

CLASS600

Universal telephone network simulator and terminal simulator

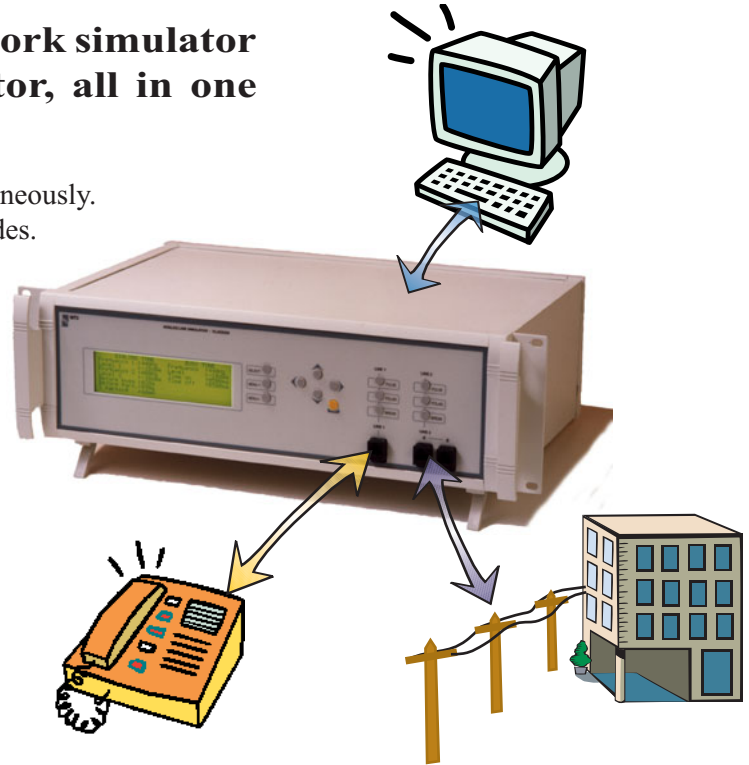
For the first time SMS network simulator and SMS terminal simulator, all in one

Standalone :

- Up to 100 network configurations instantaneously.
- SMS Service Center or SMS terminal modes.
- CallerID type I and II. Any standards.
- Two independent and floating plugs.
- Running of embedded scenarios.

Remote controlled :

- Complete SMS analyser.
- CallerID frames creation.
- Full control of the equipment.
- Powerful scenarios editor/interpreter.
- Real time signal analysis (FFT based).



A performance concentrate.

Electronics :

- The feeding bridge has some of the main characteristics of the famous PA100 feeding bridge. The terminal simulation uses the same robust architecture with separate DC and AC management. Modulation, received or transmitted, is processed by a powerful DSP unit and 16bits/48KHz conversion. This approach gives the CLASS600 improved results in terms of accuracy and dynamics. The large LCD screen contributes to the exceptional ease of use of the CLASS600.

Signals :

- Specific algorithms dedicated to telephony signals (DTMF, modem, ...) are added to FFT based analysis. Generated signals are accurate (level and frequency) and stable. Numerous signals can be processed simultaneously.

Working modes :

- **Standalone**, as standard network emulator : A situation the CLASS600 excels in: Internal data base offers 100 configurations for each line, 20 CallerID frames of each type and the Service Center for SMS can receive and transmit protocol 1 or 2 ETSI messages.
As a terminal simulator : The CLASS600 in quiescent state is ready to receive CallerID and SMS . It can establish a loop state, dialling with independant DC resistance and AC impedance.
- **Executing a scenario**. One of main strengths of CLASS600 is to be able to load and execute a specific scenario. It is then transformed into a specific tool dedicated to the test you wish to carry out.
- **Remote controlled by a PC**. Numerous and complex tests can be carried out and related to larger resources or production management. Remote control dictionary of the CLASS600 is exhaustive and allows real time information on events. The CLASS600 is delivered with CLASS-SOFT (see next page).

Applications.

- Hardware R&D : to test circuits in all (non)working conditions.
- Software R&D : to test algorithms, and errors events.
- Quality : compliance, verification, quality insurance, certification.
- Marketing : for safe demonstrations with the right network simulation or terminal behaviour.



SM-SC architecture

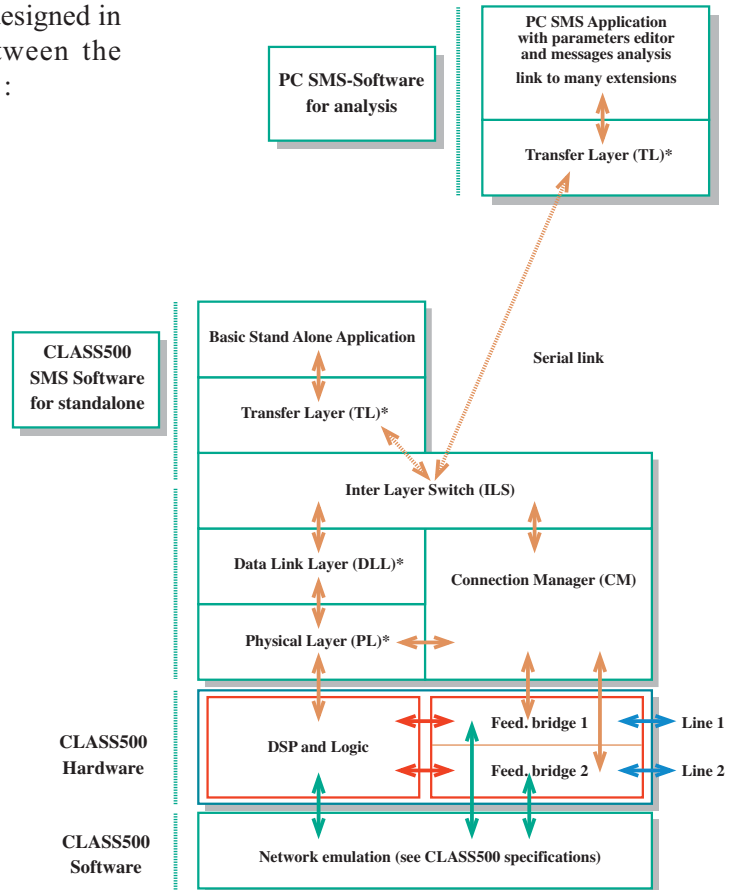
- The SM-SC architecture of CLASS600 is designed in order to have an automatic choice between the standalone or the remote control operation :

Standalone mode

- In standalone mode, the CLASS600 can receive and transmit Short Messages in accordance with the protocol chosen.
- If the message contains errors, the server or the terminal will respond in accordance with the ETSI standard.
- With a scenario loaded it is possible to send a specific message or several messages or even a more complex sequence.
- Although it is not allowed by the standard, a received message from a terminal can be sent to the same terminal on the same line in order to facilitate tests.
- Terminal section allows manual Hook On/Off, Dialling, Flashing and sending of a SMS.

Remote mode

- **CLASS-SMS is a very powerful software** for a complete and precise analysis and simulation of Short messages received from or sent to the terminal or to the SM-SC depending on the mode selected. **One important feature is the ability to simulate errors from physical layer up to protocol layer.** But still the human interface of the SM-SC is simple and user friendly.
- **Delivered with a complete set of test configurations in accordance with STI27 and SM-SC specifications (France Telecom) and ES201 912 (ETSI).**



* : in accordance with ES 201 912 definition

CLASS-SOFT

CLASS-SOFT is a software offering :

- Access to SMS analysis. Good for both the test of a terminal and for the test of a SM-SC.
- Access to CLIP management. FSK or DTMF, type I and type II CallerID. Compatible with European, US, Australia, Asian standards and others. Physical layer is also configurable. Terminal simulation is fitted with CallerId type I only.
- Scenario editing, debugging and managing. This very powerful feature allows the creation of scenarios that can be downloaded in the equipment for a standalone mode. Ideal for after sale services, for example.
- Immediate access to all the parameters of the CLASS600 : feeding bridge, tones, pulse metering, numbers, memories, satellite delay, etc.
- Immediate use of the FFT analysis functions : frequency and level of the most significant signals, selective level measurement.

CLASS-SOFT is an all-in-one software, user friendly, that helps you to use the fantastic possibilities of the CLASS600. It is delivered with the equipment.



SIM'COM CLASS 600 - Technical specifications

Line emulator

- **Line current** (normal and parking) : 5 to 99mA in steps of 1mA. Display of line current.
- **Line resistance** : 250ohms to 12 950ohms in steps of 100ohms.
- **Line pick-up detection** : From 5 to 99mA. Non detection : 30% below the line pick-up detection.
- **Battery voltage** : 10 to 75V in steps of 1V (120 V-Option C2).
- **Impedance** : 600Ω (200Ω for 12 and 16KHz - Option D) or external.
- **Tone** : 2 frequencies of 200 to 5 000Hz in steps of 1Hz. Levels : -60 to +10dBm or OFF.
Times before "Busy" and before "Parking" from 0 to 250s in steps of 1s.
- **Busy signal** : From 200 to 5 000Hz in steps of 1Hz. Levels : -60 to +10dBm in steps of 1dBm.
ON and OFF time : 0 to 9 990ms in steps of 10ms.
- **Gain L1<->L2** : From -60dB to +10dB in steps of 1dB. (Gain L1->L2 and L2->L1 independant - option G)
- **Satellite delay** : From 2,5 to 2 000ms in steps of 2,5ms.
- **Ringing** : Frequency from 17 to 120Hz in steps of 1Hz. Level : 10 to 99Vrms in steps of 1V.
ON time : 0 to 9 990ms in steps of 10ms. OFF time : 0 to 9 990ms in steps of 10ms.
Nbr. of rings : 1 to 99 or continuous.
Polarised and non-polarised mode.
- **«B answer» Signalisation** : Charging signal, polarity reversal, DTMF or single tone
(2 frequencies from 200 to 5 000Hz in steps of 1Hz.
Level : -60 to +10dBm or OFF. Time from 0 to 9 990ms in steps of 10ms).
- **Charging signals** : 12 and 16 kHz in differential mode, Levels : 5 to 4 000mVeff (e.m.f. value).
ON time : 0 to 9 990ms in steps of 10ms. OFF time : 0 to 999s in steps of 100ms.
Nbr. of pulses : 1 to 999. Automatic or manual.
Quantum pulses : 1 to 99 ascribable to each number.
Inter-time from 0 to 2 000ms in steps of 10ms.
- **Reversed polarity** : Controlled by the detection of called line pick-up (with return to normal position when called line returns to quiescent state) or via the control panel on the front side. The switch-over passes through a "0 Wait state" (0Ws) which is programmable between 0 and 9 990ms in steps of 10ms.
- **Impairment**: Opening of the line from 0 to 2,5s in steps of 10ms.
- **Detection of DTMF and decimal numbering** (10Hz and 20Hz).
Assignment of a call number to each line (17 digits max).
- **Detection of «Flashing»** : From 50 to 400ms (signalisation).
- **Internal numbers with answering machine functions**, for rapid telephometric testing.
- **Configuration memories** : 10 (EEPROM).

Terminal emulator

- **Line current limitation** : 5 to 99mA in steps of 1mA. Display of line current.
- **Internal resistance** : 250ohms to 12 950ohms in steps of 100ohms.
- **Impedance** : 600Ω (200Ω for 12 and 16KHz - Option D) or external.
- **Call detection** : Number of ring patterns before loop stae adjustable.
- **Hook On/Off** : Manually or remote controlled.
- **Dialling** : Pre-recorded number, manually or remote controlled. Level and timing adjustable.
- **Flashing** : Manually or remote controlled. Timing adjustable.
- **Sending of a SMS** : Manually (Pre-recorded message) or remote controlled.

Caller ID signals generator (FSK&DTMF) & Caller ID detector (FSK).

- **Type I and II** signals according to a model built with a PC and loaded through the RS232 serial link.
- **Script memories**: 20 of each type. Script is the Caller ID frame description, do not confuse with Scenario.
- **Script execution** : Manual, remote controlled or automatic by calling from one line to other. Example : Calling line 1 from line 2 generates a type I script if line 1 is idle or type II if it is busy (communication with an internal line for example).

In a script editing, the following signals can be used with a precise timing (step of 10ms or 1bit for FSK) :

- **Tone** : Frequency of 200 to 5 000Hz in steps of 1Hz. Levels : -60 to +10dBm in steps of 1 dB.
- **FSK Mark and Cesure bits** : Frequencies and levels as for tone.
- **FSK rate** : 120 to 4800 bits/s. Nb of start/stop bits : 0 to x (65535 max).
- **Ringing generator** : See specifications of line emulator.
- **DTMF (generator)** : Q23, level of each frequency adjustable from -60 to +10dBm (steps of 1dB).
- **Polarity reversal (generator)** : See specifications of line emulator.
- **White noise generator** (pseudo random) : OFF or from -60 to +10dBm (steps of 1dB).

Miscellaneous

- **Serial link** : RS232C.
- **Power supply** : 230V ±10%. (115/230V - Option B)
- **Temperature range**: operation at 5 to 40 °C.
- **Dimensions** (L x W x D): 350 x 250 x 85 mm. 19" rack - 6U
- **Weight** : 5 Kg approx.