



UTP 9010

HIGH END AUTOMOTIVE AMPLIFIER TESTER



PROJECTS

- Customer:** Flextronics, global leading EMS-Provider
- Product:** High-End Amplifier Tester
- Industry:** Automotive, Consumer Audio from a well-known Audio Specialist

FLEXTRONICS X



SIEMENS



Management System
ISO 9001:2008
www.noffz.com
ID 9105011383



FAST > FLEXIBLE > FOCUSED

PROJECT DESCRIPTION

- › Development of a new **PXI-based Hardware-Standard Platform** for testing of 24-channel high-end audio-amplifier in automotive applications
- › Implementation of test procedures with Flextronics FTS and individual test steps in NI TestStand and NI LabVIEW
- › Basis of the new concept shall be the **NOFFZ UTP9010** tester platform

CUSTOMER REQUIREMENTS

- › Consideration of a comprehensive NOFFZ Load-, Audio-Switch-Concept (**SCU**)
- › Function test for single boards and comprehensive EOL-function test of whole modules in one tester via exchangeable adapter principle
- › To include a DMM for measurement of bias current as well as determination of channels potential
- › Loads shall be simulated at all channels with the different impedances to simulate loudspeakers with various nominal-impedances
- › System shall be equipped with optical MOST25- and MOST150-Bus for comprehensive simulation of audio streams to the amplifier

HARD- AND SOFTWARE

Hardware concept, based on PXI-components, complete development and realization by NOFFZ.

Hardware components

- › NOFFZ IPC 3012, powerful 2HE IPC with Windows 7
- › NI MXI connection to NI PXI-1045 - PXI-chassis
- › NI PXI-2593 - 500 MHz dual 8x1 50Ω multiplexer for switching of the generated signals produced by the frequency generator
- › NI 6509 - 96 Bit digital-I/O-board for switching of the substitute loads and controlling of the supporting measurement-hardware
- › NI 6514 - digital-I/O-board with 32 entries and 32 exits for adapter control
- › NI PXI-2576 - 64-channel multibank multiplexer for switching of the DMM on the different measurement points
- › NI PXI-5114 - 250 MS/s, 8-Bit digitizer/oscilloscope, 8MB/channel for recording and analysis of waveforms
- › NI PXI-4071 - digital multimeter for current- and potential-measurement
- › Integrated Signal Load Units, as special high precise audio load



Rack-setup UTP 9010 with audio loads in the top area and VPC G12

- › PXI 3060 - Göpel MOST-controller and SMSC MOST150 for generation and analysis of optical audio signals
- › Audio Precision APx525 audio analyzer for generation and analysis high-precision audio signals
- › Audio Precision AUX-0025 - Switching Amplifier Measurement Filter for switching of the 24 audio channels on the audio analyzer
- › Agilent 33210A 10MHz function/arbitrary waveform generator for generation of PWM-signals or microphone-simulations
- › Agilent DC power supplies for supply of the different DUTs

The software-development in NI TestStand and NI LabVIEW was done on basis of FTS2-standards in collaboration with Flextronics



Internal wiring on the PXI core system