www.tescom.co.kr

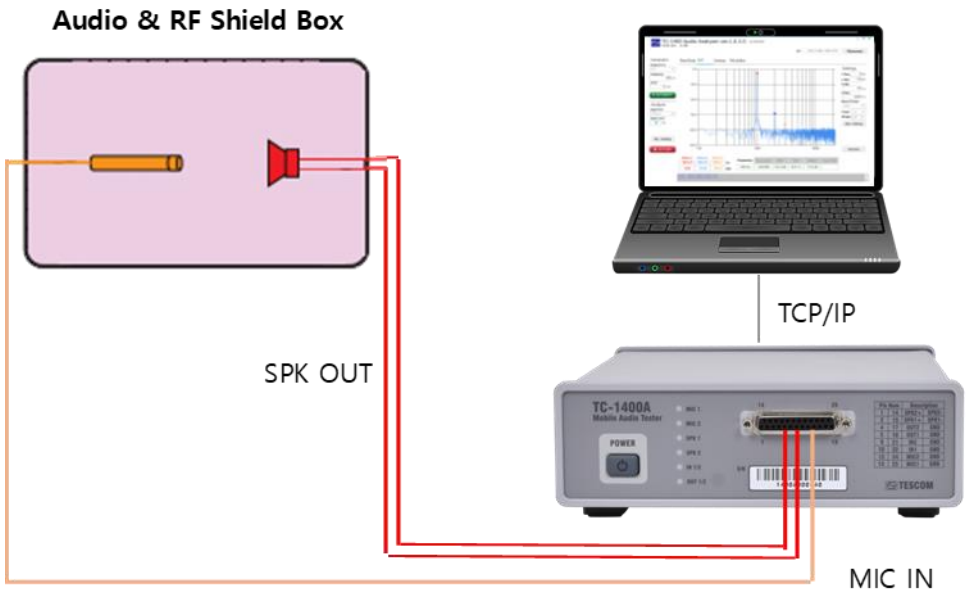
TC-1400A

AUDIO TESTER

TESCOM

Introduction

TC-1400A is an audio tester developed for performance tests of microphones & speakers.
TC-1400A includes both audio signal generator and analyzer. The audio signal generator can send a tone signal between 100 Hz ~ 10 kHz range in 1 Hz resolution and the audio analyzer can measure frequency, tone level, and distortion(SNR, SINAD, THD, etc.) of the signal simulatneously.

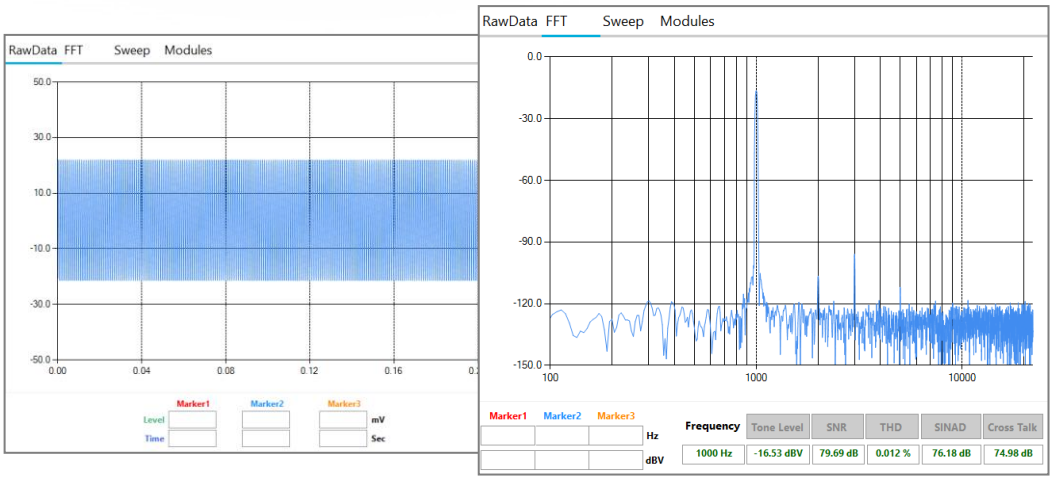


Benefits and key features

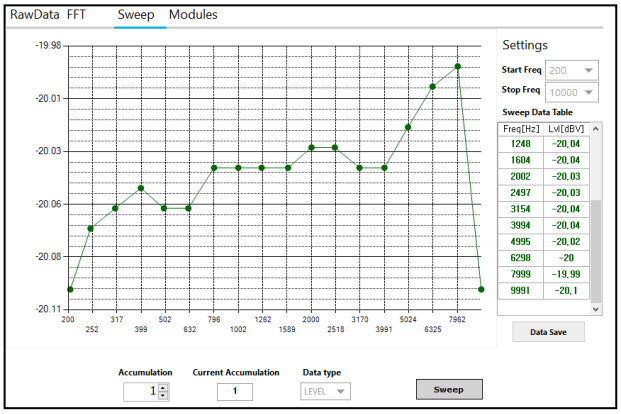
- Audio signal generator and analyzer in one unit.
- Easy to use and simultaneous audio performance tests: frequency, tone level, SNR, THD, SINAD. Switchable 4 port input (LINE IN L/R, MIC 1/2),
- Switchable 4 port output (LINE OUT L/R, SPK 1/2)
- Embedded Microphone circuit.
  - Simple microphone connection to MIC 1/2 port without a need for an extra circuit.
- Additional functionality available by equipping extra modules to DB25 port for specialized tests (ex: ear jack hook test, input impedance shift).
- Convenient remote control.
  - Remote control through ETHERNET port (TCP/IP) or USB Port (USB to serial) GPIB.
- Compact size for portability and easy set-up.

➢ Analysis software

- GUI for port setting, generator/analyzer control, signal analysis in time/frequency domains.
- Easy preservation of graphical data as a file(.csv).



➢ Audio sweep



➢ A part of custom audio testing solution

- With affiliated products such as Audio Shield Box, fixture, speaker, microphone, and automating software of Tescom, we can provide an optimal testing solution as a whole rather than just one equipment.

Ordering Information

Order Number	Description
	Audio Tester (including accessories below)
TC-1400A	Test Report RJ45 Cable, RJ45 8(p) - RJ45 8(p) 2M Power Cable

Specifications

■ Audio Analyzer

1. Input (LINE IN)

Input Port		LINE IN L / LINE IN R

Frequency Range		100 Hz ~ 10 kHz
Frequency Accuracy		±50 ppm
Frequency Resolution	by Num of point(FFT size/2)	ex) ±3 Hz @ 4096
Input Level Range		-5 dBV ~ -70 dBV
Input Level Accuracy	100 Hz ~ 10 kHz	≤ ±0.2 dBV
	10 kHz ~ 20 kHz	≤ ±0.5 dBV
Input Level Resolution		0.01 dBV
Noise Level [No Signal]		-94 dBV [20 uV]
Input Impedance		> 100 kOhm
Frequency Response	100 Hz ~ 10 kHz, referenced to 1 kHz	≤ ±0.1 dBV

Distortion @ -5 dBV / -20 dBV		
SNR	100 Hz ~ 10 kHz	>78 dB @ -5 dBV, >77 dB @ -20 dBV
SINAD	100 Hz ~ 10k Hz	>70 dB @ -5 dBV, >77 dB @ -20 dBV
THD	100 Hz ~ 200 Hz	<0.06 % @ -5 dBV, <0.01 % @ -20 dBV
	200 Hz ~ 10 kHz	<0.04 % @ -5 dBV, <0.01 % @ -20 dBV
Crosstalk attenuation	< 4 kHz	>64 dB
	< 10 kHz	>55 dB

2. Input (MIC IN)

Input Port		MIC IN 1 / MIC IN 2

Microphone bias voltage		5 V
Microphone bias resistor		4.7 kOhm
Frequency Range		100 Hz ~ 10 kHz
Frequency Accuracy		±50 ppm
Frequency Resolution	by Num of point(FFT size/2)	ex) ±3 Hz @ 4096
Input Level Range		-20 dBV ~ -70 dBV
Input Level Accuracy	100 Hz ~ 10 kHz	≤ ±0.2 dBV
	10 kHz ~ 20 kHz	≤ ±0.5 dBV
Input Level Resolution		0.01 dBv
Noise Level [No Signal]		- 100dBV [10 uV]
Input Impedance		> 100 kOhm
Frequency Response	100 Hz ~ 10 kHz, referenced to 1 kHz	≤ ±0.1 dBV

Distortion @ -20 dBV		
SNR	100 Hz ~ 10 kHz	>69 dB @ -20 dBV
SINAD	100 Hz ~ 10 kHz	>64 dB @ -20 dBV
THD	100 Hz ~ 10 kHz	<0.05 % @ -20 dBV
Crosstalk Attenuation	< 10 kHz	>70 dB

■ Audio Generator

1. Output (Line Out)

Output Port		Line OUT L / Line OUT R

Frequency Range		100 Hz ~ 10 kHz
Frequency Accuracy		±50 ppm
Frequency Resolution		1 Hz
Signal Source	24 bit	PCM
Output Impedance		16 Ohm (Typ.)
Output Level Range		-5 dBV ~ -60 dBV
Output Level Accuracy	100 Hz ~ 20 kHz	≤ ±0.2 dBV
Output Level Resolution		0.1 dBV
Noise Level [No Signal]		-100dBV [10 uV]
Frequency Response	100 Hz ~ 20 kHz, referenced to 1 kHz	≤ ±0.15 dBV

Distortion @ -5 dBV / -20 dBV		
SINAD	100 Hz ~ 10 kHz	>77 dB
THD	100 Hz ~ 10 kHz	<0.01 %
Crosstalk attenuation	< 20 kHz	>90 dB

2. Output (SPK Out)

Output Port		SPK OUT 1 / SPK OUT 2

Frequency Range		100 Hz ~ 10 kHz
Frequency Accuracy		±50 ppm
Frequency Resolution		1 Hz
Signal Source	24 bit	PWM
Output Impedance		3 Ohm (Typ.)
Output Level Range		6 dBV ~ -60 dBV
Output Level Accuracy	100 Hz ~ 20 kHz	≤ ±0.2 dBV
Output Level Resolution		0.1 dBV
Max Voltage / Power	2 Vrms	1 W (ref. 4 Ohm)
Noise Level [No Signal]		-85dBV [60 uV]
Frequency Response	100 Hz ~ 20 kHz, referenced to 1 kHz	≤ ±0.1 dBV

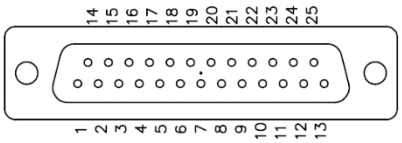
■ Port Descriptions

[Front Panel]

[Rear Panel]

1. Front Panel

I/O	Function	Type
Soft Power Button	Power on/off	Push on/off button
Audio Port	Audio IN / OUT Port	DB25



Pin Num		Description	
13	25	MIC1	MIC_GND
12	24	MIC2	MIC_GND
10	22	INPUT 1	GND
9	21	INPUT 2	GND
5	18	OUTPUT 1	GND
4	17	OUTPUT 2	GND
2	15	SPK1+	SPK1-
1	14	SPK2+	SPK2-

*** Input Maximum rating : 3.3V**

LED	Audio IN / OUT status	Six(6), LED indicator

2. Rear Panel

I/O	Function	Type
LAN	External PC Remote Control	Ethernet RJ-45 connector
USB 2.0	USB port for extra device	2 x USB 2.0 type A connector
AC in	Rated voltage	100 - 240 V~ (±10 %)
	Rated frequency	50 - 60 Hz (±5 %)
Power consumption	Stand by	<1 W
	Typical	<7 W
	Maximum	< 15 W

■ Miscellaneous

Dimension	196(W) x 226(D) x 70(H) mm
Weight	1.7 kg
***Packing Size**	464(W) x 345(D) x 146(H) mm
***Packing Weight**	3 kg

*The size and/or weight of a package may vary depending on how the package is packed

Temperature	Operating temperature range	+5 ℃ to +45 ℃
	Storage temperature range	-5 ℃ to +55 ℃
	Specification validity temperature	+15 ℃ to +35 ℃