

NIMSES is a system for evaluation of image sensors and FPA/ROIC circuits. Configurable interface, modular design, and programmable timing. Configurable bias voltages, digital supplies and voltage reference. Gigabit Ethernet interface.

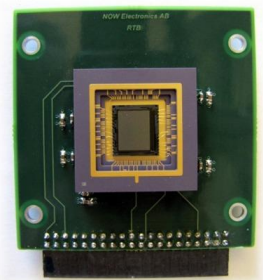
# NIMSES

## NOW Image Sensor Evaluation System

NOW Electronics AB has developed a system for evaluation of FPA/ROIC/image sensors, for example IR sensors (SWIR, MWIR, LWIR).

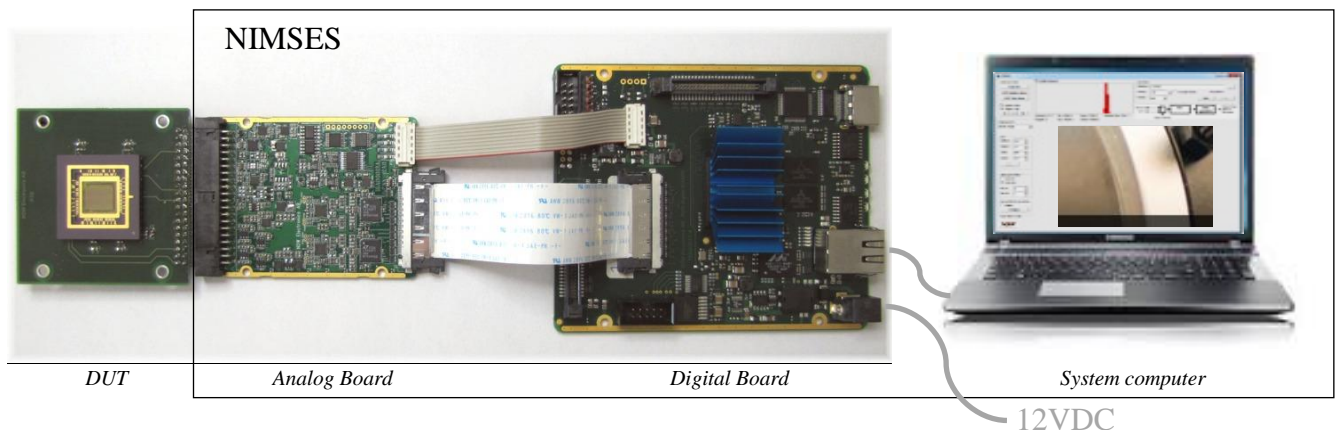
The system includes:

- An analog board with generation of ROIC biases and supplies + interface to the ROIC analog outputs.
- A digital board for signal generation and video capturing.
- A laptop with software for video capture and control/configuration.



*Example of customer Device Under Test*

The FPA/ROIC is connected to the analog board directly or with a short cable. The analog board may reside in a separate enclosure and connect to the digital board with two longer cables, or optionally the two boards reside in the same enclosure. The design is compact, and NIMSES is easily integrated into a complex laboratory environment, and is also suitable for sensor demonstration purposes.



The digital board is connected to the PC with a standard Ethernet cable. The PC has image capture software and an easy to use GUI.

An external 12V@2A DC power supply is connected to the digital board. The analog board is powered from the digital board.

Support:

- Remote SW support and updates via Internet.
- Design services for customization of the analog front end PCB, signal processing SW, or physical build-up.



#### Hardware:

- Supported devices:
  - ROICs ISC0403, ISC0402, ISC0903, ISC0802, ISC0404, ISC0904, ISC9705 from FLIR and XROT2SL01 from Xenics and many additional types.
  - Many sensors and FPAs due to the configurable interface.
- Modular design: 1 to 4 ROIC outputs can be sampled and captured.
- Configurable ROIC electrical interface:
  - Two configurable analog biases/supplies.
  - Two configurable digital supplies.
  - Configurable voltage reference.
  - Configurable VDETCOM. Optionally software controlled from DAC.
  - Optional SPI interface for ROIC control.
- 16 bit low noise AD converters
  - Configurable sampling clock rate and sampling phase
  - Up to 20 MHz sampling clock
  - Optional: up to 40 MHz sampling clock
- Programmable timing generator for FSYNC and LSYNC.
- GigE Vision® interface up to 100 MB/sec.
- Eight software controlled general purpose I/O.
- Optional: HDMI video output

#### PC software:

- Software with a graphical user interface.
- Configuration of the hardware (number of channels, gain, width, height, offsets etc.).
- Real-time display of raw or processed video.
- Recording to disc of real time raw video.
- Supported file formats: 16 bits png, 16 bits raw, and avi sequences.
- Automatic gain for the displayed video.
- Optional, real-time image processing functions:
  - Defective pixel replacement.
  - One and two point NUC.
  - Temporal & spatial noise calculations, uniformity, responsivity and MTF measurement.
  - Additional functions.
- Real-time calculation and display of histogram.
- Graphical interface for setup of the signal generator.
- Configuration of the signal generator (FSYNC, LSYNC, integration mode/time, clock frequency + sampling phase, frame rate, trigger mode etc.).

### NOW Electronics AB - system contractor and consultant

NOW has offered expert knowledge within electronic design and signal processing since 1985. We develop and produce application optimised electronic systems, or deliver consultant services.

NOW Electronics AB is a member of the Vironova Group.

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