
Central Office Line Simulator AI-7280



- Generates Caller ID FSK and DTMF
- Decodes FSK signals Bell 202 and V.23
- SMS (Short Message Service) Send and Receive
- Signal analyser for DTMF, pulse and short AC waveform
- Measures DC line voltage and loop current
- Constant current or constant voltage mode line feed
- Generates ringing as sine wave, triangle or square
- External Box with RS 232 and USB support

Application

The AI-7280 is a universal tool for development, type approval and production testing of common terminal equipment like standard telephones, Caller ID devices and SMS capable systems.

Description

The AI-7280 is controlled by a PC via a USB or RS 232 port. All parameters are set up in a menu and all test results are shown in a menu as well.

The AI-7280 can also be controlled by DLL commands or directly by commands via the RS 232 interface. It has a fully programmable DC feeding and measures the DC and AC characteristics found on a telephone line.

A pass/fail test can be made for received DTMF signals, dial pulses and SMS messages.

Up to four different tones can be generated at a time including FSK (Frequency Shift Keyed), AM (Amplitude Modulation), DTMF and MF (Multi Frequency) signalling tones.

It measures RMS level, DC, frequencies and TDH+N (Total Harmonic Distortion + Noise) with a wide range of adjustable filters.

In addition it decodes Bell 202 or V.23 FSK signals for Caller ID and SMS application.

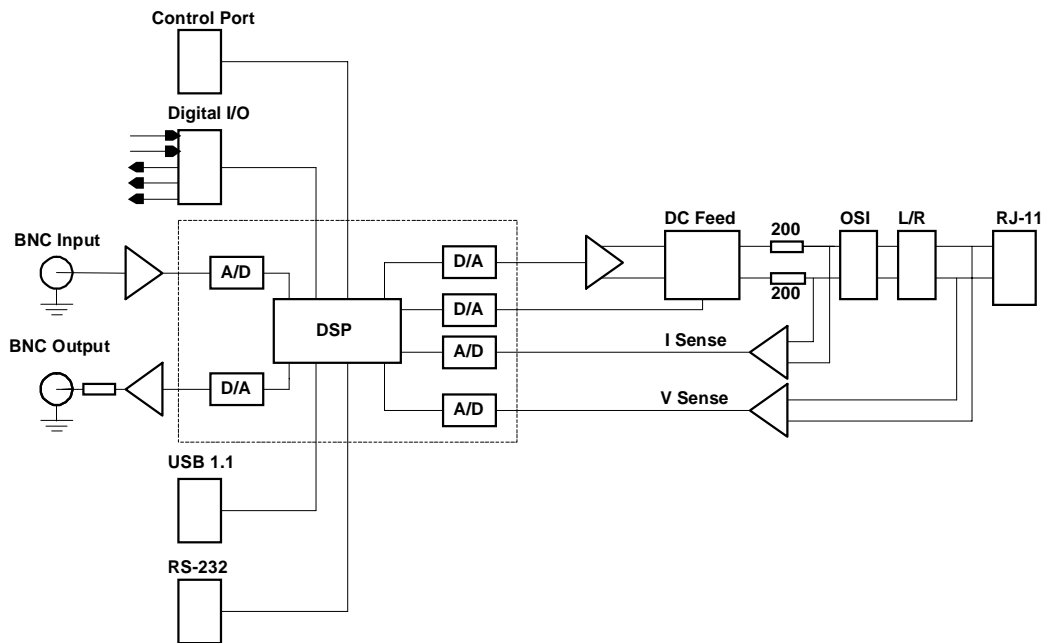
All the signal generation and analysis is performed by a programmable DSP, allowing for future firmware upgrades.

The input is a standard RJ11 telephone socket. Four LED's on the front panel indicates: Ready, Communication, Ringing and Off-Hook status.

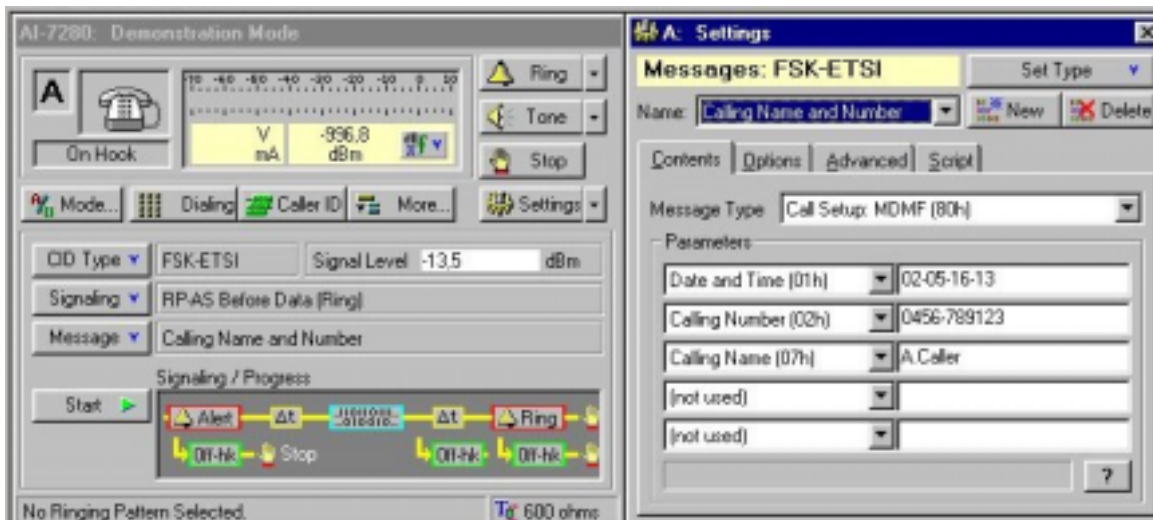
Hasselriis Electronics - Telecom Test Equipos

Urb Baviera Golf, Las Claras 4, 29751 Caleta de Vélez, Malaga, España
Tel: 660 909 775 E-mail: he@hasselriis.com Website : www.hasselriis.com

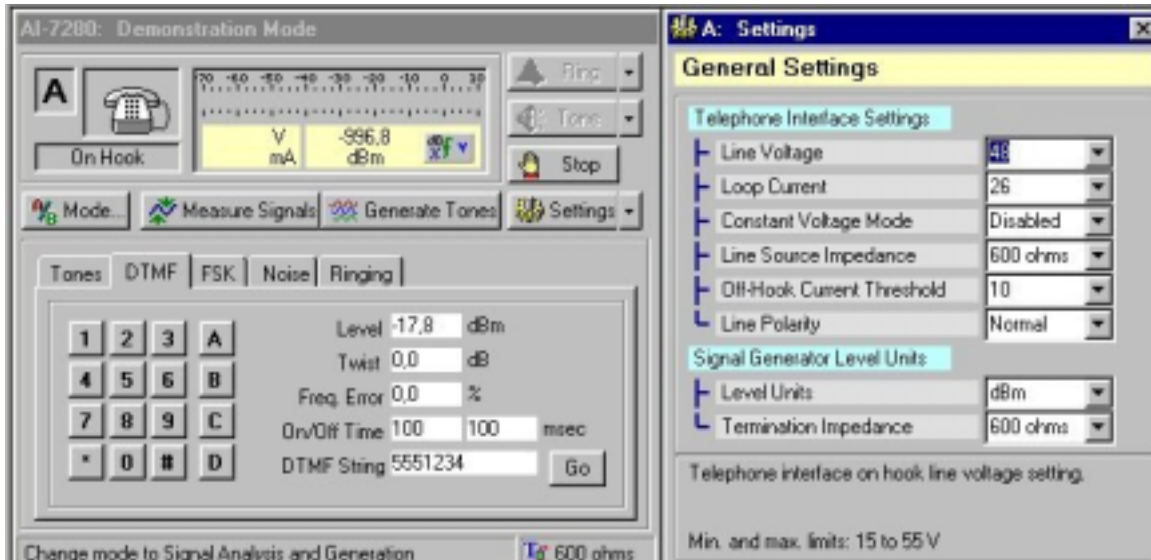
Block Diagram



Caller ID Generation Menu



DTMF Generation Menu



Telephone Line (RJ-11)

DC Characteristics

- Programmable Feed Voltage 15V to 55V
- Programmable Feed Current 15mA to 55mA. 70mA in VM mode
- Programmable dc offset during ringing 15V to 55V
- Programmable Feed mode Constant Voltage or Constant Current
- Feed resistors 2 x 200Ω
- Programmable off hook detect threshold 5mA to 15 mA
- Generation of Open Switching Interval
- Generation of Line reversal
- Over current and Over voltage protection
- Unbalance current protection

AC Characteristics

- 4 Programmable AC signal generators 20Hz to 18 kHz
- Generator Frequency response ± 0.2 dB, (50 Hz to 10 kHz)
- Generator Frequency accuracy 0.015%
- Programmable wave shape Sine, Square, Triangle, user
- Generator Level + 4 Vrms max.
- 4 Programmable Source impedances 600Ω, 900Ω, TBR21 and int. socket
- 2 wire Return Loss 37dB, (300Hz to 3 kHz)
- 4 Programmable Balance impedances 600, 900, TBR21 and internal socket
- Ring Generator Load 5 REN capable
- Programmable Ring generator 10Hz to 100Hz
- Programmable Ring amplitude 0V to 80 Vrms
- Programmable Ring wave shape Sine, Square, Triangle, user

DC Characteristics

Hasselriis Electronics - Telecom Test Equipos

Urb Baviera Golf, Las Claras 4, 29751 Caleta de Vélez, Malaga, España
 Tel: 660 909 775 E-mail: he@hasselriis.com Website : www.hasselriis.com

• DC Voltage on Tip and Ring	0V to ± 200V DC
• DC Current on Tip and Ring	0mA to 100mA
AC Characteristics	
• True RMS level Measurement	20Hz to 18 kHz
• Frequency response	± 0.2 dB, (50 Hz to 10 kHz)
• DTMF Measurements	Level, Frequency, Timing
• Selectable AC Filters	LPF, HPF, Band pass, Notch, DTMF, C-message
• Pulse Dialing Measurements	Make/Break, PPS
• Flash Timing measurements	Duration
Input and Output	
BNC Input	
• Unbalanced, AC coupled input, ground referenced	
• Input impedance	100 kΩ ± 3%
• Input Level	5 Vpp, Max
• Frequency Range	10 to 18 kHz
• Frequency Response	± 0.2 dB, (50 Hz to 10 kHz)
• Max. DC offset	55V DC
• Input routing to	Tip and Ring, Meter, and BNC output
BNC Output	
• Unbalanced, ground referenced	
• Output impedance	600 Ω ± 3%
• Output level	5Vpp, Max
• Frequency Range	10Hz to 18 kHz
• Frequency Response	± 0.2 dB, (50 Hz to 10 kHz)
• Output monitoring for Generator, meter, BNC input	Tip and Ring, Transmit, Receive,
Digital I/O Connector	
• 3 Outputs	
• 2 Inputs	
Control Port	
• Expansion for future use	
RS-232	
• Connector	DB9
• Configured	DCE
USB 1.1	
• Connector	4 pin, peripheral
AC Line	
• AC Line requirements	90V to 264V
• AC Frequency	47Hz to 63 Hz
Physical	
• Size	26x27x9cm.
• Weight	2.1kg.

Hasselriis Electronics - Telecom Test Equipos

Urb Baviera Golf, Las Claras 4, 29751 Caleta de Vélez, Malaga, España
 Tel: 660 909 775 E-mail: he@hasselriis.com Website : www.hasselriis.com