Documentation

OpenStage
HUSIM Phone Tester

User Guide

Communication for the open minded

SIEMENS

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Siemens Enterprise Communications
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SUMMARY

1. What is HPT

HUSIM Phone Tester (HPT) is a tool used to remote control Siemens Enterprise OpenStage phones through a Windows PC. It is used to simply reproduce the real phone behavior in a Windows GUI, generate stimulus to the controlled phones.

1.1.   Test interface

All IP phones have a test interface mechanism implemented. For this purpose a test protocol was created in order to exchange commands request and indications between the phone and the remote software client. It is the TMIF protocol specified on the FDB5_IP_test_interface.doc document.

1.1.1.   Enabling Open Stage test interface

When using IP/HFA models the user must enable test interface. It could be done by loading a certification key file called by *dongle key*[1] into the telephone. Every single phone version has a different certify that has to be separately loaded to the phone in order to provide test interface activation every time the phone firmware is updated.

To load the dongle key into the telephone, user must know the telephone IP address, as well the password to access the telephone data (Default password: 123456). All IP telephone models have a web interface containing all related telephone configuration. To access this page just select the chosen phone on HPT main dialog and click on IP phone web page button, this action will open the telephone web interface using I.E. navigator.

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[1] Dongle key: Certificate file which enables open stage test interface.

Figure 1. Main page web interface.

From this page, as shown on figure 1 user can access the following services for the telephone:

- User pages

    This area contains all user assigned configurations, as follows:

    - User login;

    - Date and Time;

    - Audio;

    - Configuration;

    - Phone;

    - Locality;

    - Authentication.

- Administrator pages

    This area contains all administrator assigned configurations, as follows:

    - Admin Login;

    - Applications;

- o Network;
- o System;
- o File transfer;
- o Local functions;
- o Date and time;
- o Speech;
- o General information;
- o Authentication;
- o Diagnostics;
- o Maintenance.

Both on user pages and administrator pages user can quickly obtain a complete overview of all telephone information's. To get complete access to telephone data the user must log in by entering password when asked, it's necessary to know the telephone firmware version because each one has its own dongle key. The user can check the current telephone firmware clicking General information link, on administrator pages tab.

The main way to load the dongle key file into the telephone is by FTP method, the file must be related in a FTP server with a valid IP address. On telephone file transfer page, as shown on figure 2, user can set all FTP data which will be used to download the dongle key file from FTP server to the telephone, the option "start download" on "After submit" field must be enabled.

Figure 2. Telephone file transfer page.

If successfully, the message on figure 3 will be displayed; else an error message is launched.

Figure 3. Transfer completed successfully message.

2. Main dialog

2.1. Main dialog options

The HPT main dialog is showed on figure 5.

Figure 4. HPT main dialog.

- [a] **New file** – Create a new database file.
- [b] **Open database** – Opens an existing database file.
- [c] **Close database** – Close the database file.
- [d] **Save database** – Save the database file.
- [e] **Insert new clients** – Insert new clients into the database file.
- [f] **Admin HUSIM Server** – Allows add or remove HUSIM servers and set the default system to be used.

- [g] **Connect All Clients**[1] – Connect all database file listed telephones.
- [h] **Disconnect All Clients** – Disconnect all database file listed telephones.
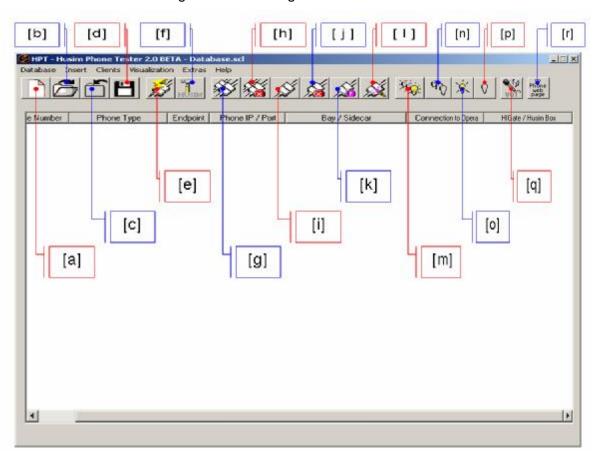- [i] **Connect Selected Clients** – Allows to connect just selected telephones.
- [j] **Disconnect selected clients** - Allows to disconnect just selected telephones.
- [k] **Modify parameters of the selected clients** – Allows to modify dialog data from selected telephones.
- [l] **Delete selected clients** – Remove selected telephones from database file.
- [m] **Show all Clients** – Shows all connected telephone GUI's.
- [n] **Hide All Clients** – Hide all connected telephone GUI's.
- [o] **Show Selected Clients** – User can specify which telephone dialog instances will be shown, since these instances are being executed.
- [p] **Hide Selected Clients** - User can specify which telephone dialog instances will be hidden, since these instances are being executed.
- [q] **Execute a voice quality test** – Executes a Speech Test/ VQT-Voice Quality Test/ ACP-Audio Channel Presence between two selected telephones. It will open another dialog to select phones A and B that will perform the Speech Path Test. In order to have a successful test result there must be opened voice channel established between phones A and B.
- [r] **IP Phone Web Page** – Stars up Internet Explorer and open the web interface from selected IP phone model telephone. Doesn't work to TDM models.

2.1.1. Inserting clients dialog

This dialog is used to insert new telephone instances into the current .hpt[2] database file, which contains needed information about the phones controlled by HPT.

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[1] The behavior of connection/disconnection buttons are explained on items
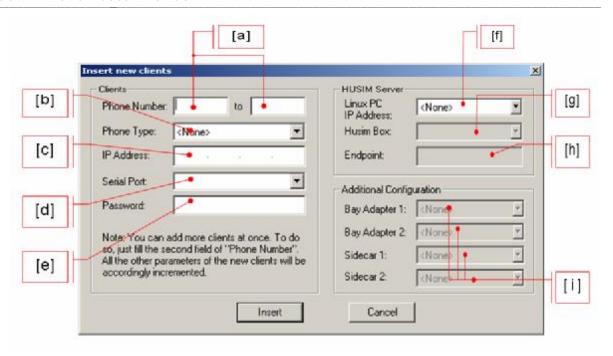[2] HPT still supporting old database files (.scl).

Figure 5. Insert new clients dialog.

The fields are subdivided in 3 areas, as follows:

- Clients
    - [a] **Phone Number:** Telephone number.
    - [b] **Phone type:** Telephone type. This field shows a list of available models, when working with Husim Server this field will be automatically disabled.
    - [c] **IP Address:** Telephone IP address, this field will be automatically disabled when working with TDM phone models.
    - [d] **Serial Port:** Telephone serial port, this field will be automatically disabled when working with SIP/HFA phone models. It is sustained for other products compatibilities reasons.
    - [e] **Password:** Password to allow test interface access. The default value is 123456.

- HUSIM Server
    - [f] **Linux PC IP Address:** The HUSIM server IP address. When working in manual mode, with no HUSIM Server available, this field must be set to "<None>".

- o [g] **Husim Box:** The system which user will connect the telephones. This field will be automatically filled up depending on HUSIM server IP address chosen as default, and it will be automatically disabled when no Husim server is selected (i.e. working in manual mode).
- o [h] **Endpoint[1]:** The telephone number. This number is the telephone dialog identification and will be used when working in Husim mode.

- [i] Additional Configuration

Depending on the chosen phone model, these fields will be enabled. When enabled, the user can select if the telephone being inserted has any adapter or sidecar connected.

2.1.1.1.   Inserting on database a range of telephones at once

When working with a large quantity of telephones you can create a range of telephone numbers by choosing the first and the last telephone number at phone number field, the first IP address and the first telephone number (i.e. 600 to 609 will create 10 telephone instances). This will create a telephone list, starting at first phone number and IP address number, extending in a crescent way, both Phone number and IP address, up to the last telephone number chosen.

2.1.2.   Modifying client parameters

This dialog is used to modify the parameters of an existing telephone instance from database file. By choosing at least one telephone from database and clicking on modify parameters of the selected clients' button, the dialog showed on figure 7 will be pop up, to save the modifications just click on modify button and close the dialog, to exit the dialog without any modification click cancel button.

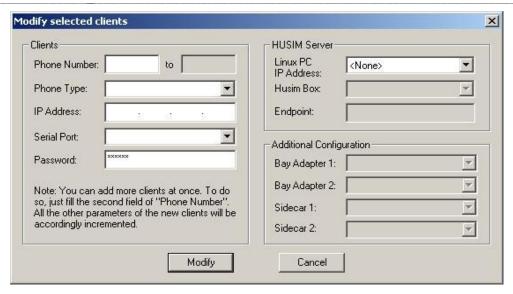[1] Endpoint: Telephone identification number on Husim system.

Figure 6. Modify client parameters dialog.

The meanings of each field are the same of item 2.1.1, at page 10.

2.1.3.   Supported models

HPT supports currently the following telephone models:

- OpenStage 15/20/40/60/80 SIP/HFA;

2.1.4.   Telephone dialogs

Each phone model has its own dialog containing all related phone data, like telephone number, phone status and information about icons and led status.

2.1.4.1.   Open Stage phone models

The Open Stage 80 telephone physical view is showed below, as follows:

Figure 7. OpenStage 80 model.

- [1] Date/Time bar;
- [2] Call alert led;
- [3] Telephone number;
- [4] Feature programmable keys;
- [5] Feature programmable keys display;
- [6] Navigation buttons;
- [7] Navigation wheel;
- [8] Slider.

The OpenStage SIP telephone graphical user interface is showed on figure 9. It is important to remark that OS 80 and OS 60 have the same GUI, but this last with one FPK less:
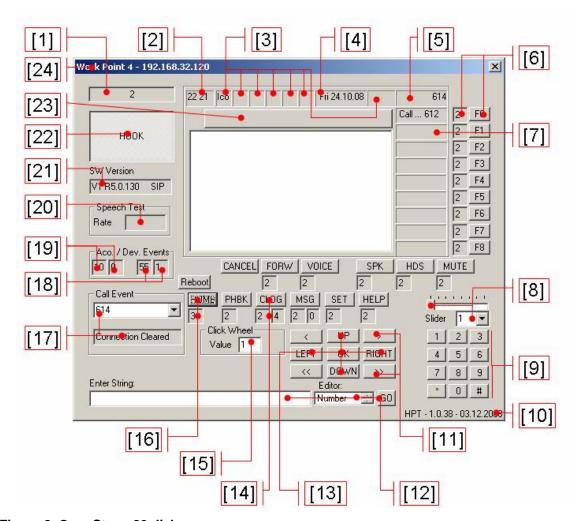
Figure 8. OpenStage 80 dialog.

The dialog elements are real time defined regarding to physical telephone information. The meaning of each element is described, as follows:

- [1] Call alert led: This led behaves according with the telephone call state;
- [2] Showed time on telephone display;
- [3] Icon fields;
- [4] Showed date on telephone display;
- [5] Telephone number;
- [6] Feature programmable keys/leds: These keys could be programmed by user to execute predetermined functions;

- [7] Feature programmable keys display: User can name each key in according with your own convenience, this field will show the chosen name;

- [8] Slider: It represents the ringer volume control of telephone, could be set by dragging bar from minimum level (left side) to highest level (right side), or just setting the value at floating box, below the drag bar. Both options will show the same value.

- [9] Telephone keys;

- [10] HPT version and release date;

- [11] Wheel emulator: When clicked, the button containing the single '>' moves 1 position through navigation wheel, the button below, containing a double '>>', moves 2 positions through navigation wheel. There should be possible setting position changes regarding to value of Click Wheel field [15], but due to test interface implementation limitations, this feature is not working;

- [12] Enter string field: This field allows tester to insert/dial a number or string sequence without use the telephone keys. Tester should pay attention to the Editor floating box options, when editing some field it will follow the Editor option chosen;

- [13] Navigation keys;

- [14] Call logs button: The two fields below the button represents the possible led state. The left one shows the led mode, and the right one shows the led color, the led mode and color will change according to led state, regarding to table 1 and table 2. This behavior is the same to other buttons containing two led fields;

- [15] Click wheel: Some telephone models has a navigation wheel, this wheel is parted in 8 slices. To make a complete navigation wheel turn is necessary to go through these 8 slices;

- [16] Home button: This button has a single led field, which shows only the led mode. The led color is not defined because it does not affect the telephone behavior. This behavior is the same to other buttons with a single led field, all led modes are described at table 1;

- [17] Call Event: The floating box shows the telephone number[1], and the field below button shows the call event at this very moment;

- [18] Device events: These two fields shows the device events occurring, the left one shows the device value which is throwing the event and the right one shows the device status, the meanings of each value are described at table 3 and table 4;

- [19] Acoustic events: These two fields shows the acoustic events occurring, the left one shows the event and the right one shows it value. The meanings of each event and value are described at table 5 and table 6;

- [20] Speech test: When occurs a speech test between two telephones, this field shows the rate of the test. This value is automatically set by HPT;

- [21] SW Version: Shows the current firmware version of telephone which is being used, as well the telephone type;

- [22] Telephone hook;

- [23] Tab bar: Some telephone menus can use this bar to show TABS;

- [24] Title: Shows the telephone model, as well information about telephone. When using IP models will show the telephone IP address, when using TDM models will show the port number which telephone is connected.

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[1] HFA models will show only the string "LocalDeviceID" at floating box due to retrieved telephone data.

Table 1. Led mode table.

Led mode (value)	Meaning
0	Brokenflutter, superposition of wink and flutter.
1	Flutter, fast on and off.
2	Off. Lamp is off.
3	Steady. Lamp is continuous lit.
4	Wink. Lamp is winking.
5	Unknown (the switching function cannot determine the mode of the lamp).
6~100	All values in this range are switching function specific.

Table 2. Led color table.

Led color (value)	Meaning
0	No color
1	Red
2	Yellow
3	Green
4	Blue
5	Unknown (the switching function cannot determine the color of the lamp). Default if this parameter is not present.
6	White
7~100	All values in this range are switching function specific.

Table 3. Device event table.

Device	Value
HANDSET	0
HEADSET	1
SPEAKERPHONE	2
OPENLISTENING	3
RINGER	55

Table 4. Device status table.

Status	Value
ACTIVE	0x01
INACTIVE	0x00

Table 5. Acoustic event table.

Event	Value
RING_TONE1	0
RING_TONE2	1
RING_TONE3	2
RING_TONE4	3
RING_TONE5	4
RING_TONE6	5
RING_TONE7	6
RING_TONE8	7
RING_TONE9	8
RING_TONE10	9
DIAL_TONE	10
SECOND_DIAL_TONE	11
RINGING_TONE	12
BUSY_TONE	13
SPECIAL_INFORMATION_TONE	14
CALL_WAITING_TONE	15
US_INTERNAL_CALL_WAITING_TONE	16
POSITIVE_INDICATION_TONE	17
CONFERENCE_TONE	18
NEGATIVE_INDICATION_TONE	19
INVALID_ENTRY_TONE	20
WARNING_BEEP	21
ERROR_MESSAGE_TONE	22
POSITIVE_ACK_TONE	23
KEYCLICK_TONE	24
DTMF_TONE	25
DTMF_SILENCE_TONE	26
NO_TONE	27
AUTO_ANSWER_TONE	28
AUDIO_TONE_MAX	29

Table 6. Acoustic event status.

Status	Value
START	0x01
STOP	0x00

The OpenStage 40 SIP telephone graphical user interface (GUI) is showed on figure 10:
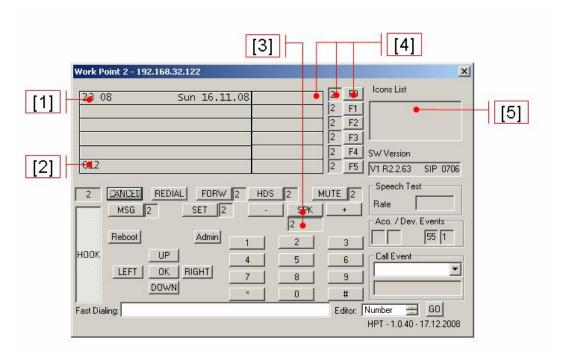
Figure 9. OpenStage 40 dialog.

The Work Point 2 has it own dialog and some particularities, as follows:

- [1] Showed date/time on telephone display;

- [2] Telephone number;

- [3] Speaker button has one led state field, as well a minus and plus buttons, which allows user to set the speaker/ringer volume level;

- [4] Feature programmable key/led/display;

- [5] Icons list: This field maintains a list containing all present icons in the current display.

OpenStage 15/20 dialog, basically, have the same fields of Open Stage 40 dialog, so, this telephone dialog will not be described here.

2.1.5.   Grid meaning

Figure 10. HPT grid.

Table 7. Grid description.

Column	Meaning
#	Shows the statuses of each connection. The colors are described as follows: Green - Connected. Red – Error. Gray – Disconnected or connection failed. Yellow – Trying to connect. White – Stand by.
Phone Number	Shows the station number of the telephone.
Phone Type	Shows the model of the telephone.
Endpoint	Shows the telephone dialog number used in the connection.
Phone IP/Port	Shows IP address when using IP/HFA telephone models or COM port when using TDM telephone models.
Bay/Sidecar	Shows when phone has any adapter or sidecar connected.
Connection to Opera	Shows the connection status between telephone and Opera
HIGate/Husim Box	Shows the HIGate/Husim IP address, if has any.

2.2.   Menu bar Options

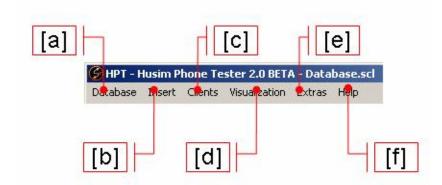The user can access all HPT functionalities by using the menu bar, shown on figure 17.

Figure 11. Menu bar.

- [a] **Database menu**
  - o   This menu contains all possible file actions, like create, save, open or close a database file.
- [b] **Insert menu**
  - o   Allows user to insert clients or Husim systems.
- [c] **Clients menu**
  - o   Contains all client connection actions, like connect, disconnect, modify or delete a client.
- [d] **Visualization menu**
  - o   Contains all client and Husim server supervisor visualization actions.
- [e] **Extras menu**
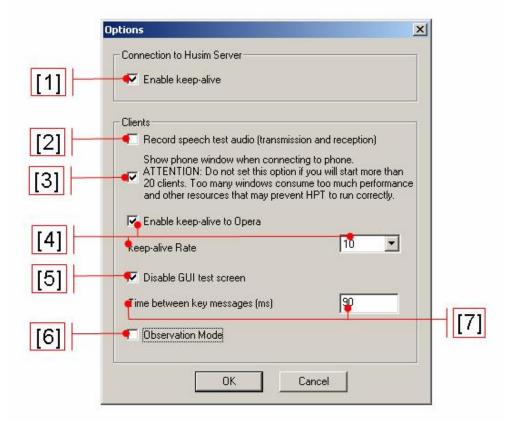 - o   **Options**: The figure 18 shows the options dialog.

Figure 12. Options dialog.

- Connection to Husim Server
  - [1] Enable keep-alive: When enabled, HPT swap messages with Husim server to certify that both HPT and Husim server are running. If this option is enabled and HPT or Husim fails, HPT closes the connection with Husim server. This option is enabled by default.
- Clients
  - [2] Record speech test audio: When enabled, HPT automatically saves two buffers (sent and received) to hard disk. This option is disabled by default;
  - [3] Show phone window when connecting to phone: If enabled, when HPT establishes a connection with telephone, the telephone dialog is automatically launched; else, the telephone dialog is started but does not appear to user. This option is enabled by default;
  - [4] Enable keep-alive to Opera: When enabled, HPT swap messages with telephone to certify that both HPT and telephone are running and the interval between these messages should be specified on *keep-alive Rate* field, the default value is 10. If this option is enabled and HPT or telephone

fails, HPT closes the connection with telephone. This option is enabled by default;

- o [5] Disable GUI test screen: Feature for telephone developers purposes, checked by default;

- o [6] Observation mode: When enabled, the telephone dialog which is launched either in manual mode or Husim mode does not answer to user mouse click. This option is disabled by default;

- o [7] Time between key messages: Allows setting the interval time between the press and release key action which will be sent to telephone.

- o **VQT Test**: Described on item 2.1([q] Execute a voice quality test).

Acronyms

DTMF: Dual Tone Multi-frequency.

HFA: Private Siemens protocol.

SIP: Session Initiation Protocol.

RTP: Real time protocol.

TDM: Time Division Multiplexing.

GUI: Graphical user interface.

VQT: Voice Quality Test.

GLOSSARY

Endpoint: On HPT, it is the telephone identification number on Husim system.

Port: It is the physical point to which one or more telephones can be connected.

Dongle key: Certification key file which must be loaded into the telephone to enable the telephone test interface.

Dialog: The same that graphical user interface (GUI).

Husim: HiPath Environment Simulator. It is a simulation device used for quality assurance in HiPath telecommunication systems.