GEN series ISOBE5600 Calibration Kit

Calibration and Verification software

Special features

- **Fully automated Calibration/ Verification of all ISOBE5600 models**
- **Supports all adjustments**
- **Verification using published ISOBE5600 specifications**
- **Pass or Fail report generation**
- **Supports standard calibrators and digital multimeter**

ISOBE5600 Calibration Kit

The ISOBE5600 calibration kit enables the user to perform a full calibration or just a verification of any ISOBE5600 model. The calibration kit consists of the calibration/ verification software, a manual, USB-IEEE-488 converter and a ceramic trimmer. Additionally the user will need the basic cable set to calibrate and verify the ISOBE5600 systems. Using this calibration kit, the proper calibration equipment and calibration fixtures enable easy, fast and on-site self calibration of the ISOBE5600 system. This reduces downtime significantly by preventing shipping the system to HBM for verification and/or adjustments.

The calibration software not only calibrates and tests according to HBM published specs, but also automatically or semi automatically adjusts the system back to the best accuracy possible. For users who only want to verify the system still meets specs but don't want to change anything, the verification procedure does the job and is included in the package as well.
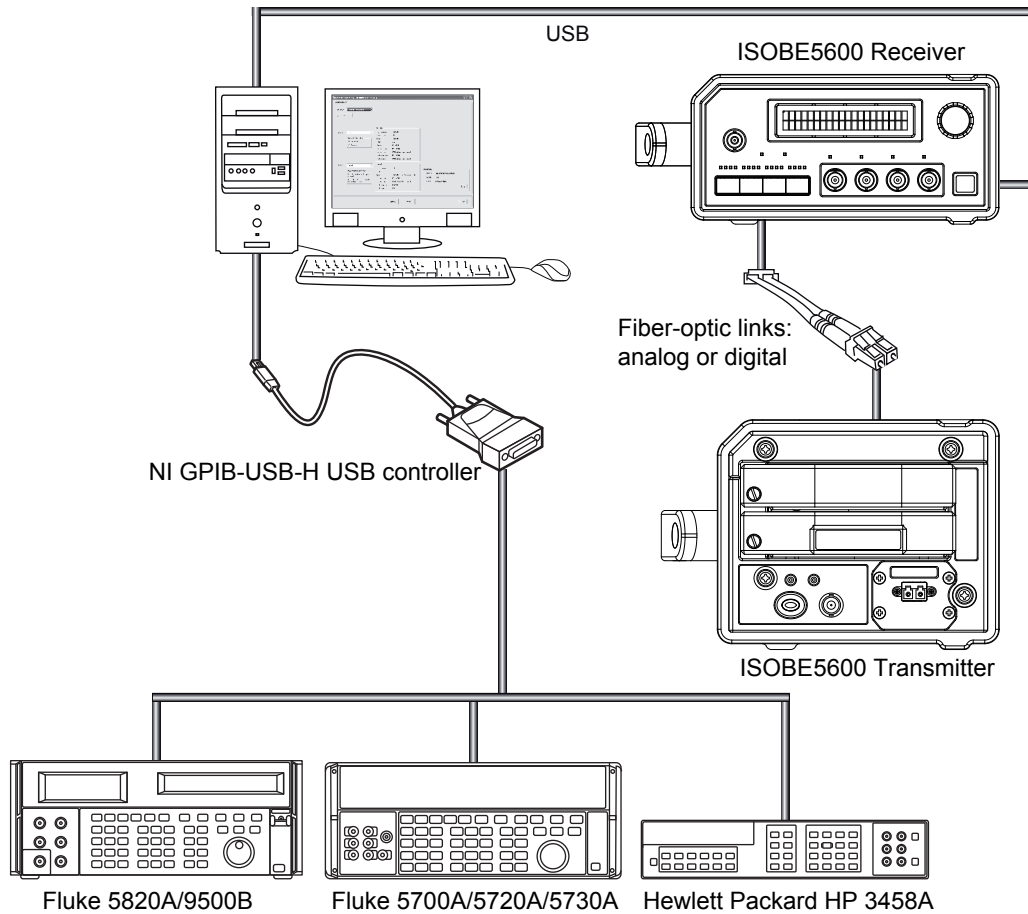
ISOBE5600 Calibration Kit Setup Overview

USB

ISOBE5600 Receiver

NI GPIB-USB-H USB controller

Fiber-optic links:
analog or digital

ISOBE5600 Transmitter

Fluke 5820A/9500B   Fluke 5700A/5720A/5730A   Hewlett Packard HP 3458A

Figure 1.1: ISOBE5600 calibration kit setup

Calibration and Verification software

The software comes on a CD with PDF manual and is ready to run after installation.

Software language	English
Manual language	English
Software requirements	
Microsoft® Windows®	Vista™, WIN 7 Business, Ultimate or Enterprise Works in 32 bit mode on 64 bit versions of Vista and WIN 7.
PC requirements	
Minimum CPU	Intel® Pentium® 4 class PC
Minimum RAM memory	1 GByte
Minimum free disk size	200 MB
Minimum graphics card	16 bit color with 64 MB on-board video memory and hardware DirectX 9 support
Minimum screen resolution	1024 x 768 pixels
Free USB 2.0 port	2; for use with the NI GPIB-USB-HS controller and connection to ISOBE5600r Optional one free COM (serial) port for the IOtech serial to GPIB interface
Others	CD-ROM drive used for installation of the software Internal or external speakers for alerts and warnings
ISOBE5600	
Receivers	ISOBE5600r and ISOBE5600m
Transmitters	ISOBE5600t and ISOBE5600tm

Calibration Equipment (Not supplied by HBM)

Beyond the calibration kit itself, the following calibration equipment is needed in order to perform a calibration or verification.

LF-Generator	Fluke 5700A/Fluke 5720A/FLUKE 5730A
HF-Generator	Fluke 5820A/Fluke 9500B
Multi-Meter	HP 3458A

Calibration Fixtures and Cables (options, to be ordered separately)

As calibration voltages range from mV to tens of V and go up to MHz, the proper input connections are essential to get repeatable, reliable results. A cable kit containing all required cables, adapters and termination resistors to ensure a proper connection between the calibrator and the GEN series system can also be ordered separately.

The calibration software refers to the fixtures and gives on-line help on how to use them and how to wire it up properly. The software also will indicate whenever voltages are used above the accepted safe levels so operators can take proper safety precautions.
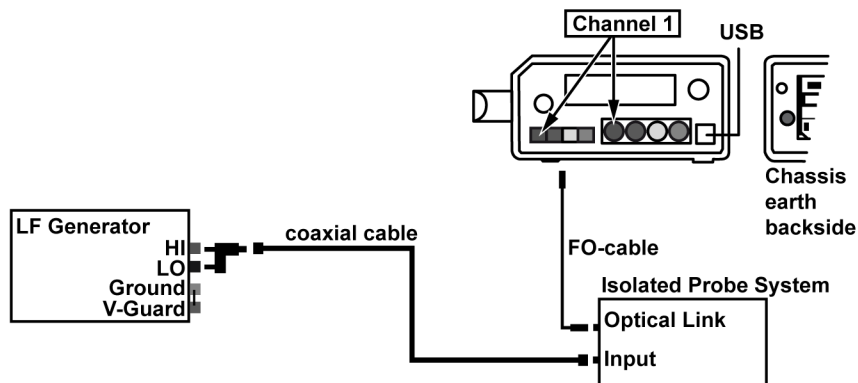

Figure 1.2: Example of an ISOBE5600 Connection window

Calibration Process

The complete verification process is fully automated and delivers PASS / FAIL information with the press of a button.
The same applies to most of the calibration process, where electronic intelligence is used to retain the best performance possible. Most of this is fully automated and no user interaction is needed to restore the transmitters and receiver to the best accuracy achievable.
Only in the rare case that AC bandwidth could be improved the use of manual user interaction is required. Then the manual and the software itself help guide you through the needed steps. Exact process description and direct readouts make even manual procedures easy to work with.
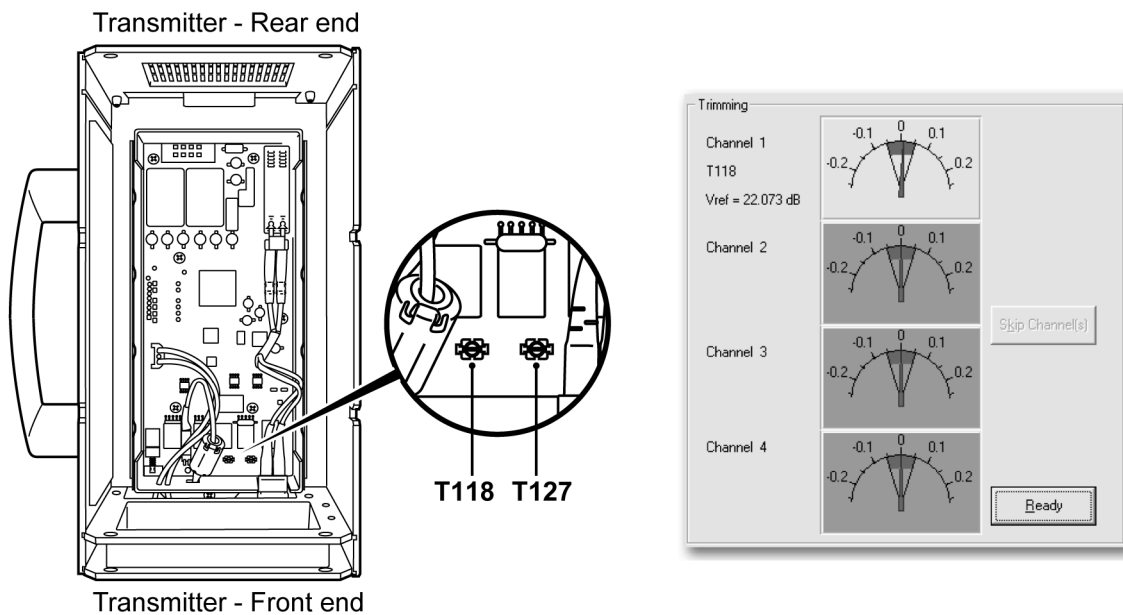

Figure 1.3: ISOBE5600 AC adjustment description and readouts

Verification Process

During the fully automated verification, no changes are made to any settings. The end result of the verification is a listing of all findings and an overall PASS / FAIL result. The manual explains every verification process the software uses, including a detailed description of the calculation methods to establish the specifications.

Supported verification steps (Not every model requires all steps)	Voltage DC Gain, Offset, Linearity and MSE (Maximum Static Error) AC Coupling Input Bandwidth Input Noise CMRR (Common Mode Rejection Ratio) DC Output Gain and Offset Output Noise

Calibration Report Printout

As an end result, the ISOBE5600 system saves all the results in a RTF-Text file. From there it can be stored for later reference or printed out.

ISOBE5600 Calibration and Verification Software   : V2.22

Calibration Verification results
Verification Date   : Nov 19 , 2014
SPEC-File version   : ISOBE 2.10.02

Recorder Info
Physical Name   : Recorder A
Serialnumber   : IFA0800121
Type   : ISOBE5600m Memory
SW version   : 2.00.12339
No. channels   : 4

Channel Info
Physical Name   : Ch 1
Serialnumber   : IET0900255
Type   : ISOBE5600 100MS/s
Channel Type   : HV Fiber Amplifier Rv1

Channel Test **PASSED**

Note: Calibration/Verification is valid with any calibrated Receiver-channel

Used Equipment for testing board:
DC reference   : Fluke 5700A
LF generator   : Fluke 5700A
HF generator   : Fluke 5820A
Generator (HV)   : Fluke 5700A
PWG   : Unspecified (manual)
Multimeter   : HP3458A
Signal Switch   : Unspecified (manual)

Filter: Wideband
Input: 1

Range (V)	Offset (%)	DCGain (%)	SINL (%)	MSE (%)	BWdth (kHz)	CMRR (dB)	Noise (%)	ACCpl
0.2	-0.044	0.038	0.011	0.064	29951.8	NA	0.031	NA
0.4	-0.022	0.006	0.010	0.028	32296.5	NA	0.024	NA
1.0	-0.014	0.064	0.010	0.045	NA	NA	0.019	NA
2.0	-0.015	0.046	0.010	0.039	NA	NA	0.018	Passed
4.0	-0.005	0.009	0.011	0.012	32998.3	NA	0.023	NA
10.0	-0.010	0.057	0.009	0.039	NA	NA	0.018	NA
20.0	-0.011	0.044	0.010	0.033	NA	NA	0.018	NA
40.0	-0.005	0.005	0.011	0.011	34088.1	NA	0.023	NA
100.0	-0.008	0.051	0.009	0.034	NA	NA	0.019	NA

Ordering Information[1]

Article		Description	Order No.
ISOBE5600 Calibration and Verification Software		ISOBE5600 Calibration and Verification software. Comes with software CD, electronic user manual, USB to GPIB convertor and AC trimmer	1-GIS-CAL1-2

(1)   All GEN series systems are intended for exclusive professional and industrial use.

Options, to be ordered separately [1]

Article		Description	Order No.
GEN series Calibration basic cable set		GEN series Calibration basic cable set contains cables, adapters and termination resistors to ensure a proper connection between the calibrator and any GEN series Acquisition card	1-GN-CAL-CABLES-2

(1)   As calibration voltages range from mV to tens of V and go up to MHz, the proper input connections are essential to get repeatable, reliable results. The use of HBM calibration fixture garantees validated setups.

measure and predict with confidence

HBM

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