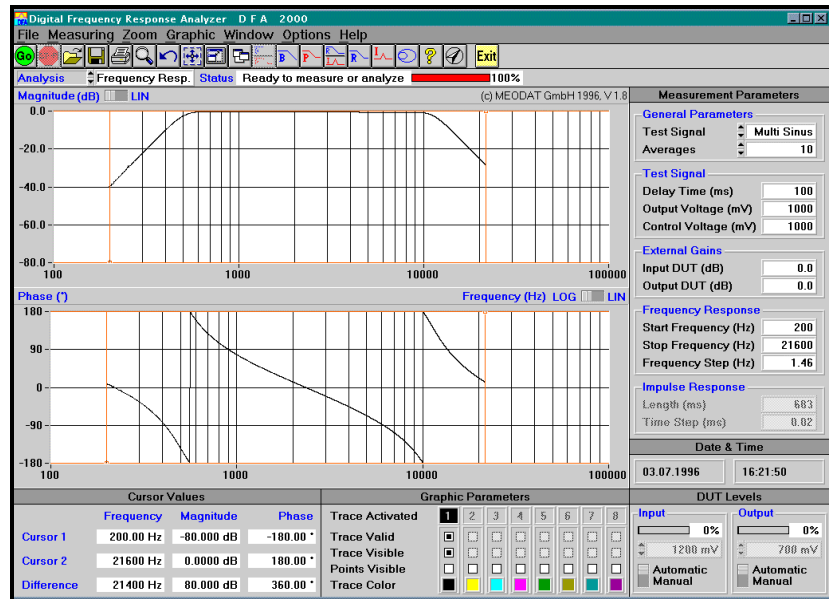
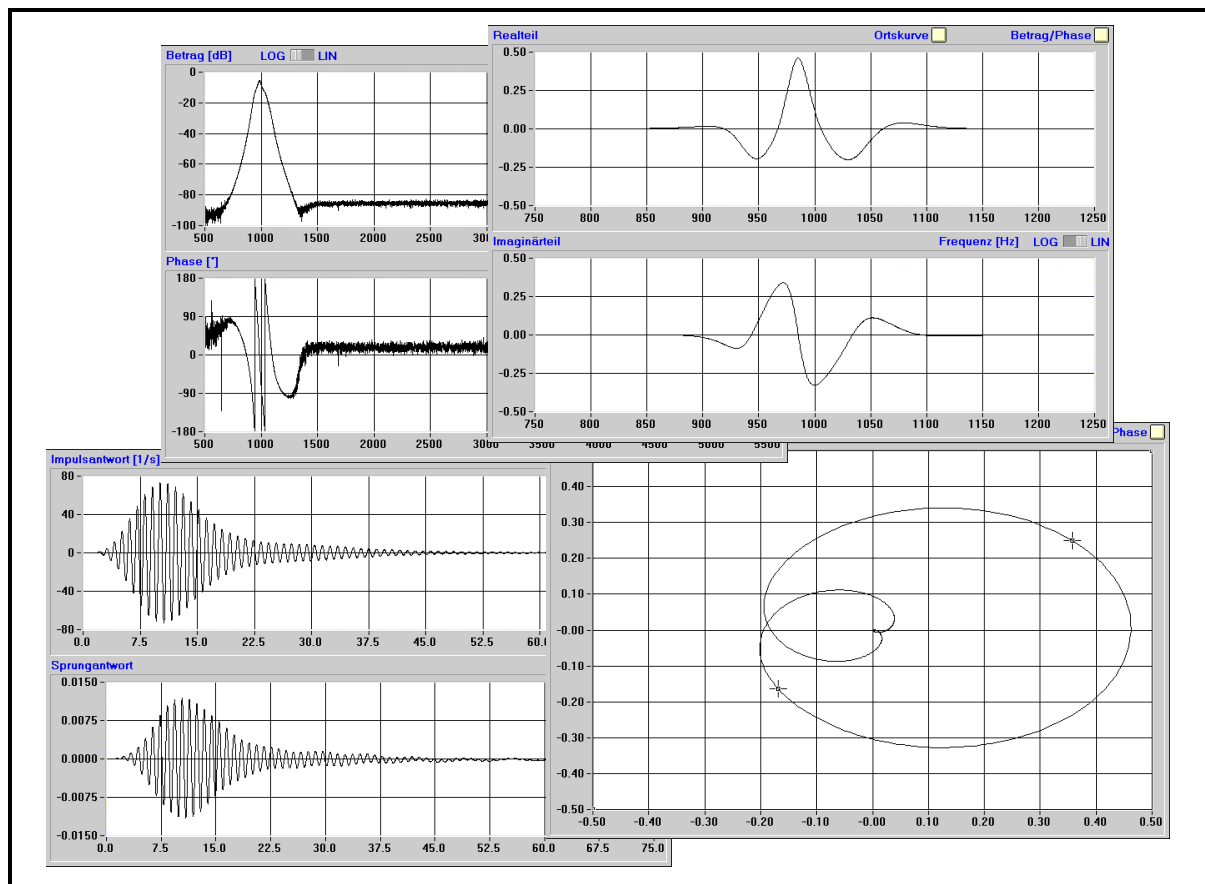


Frequency Response Analyser DFA - 2000

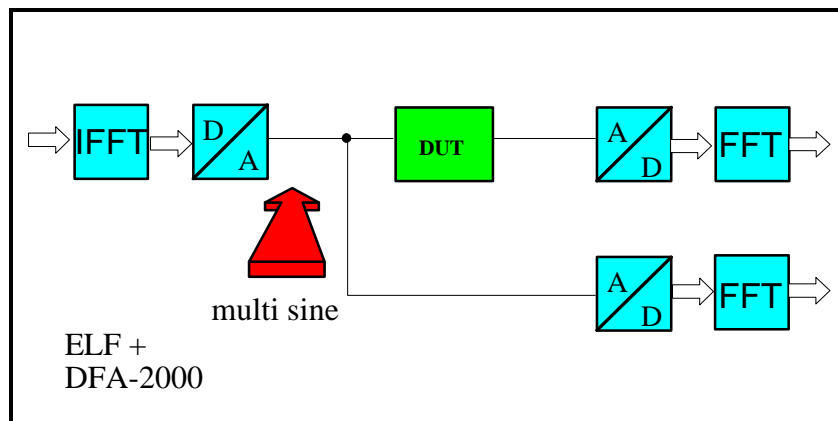
- Very precise Frequency Response Analyser for audio applications.
- Ideal for analysis of amplifiers, filters, microphones, loudspeakers, musical instruments etc.
- Adapts the test signal to the device under test to achieve high precision over a very short measurement time.
- Automatic self-calibration to produce an excellent channel match of better than 0.01 dB and 0.02 degrees.



- Frequency response measurement over a 20 Hz - 21.6 kHz range with a maximum of 14,700 spectral lines.
- Impulse responses determined to a minimum 21 μ Sec resolution and lengths of up to 32,000 points
- Simultaneous display of up to eight traces, each in a different colour
- Clear and efficient graphical display of amplitude and phase or real and imaginary parts versus frequency and Nyquist plots, as well as impulse responses.



Frequency Response Analyser DFA - 2000



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We will be pleased to send you further information.

Technical Data:

We reserve the right change the following specifications in the light of technical progress:

Analog Inputs:

stereo phone jacks: 3.5 mm
input voltage: $\pm 100\text{mV} \dots \pm 2.8\text{V}$
input impedance: $20\text{k}\Omega$
frequency range: $20\text{Hz} \dots 21.6\text{kHz}$
dynamic range: 80dB

Analog Outputs:

stereo phone jacks: 3.5 mm
output voltage: $\pm 10\text{mV} \dots \pm 1.4\text{V}$
output impedance: $10\text{k}\Omega$
useable bandwidth: $20\text{Hz} \dots 21.6\text{kHz}$
dynamic range: 80dB
channel deviation: 80dB

Option Digital I/O:

AES/EBU: XLR connector
S/P-DIF: RCA connector

A/D and D/A Converter:

type: delta sigma converter
resolution: 16 bit
sampling rates: $345\text{Hz} \dots 48\text{kHz}$
calibration: self calibration

General Data:

DSP board: ELF (aspi)
PC slot: 16 bit ISA
size: $220\text{mm} \times 122\text{mm}$
processor: TMS320C31, 33MHz
memory: 1 Mbyte DRAM
power requirem.: 5V, 5W; 12V, 1W typ.

host system requirements:
AT-PC at least 386, 8 Mbyte RAM,
WINDOWS 3.x or WINDOWS 95
screen resolution :
640 x 480, 800 x 600, 1024 x 768
and 1208 x 1024 , up to 256 colors

Analysis Functions:

The DFA-2000 offers a range of analysis functions to solve a host of audio measurement problems:

- **Frequency Response**
graphical presentation as:
 - amplitude and phase
 - real and imaginary part
 - Nyquist plot
 - linear or log scale

The DFA-2000 generates a test signal that is matched exactly to the FFT length selected, to produce a bias free spectrum and eliminate distortions due to systematic errors.

Outstanding channel symmetry is obtained through a comprehensive automatic calibration process which produces excellent channel deviation figures over the full frequency range. **(Amplitude better than 0.01 dB, phase better than 0.02 degrees and a dynamic range which exceeds 90 dB)**

- **Impulse and Step Response**

These responses are determined over a maximum period of 10 Sec. Up to 32,000 samples can be stored with a minimum time resolution of 21 μSec .

- **THD and SINAD**

Individual harmonics, or any combination of harmonics can be measured. An automatic amplitude sweep may be applied to the test signal to display the distortion versus amplitude.

Test Signals:

- **Step Sine testing**

The classical method for measuring frequency response. A discrete sinusoid signal of fixed frequency and amplitude is produced sequentially for each frequency line required and the

response determined point by point. Optimum utilization of the dynamic range available for measurement is ensured by automatic channel gain controls which prevent overload or under-utilization of the A/D converter.

- **Chirp**

- **Multi Sine**

In both cases all the necessary test frequencies are contained within one signal. The signal is optimized so that its entire energy is situated within the desired frequency range to produce a high signal to noise ratio, even when only a small amount averaging is applied. This method allows frequency response measurements to be made in less than one second.

Storage Functions:

All measured values and displayed results together with all device parameters (setups) can be saved. The values are stored in ASCII format so that they can be easily transferred to any evaluation program.

Display Functions:

All displays have an auto-scaling function. Detailed analysis is facilitated by zoom and graphical cursor functions and comparison of different measurements is enabled by the ability to display eight traces simultaneously.

Documentation:

Measurement results may be output to any WINDOWS compatible printer. Hardcopy files can be produced for export to other documents. Operator comments and even Corporate logos can be easily incorporated.