

SAT

Semi-automatic test module

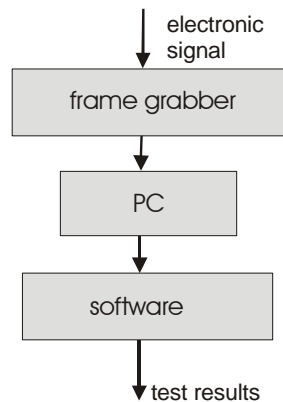


Fig. 1. Block diagram of SAT module

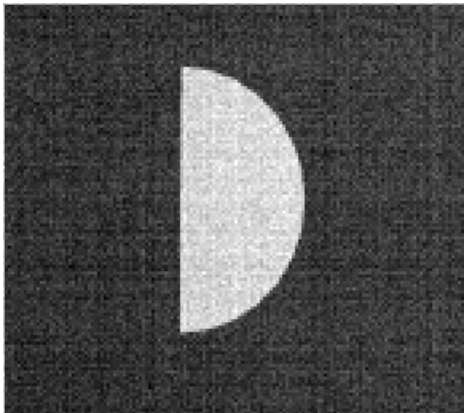


Fig. 1. Image of the edge target generated by a tested thermal imager

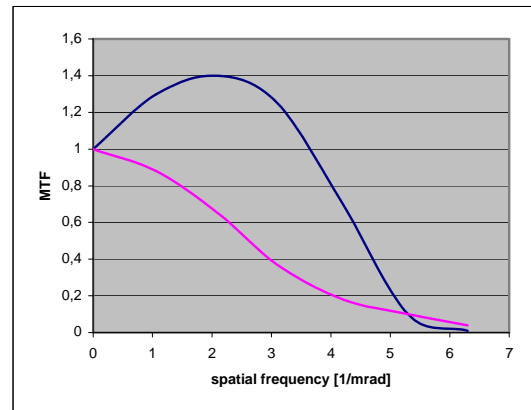


Fig. 2. MTF of two different thermal imagers

BASIC INFORMATION:

SAT (semi-automatic test) module is a PC with installed frame grabber card and specialized software optimized for testing surveillance imaging systems or modules of such systems. Generally SAT module enables capture and analysis of images generated by tested electro-optical imaging systems like thermal imagers, TV cameras or video cameras used in the test system.. The PC is the heart of the SAT module and is connected both to the test system and to the tested imager.

Standard PCs (desktop PC or laptop) are used as part of SAT module. Standard frame grabber card enables acquisition of electronic image in the following

formats: analog video (PAL, NTSC) or digital (Fire Wire, USB 2.0). Optional frame grabber can capture electronic images in the following digital formats: LVDS, CameraLink or GigE.

Specialized software is offered in different versions depending on type of test system. Typically the software package is built from TAS series program for image analysis and some additional programs for control of blackbody/light source. TAS is an advanced computer program optimized for analysis of images generated by surveillance imaging systems and calculation of parameters of these systems.

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APPLICATION AREA

- **Test laboratories**
SAT is a powerful tool to carry out extensive testing of thermal imagers, TV cameras, II tubes, and IR FPAs, CCD/CMOS sensors.
- **Production line**
SAT was designed with aim to shorten test time. It can shorten the test time by a factor +5 or more in comparison to classical measurement methods. It can shorten measurement time non only objective parameters like MTF, SiTF, NETD, FPN, non-uniformity etc. but also measurement time of subjective parameters like MRTD, MDTD, MRC.

SPECIFICATIONS

PC

processor typical modern processor for current desktop/laptop PC
type desktop PC for DT, SAFT, VT, ITS, FT systems or laptop for LAFT systems

operating system Windows XP or Windows 7

Frame grabber

Dynamic 8 bit (option: 10 bit)
Standard video signal formats PAL, NTSC, Fire Wire, USB 2.0
Optional video signal formats CameraLink, LVDS, GigE

TAS software

Measurement tools for testing thermal cameras (TAS-T software) Semi-automatic measurement of MTF, SiTF, NETD, FPN, non-uniformity, distortion, SRF, FOV; and support for MRTD measurement

Measurement tools for testing TV cameras (TAS-V software) Semi-automatic measurement of MTF, Sensitivity, SNR, Input-output characteristic, Light Control range, Automatic Light Control range, Black level non uniformity, White level non uniformity, Distortion, FOV; and support for MRC measurement

Measurement tools for testing II tubes cameras (TAS-I software) Semi-automatic measurement of MTF, dark spots and bright spots, SNR, halo, gross distortion, shear distortion, useful tube diameter, output brightness non-uniformity, image alignment; image rotation, magnification, Multi-Multi Noise, Multi-Boundary Noise, and software support for resolution measurement.

Measurement tools for testing IR FPAs (TAS-F software) Semi-automatic measurement of MTF, SiTF, NETD, FPN, non-uniformity, cross-talk, bad pixels.

Other software

CTCB Control PC control of blackbody/ rotary wheel control during testing thermal imagers

DAL Control PC control of light source/rotary wheel during testing of TV cameras.

ITS Control Control of ITS stations during testing II tubes

*specifications are subject to change without prior notice

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