

AVE Measurement Tool

// A complete tool for your measurements



AVE-TSE-2752 is a versatile, fully digital, measuring instrument designed to test and simulate connection lines and interfaces for voice communication in air traffic management and control.

This flexible instrument leverages on SITTI decades of experience in manufacturing VCS systems, by taking into account all applicable industry recommendations and standard requirements.

The AVE device includes a test signal generator (analog and digital) and is able to interface all the lines and connections that a VCS normally handles: 2W and 4W analogue lines, E1 digital links and Ethernet-type LANs.

Thanks to AVE-TSE-2752, it is possible to make accurate measurements of analogue and digital telephone lines (BL, FXS, FXO, etc.), remote analog or VoIP radios and telephones. In addition, it offers the possibility to test signals used at a standard Controller Working Position (headphone, micro-phone, PTT) and allows to easily set the input/output impedance values to adapt the physical connection to the type of impedance of the unit under consideration.

AVE-TSE-2752 is configurable both through the front touchscreen screen and through a Web Server application. The compact physical case (3U height) permits to integrate it into a standard 19" rack or to be placed on a desk, thanks to convenient transport handles.

// Interfacing capabilities

Analogue interfacing:

- 2W/4W
- LB, FXS, FXO (2W) and Calling Voltage
- Input and Output impedance configuration (HiZ, 150 Ohm, 300 Ohm, 600 Ohm, ..)
- Current Loop facility
- Auxiliary Contact (with PTT/SQUELCH)
- Microphone/headphone signals for operative position

E1 interfacing:

- Line selection (Line 1 or Line 2)
- Synchronization mode (A-Side/B-Side)
- Operational mode: PCM30 or PCM31
- CRC4 On/Off capability
- By-Pass or Drop-Insert configuration
- Measurement TDM Slot selection facility (from 1 to 32, either RX or TX)

LAN Interfacing:

- RTP Parameters setting on the two audio measurement session (IP/Port Source, IP/Port destination).

Generator parameters:

- Frequency Range 300Hz-3400Hz
- dBm Level Range adjustment
- Output impedance setting

Serial data

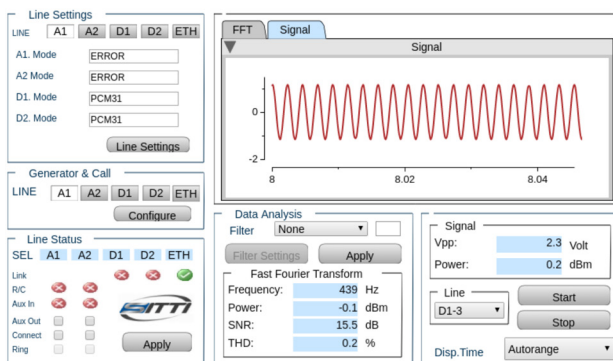
- Synchronous/asynchronous RS232
- HDLC

Measurement:

- Input Impedance settings: 150, 300, 600 Ohm and HiZ
- Output Impedance settings: 150, 300, 600 Ohm
- Runtime display of the measurements by the front display

Multi Functional Touchscreen

The wide touch-screen display with 800x480 pixels resolution presents a user interface divided into comfortable functional areas, through which to set the parameters of the lines under test and to visualize the results of the measurements in an easy and intuitive way.



- The Line Settings and Line Status sections allow configuration and monitoring of the various types of connections, as well as to detect/activate Ring signals (FXO and BL mode), current traffic signal (FXS mode) and SQUELCH/PTT signals.
- The Signal & FFT area allows to visualize the graph of the progress of the signals in both time and frequency domains, while the Data Analysis section provides numerical information about the peak-to-peak voltage, the harmonic power (dBm), the signal frequency with maximum power, the SNR (Signal to Noise Ratio) and THD (Total Harmonic Distortion) values. User definable filters are applicable including: Psophometric, Band-Pass, Notch, Narrow, etc.
- In the Generator & Call window, the user can choose the parameters for generating test signals to connected external devices. Many types of signal are generated: audio files with custom waveforms, white noise, pink noise, error signals for digital lines (CRC errors, CAS, FAS, Bipolar, Prbs), RTP packet streams (with ability to set period and jitter). Also, thanks to the Call function, an incoming call can be redirected to other remote devices connected to AVE-TSE-2752.

In summary, AVE is an essential tool for R&D and production engineers, looking for the best performance with a wide range of input/output options for measuring and testing signals.

// AVE-TSE-2752 Technical Data

Basic Characteristics

Operative System	OS Linux Ubuntu 16.04 LTS
Microprocessor	Embedded Intel Atom/ Celeron Processor E3845
RAM Memory	Dual Channel DDR3L-1333 SODIMM 8 Gb
Hard Disk	MSata SSD 64Gb
Touch Screen display resolution	800x480 pixel
Power supply	AC 230 V – 50Hz

Communication Ports

- 2 ports USB 2.0
- 4 digital connections (back)
- 8 analog connections (back)
- PTT/squelch connections (back)
- 1 microphone/headphone jack input (front)
- 1 port VGA (on the front)

Recommended Settings (remote connections)

Browser	Google Chrome/ Chromium/Firefox
Headphone & Microphones	Frequency response: 20-20.000Hz Speaker Impedance: 32Ω Sensibility: 100 dB Jack: 3.5 mm.