FLEXUS FX100
AUDIO ANALYZER

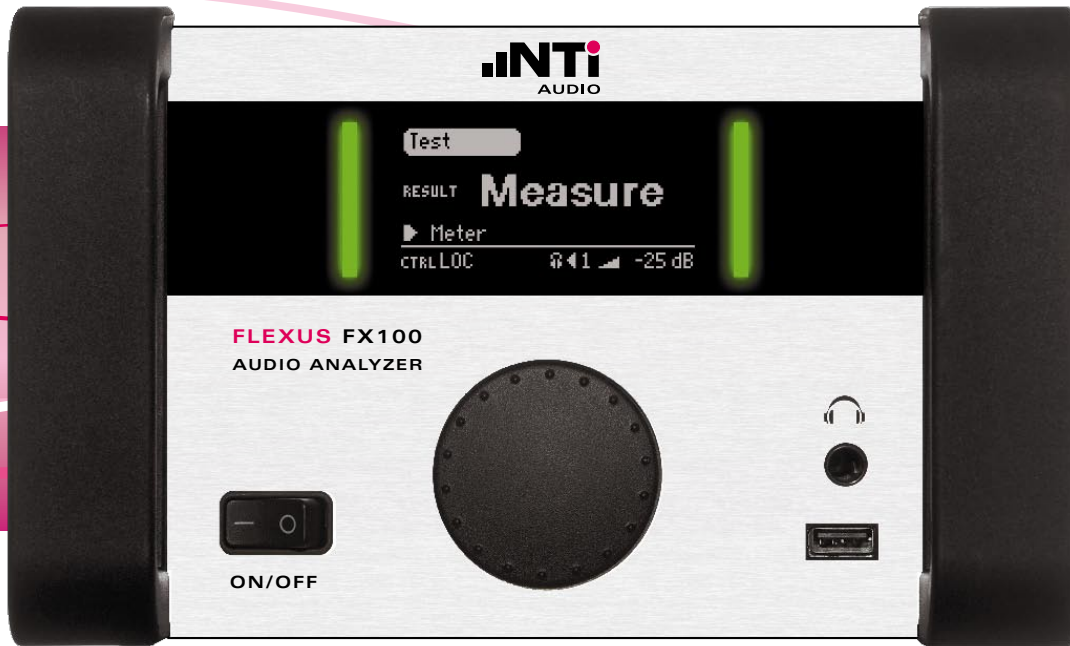- Analog & Digital Audio
- Fast Measurements
- Accurate Results
- Scalable Architecture
- Superior Specifications

FLEXUS FX100
AUDIO ANALYZER

ON/OFF

Made in Switzerland

www.nti-audio.com

AT A GLANCE

The FLEXUS FX100 is a professional audio analyzer and generator dedicated to research, design lab, end-of-line testing and service.

Scalable Architecture
The modular hardware architecture allows customizing the FX100 for two or four parallel channel operation, speaker impedance testing and digital audio measurements. The FLEXUS Audio Analyzer grows with future measurement applications.

More Channels
Individual input switcher and output switcher modules may extend the audio analyzer to 14 input channels or 14 output channels connected simultaneously. The software suite FX-Control may operate several FX100 in parallel thus offering multiple-channel measurements.

Parallel Measurements
The FLEXUS Audio Analyzer acquires all measurement functions in parallel. State-of-the art measurement technologies offer fast glide sweeps, detailed stepped sweeps, a continuous meter mode and FFT analysis.

Superior Specifications
The wide level range from 1 µV to 200 Vp together with a THD+N of typical −108 dB offers comprehensive audio and acoustic analysis for research and design lab.

Frequency Range 5 Hz - 80 kHz and DC
The FX100 Audio Analyzer offers a wide frequency range up to 80 kHz and simultaneous measurement of the DC voltage. Thus the FX100 provides detailed DC and audio frequency analysis within the same configuration.

FX-CONTROL SUITE

The included FX-Control Suite provides the straight forward access to all audio analyzer features. The software utilizes the advantages of state-of-the-art WPF architecture for today's and future measurement applications.

Fast Setup

The flexible architecture supports all demands for intuitive setup of single, parallel or sequential measurement. Individual configuration and result panels may be displayed at various work sheets.

Hardware Diagram

The FX-Control software may illustrate the external hardware wiring. This ensures fast setup by sending the project configuration to the production lines around the globe.

Sequence Mode

Individual measurements may be combined to test sequences, including tolerance handling and Pass/Fail result, creating an easy operator test flow.

END-OF-LINE TESTING

The design of the FX100 Audio Analyzer follows the key requirements for end-of-line testing: Flexibility, speed and ease of integration.

Flexibility

The scalable hardware concept allows customization of the FX100 hardware according to the individual requirements. Plug-in options offer full flexibility such as additional measuring channels, input and output switchers or impedance measurement modules. The audio analyzer grows with the application for manually-operated and fully-automated production lines.

Measurement Speed

Fast glide sweeps obtain all relevant measurement results from one short stimulus, typically less than a second. The FX100 has been optimized for factory noise immunity and high volume production. The sequence mode provides automated measurement of customized test sequences including Pass/Fail decision.

Ease of Integration

The FX100 Audio Analyzer bridges the demands of QC engineering for using the same instrument in R&D, sample inspection and on the production floor. Individual application projects may be transferred around the globe for fast setup.

PureSound™ Speaker Measurement (optional)

Leading-edge measurement technology unveils the speaker parameters including Rub&Buzz with one single stimulus. The patented PureSound™ technology provides a complete speaker characterization with an unmatched correlation to the human hearing. Two speakers may be measured at the same time! PureSound™ includes the turnkey production software.

Automation

All measurement data may be logged for detailed manufacturing control. The built-in digital I/O interface connects to peripheral devices, such as a foot switch or a stack light.
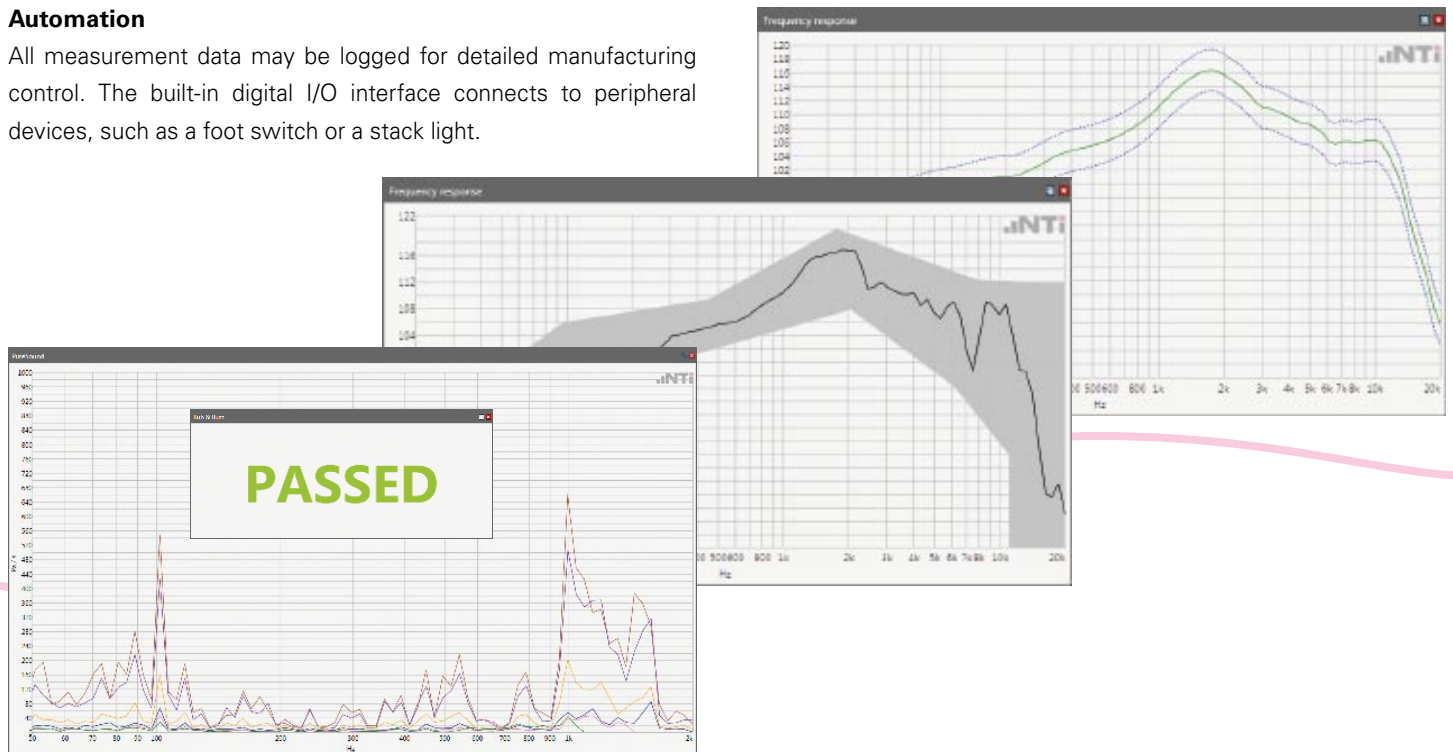
Flexibility

Fast Measurements

Ease of Integration

PureSound Rub&Buzz

Automation

PASSED

R&D MEASUREMENTS
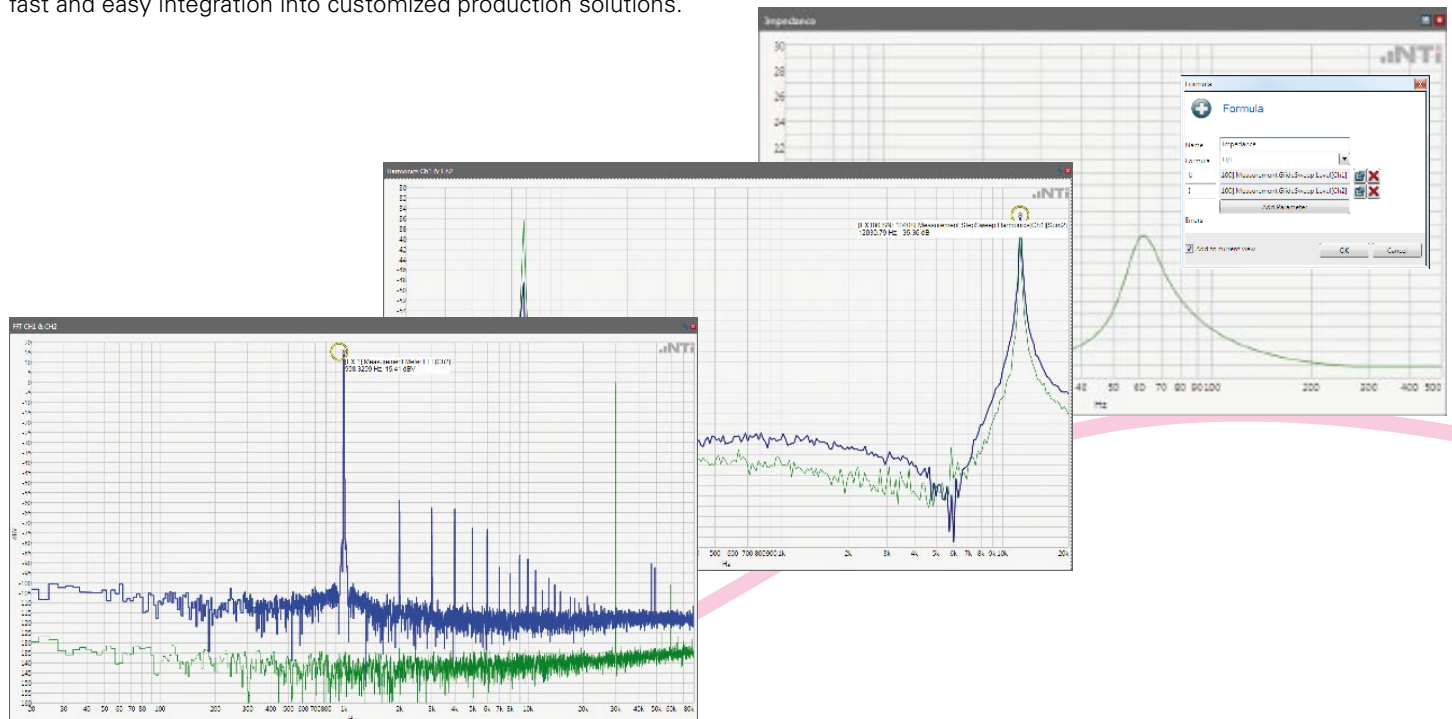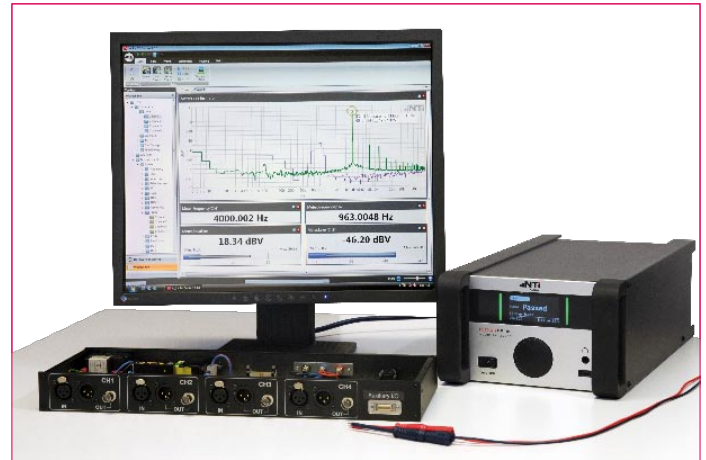
Fast Multi-Channel FFT

The high-resolution FFT with 192 kHz sampling rate presents a detailed analysis of the audio frequency spectrum. FFT graph panels may be customized showing one or more traces in the same panel simultaneously.

Sweep Measurements

Detailed R&D measurements are supported with Frequency, Amplitude, Time and Table Sweeps, which may trigger with internal or external signals.

Application Programming .Net

The FX-Control Suite software supports all .NET programming languages, such as C#.NET and Visual Basic.NET. These offer fast and easy integration into customized production solutions.

SPECIFICATIONS

| Analog Generator	
Test Signals	Sine, StepSweep, GlideSweep, White Noise
Level Range	10 µV to 12.45 V (–100 dBV to 21.9 dBV)
Level Accuracy	±0.04 dB
Level Flatness	< ±0.01 dB (10 Hz to 20 kHz)
Frequency Range	5 Hz to 80 kHz
THD+N	• –104 dB @ 1 kHz, 0 dBV (typical) • ≤ –101 dB + 0.8 µV (BW 22 kHz)
Analog Analyzer	
Measurement Functions	Level (selective & wideband), Frequency, FFT, Gain, THD, THD+N, Harmonics k2 to k35, Interchannel Phase, Crosstalk, Signal latency, DCV differential, DCV common high or low, DCR *optional*: PureSound™ Rub&Buzz
Sweeps	Frequency Sweep, Time Sweep, Level Sweep, Table Sweep
GlideSweep	100 ms to 40 s
Level Range	< 1.0 µV to 141 V (max 200 Vp), channel independent auto ranging
Level Accuracy	±0.04 dB @ 1 kHz
Level Flatness	< ±0.015 dB (20 Hz to 20 kHz)
Frequency Range	DC, 5 Hz to 80 kHz
THD+N	• –104 dB + 0.5 µV @ 1 kHz, 0 dBV (typical) • ≤ –104 dB + 0.5 µV (22 kHz BW)
Filters	• Lowpass 3.4 kHz, 8 kHz, 15 kHz, 20 kHz, 22.4 kHz, 40 kHz • Highpass 10 Hz, 22.4 Hz, 100 Hz, 300 Hz, 400 Hz • A-weighting, C-message
Crosstalk	≤ –125 dB + 1 µV (10 Hz to 20 kHz)
Input Bias Supply	2 VDC, 48 VDC Phantom Power, ICP®
Digital Audio	
Interfaces	• AES-EBU, S/PDIF and TosLink
General	
Channels	• 2 or 4 in-/outputs with independent signal / level / frequency control • XLR and BNC connectors
Extension Slots	3 empty slots in FX100 base unit for modular extensions
Interfaces	• USB 2.0 communication to PC • Headphone connector for audio out, 1/4" stereo jack
Pass/Fail Result	• Built-in digital I/O-interface for external peripherals controls • Dual-color display with green/red indication
FX-Control Suite	• PC Software with full access to all audio analyzer features • Parallel measurements with internal/external triggering • Calculation panels for mathematical processing of measurement data • Result reporting: txt-files, csv-files or xlsx-files • Full tolerance handling and hardware wiring diagram
Programming	Supports .NET assembly (e.g. C#.NET, Visual Basic.NET)
Design	Desktop use or ½ size 19" rack mounting, 3 rack units high

Get full specifications at www.nti-audio.com/FX100

ACCESSORIES

Power Amplifier FA400
with fixed +6 dB gain

M2010 / M2015
Measurement microphone
with class 1 frequency response
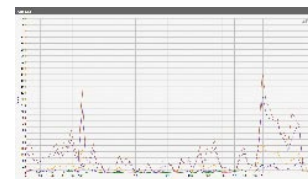
PureSound
Detecting all audible Rub&Buzz
of two speakers in parallel

ORDER INFORMATION

Base Unit	NTi Audio #
Flexus FX100 Audio Analyzer (2 Channel) including FX-Control Suite Software	600 060 000

Modular Extensions for Base Unit	
Channel Extension (extends to 4 individual input/output channels)	600 060 010
Input Switcher FX-IS (offers 4 additional input channels)	600 060 013
Output Switcher FX-OS (offers 4 additional output channels)	600 060 016
Speaker Impedance FX-SIL (for testing 2 speakers < 2 W simultaneously)	600 060 019
Speaker Impedance FX-SIH (for testing one speaker > 2 Watt @ 8 Ohm)	600 060 021
Digital Audio FX-AES (offers AES-EBU, S/PDIF and TosLink interface)	600 060 024

Accessories	
PureSound for Rub&Buzz Detection including Turnkey Production Software	830 000 200
M2010, 1/2" Measurement Microphone, 24 - 145 dBSPL	600 040 010
M2015, 1/2" Measurement Microphone, 34 - 155 dBSPL	600 040 015
Power Amplifier FA400 (2 channel)	600 061 000
19" Rack Mounting for one or two FX100	600 061 005/6

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