

ISEG HV Modules for Silicon (Client Development)

1. Hardware: Crate/HV Modules

The Crate for the HV Silicon modules is located in the Saleve side, close to the entrance door. It is a “home made” crate which has only two slots in it.

Two 8-channel High Voltage modules will be used (10 channels are needed by the Silicon group).

The same SLiC OPC Server used for Straws HV modules is also used for these type of modules (HV Power Supply EHQ 8 006p_605-F). The firmware version for both is 3.04.

PVSS OPC Manager 12, in *pccompass03*, is used for both: Straws and Silicons. But obviously, two different CAN cables are connected to this machine.

This “home made” crate was wrongly mounted. Each module, connected in the slot, should send a unique ID address which is later used by the SLiC OPC Server for communication. The problem was that both modules were sending the same address, which is completely wrong. The module address is determined by the bottom 9 connectors of the 96 pin connector at the back of the module. The grounding of these pins (or absence of) defines the address. After opening the modules, it was found that there was no grounding. To solve the problem, the grounding connection was made by soldering the pin 30c to 30b, with a small wire. This way we produce two different addresses: 0x007E (module in first slot) and 0x005E (module in second slot).

2. PVSS Client: client configuration and panels scheme

The same configuration used for Straws is also used for Silicon because one server was written (SLiC OPC Servert) to control both modules.

The items sent from the server, for Silicon, are grouped in the PVSS *compass_opc* project, in two different groups:

Silicon_status123group → contains the items *getCurrent*, *iLimitStatus* and *vLimitStatus* for each module. These items are used to reset automatically the alarms, just by reading them. Because the reading of these items needs to be slower than the others, the update rate is 10 seconds. For the other group the update rate time is 5 seconds.

Silicon_group → contains all items for Silicon, except the ones mentioned in *Silicon_status123group*.

2.1. Datapoint structure

For ISEG HV Silicon, a datapoint type was created under *dcs1*, named *SilIsegCrate*.


The names for the datapoints start by “SilModule” followed by the module number.
Example:

```
+SilIsegCrate
  +SilModule1
    +Channel0
      <Propertie>
    ...
    +Channel7
  +SilModule2
```

This way, the Voltage monitored value for the Channel0 of the Module2 could be found in: “dcs1:SilModule2.Channel0.VMon”

2.2. Panel scheme

In the PVSS main panel a button for Silicon can be found (Figure 1).

Your login name: root  24.May 2004 15:14:03

Alerts Screen

sh	pri	time	data.point	alert text	value	acknowl	detail
E	60	Fri 21 May 2004 03:48:44 PM C E	SM1_M_F.value	MF is too low	58.0292 m		...

Masked Alarms Full View Disabled Devices

Detectors

BMS SCIFIJ GEM **SILICON** STRAW
RICH SCIFIG MWPC MW2 MW1
TARGET HODOSCOPE W45 MICROMEGAS DRIFT

Sub-Systems

HV_SYSTEM PLC_1 PLC_2 PLC_3 CRATE_CONTROL
ELMB_A

Figure 1. PVSS Main Panel for DCS

This button gives access to the Silicon Panel (Figure 2).

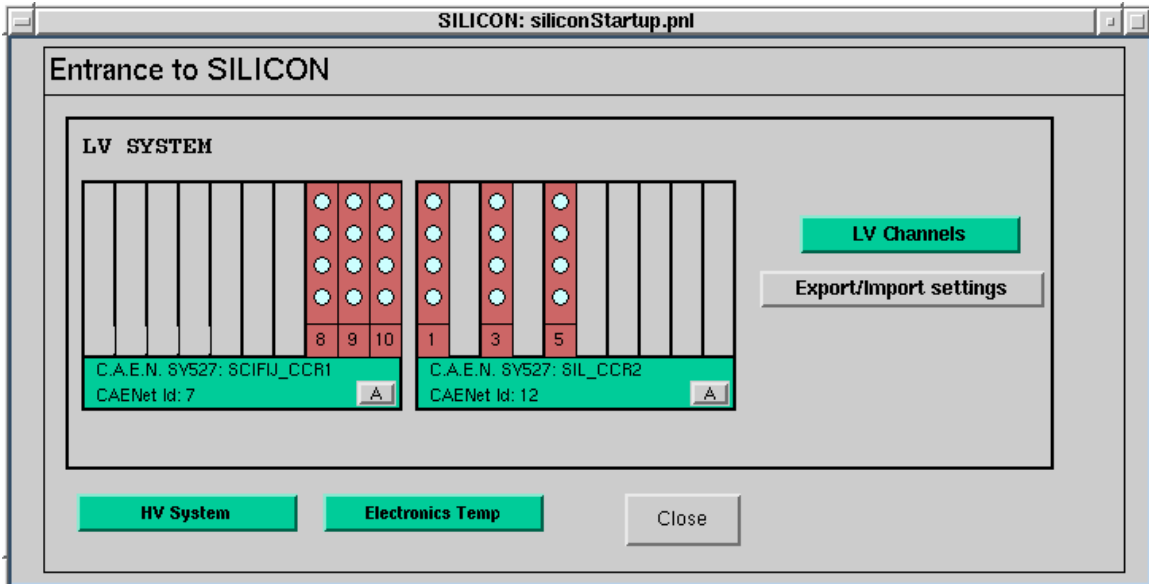


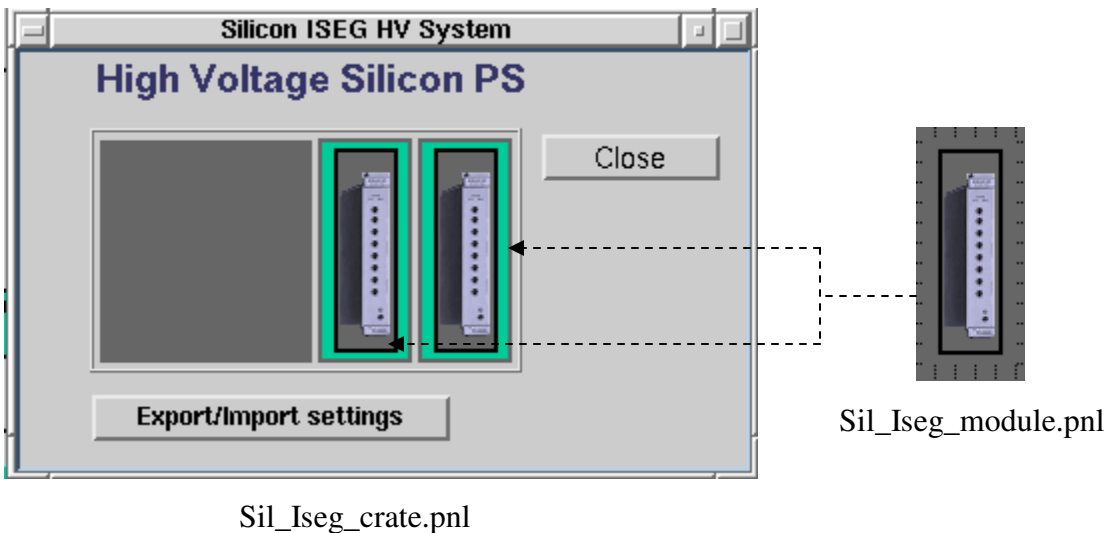
Figure 2. Entrance to Silicon HV Panel (siliconStartup.pnl)

In this panel (Figure 2), you can see in the left bottom corner a button named HV System which is linked to the HV Silicon Panel (Sil_Iseg_crate.pnl).

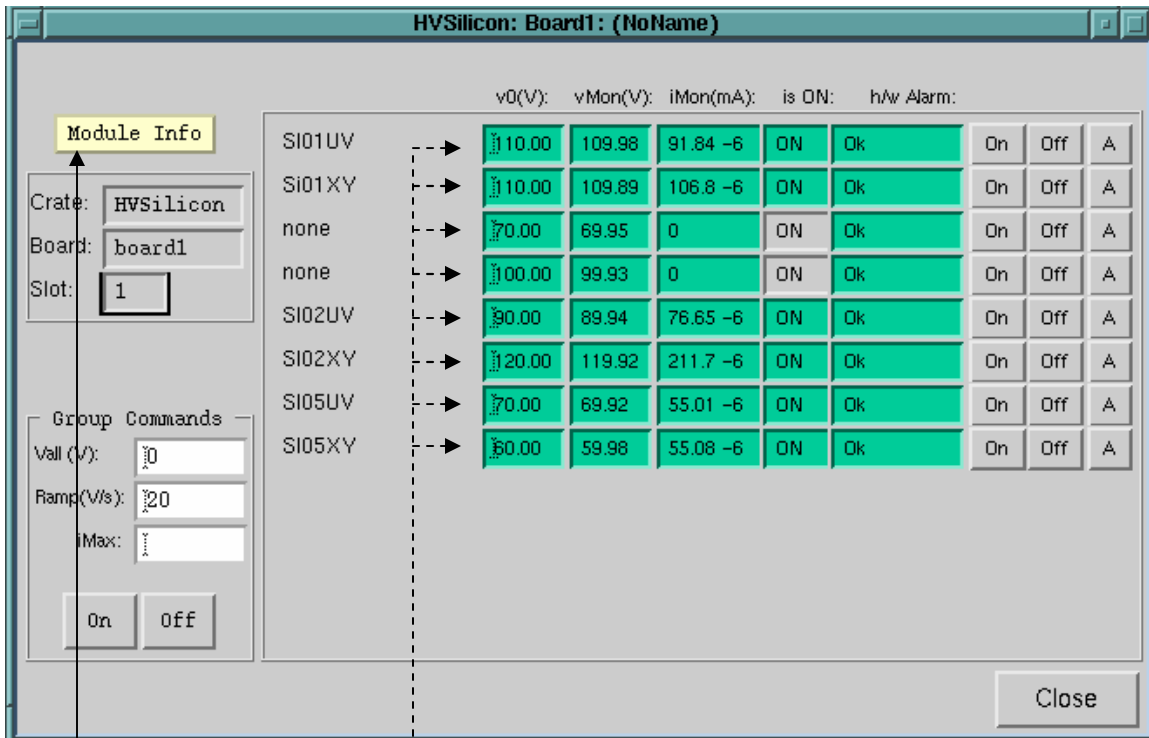
2.3. Panel scheme: development

Linked to reference panel _ _

Linked to panel



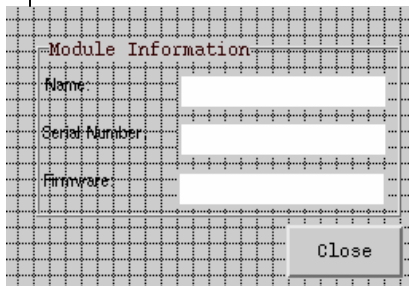
By clicking on Sil_Iseg_module.pnl, the panel to read/set values will be displayed:
sil_modulechannels.pnl:



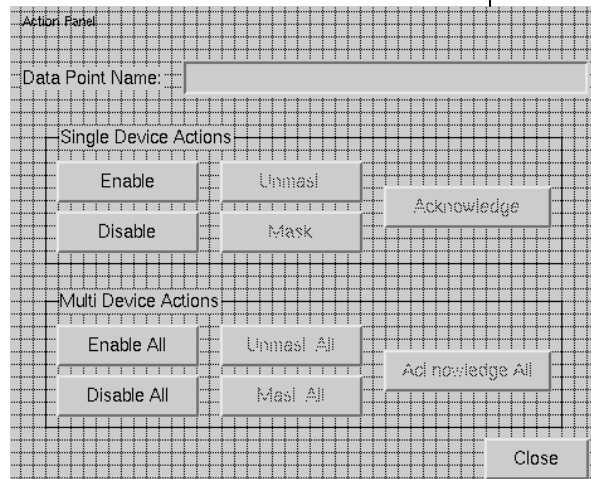
sil_modulechannels.pnl



sil_channelvalues.pnl



ModuleInfo1.pnl

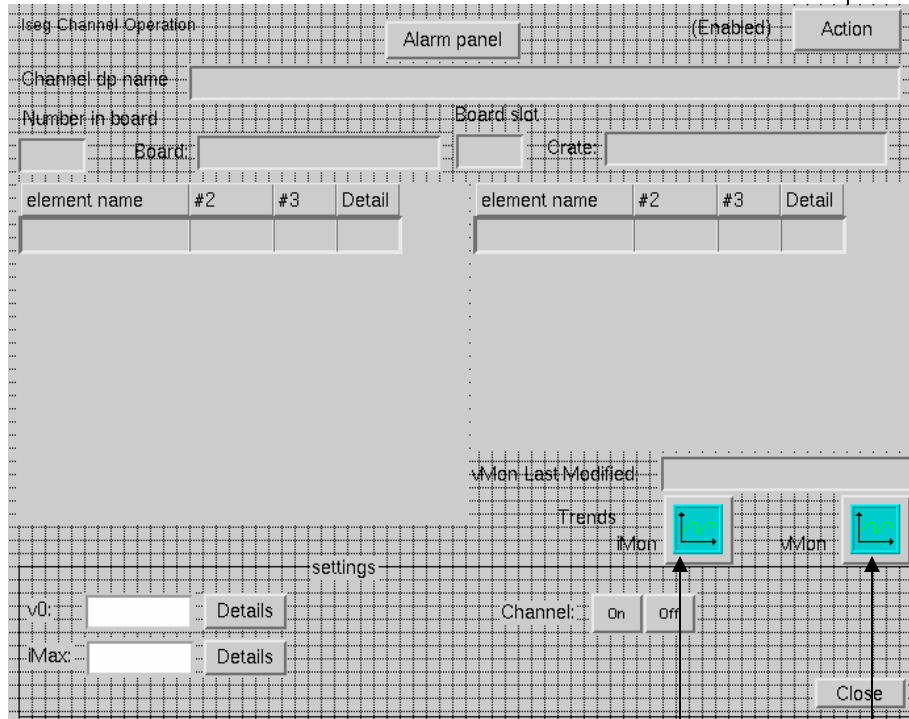
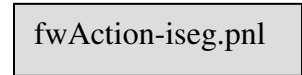


fwAction-iseq.pnl

In one of the reference panels (sil_channelvalues.pnl) of the sil_modulechannels.pnl panel, by double-clicking in one of the fields (ex.: isOn) the SilIsegChannelOperation.pnl will be displayed for it, as showed in the next picture.



sil_channelvalues.pnl



SilIsegChannelOperation.pnl



fwTrendPanel_f.pnl

To start the OPC Client/Server for HV Silicons, the PVSS OPC manager 12, in *pcompass03*, needs to be started. It will automatically run SLiC server and after one or two minutes the control system for HV Silicon is ready.

David Sora, 24/05/2004