Qualifying and Characterizing Digital Set-Top Box Signals

Using High-Resolution Digitizers for Automated Testing of Digital TV Systems

Solution Description

- U1070A, 12-bit, single channel, 200-400 MS/s, 100 MHz, PCI digitizer.

Key Features and Added Value

- High accuracy (ENOB) and dynamic range enables better voltage measurement precision with improved SNR and SFDR.
- +/- 2 ppm digitizer time base accuracy, fast sampling rates (up to 400 MS/s) and large acquisition memories improve frequency measurements and simplify the capture and analysis of long, complex signals.
- Rapid data transfer over the PCI bus to a PC makes it possible to perform complex parameter and waveform analysis while still allowing an open measurement system that is easy to customize.
- Faster testing times and better accuracy improve device quality and reduce manufacturing times.
- TV trigger for positive modulation, line and frame selection (PAL, SECAM, NTSC).

Key Requirements

- The U1070A series digitizers offer significant advantages (accuracy, size, power, data transfer speed, etc.) over conventional test instruments.
- Get involved with manufacturers and subcontractor manufacturers before or early in the design phase of new product test systems; highlight the digitizer advantages particularly in the automated testing domain.
- Remember the software architecture is open. Windows, Linux and VxWorks OS's are supported as is programming in a wide variety of languages. Integration into automated test systems becomes easy.

Resources

- U1070A, 12-bit, PCI digitizer brochure: <http://cp.literature.agilent.com/litweb/pdf/5989-7114EN.pdf>
- Data Converter product selection guide: <http://cp.literature.agilent.com/litweb/pdf/5989-8038EN.pdf>
- Digitizers website: www.agilent.com/find/embedded-digitizers

Contact

- Agilent Technologies – MPO Embedded: edgar@agilent.com



www.agilent.com

© Agilent Technologies, Inc. 2009-2011
Printed in USA, May19, 2011
5990-4772EN



Agilent Technologies