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C-SCPI Quick Reference

| Command Syntax | Command Description |
|---|---|
| INST_CLEAR(<i>id</i>) | Sends an IEEE-488.2 equivalent device clear to the instrument specified by the <i>id</i> parameter. |
| INST_CLOSE(<i>id</i>) | Closes the I/O channel of communication with a device and releases memory used by the instrument driver. |
| INST_DECL(<i>id, driver, type</i>) | Creates a variable declaration for the instrument specified by the <i>driver</i> parameter. |
| INST_EXTERN(<i>id, driver, type</i>) | Creates an external variable for the instrument specified by the <i>driver</i> parameter. |
| INST_ONSRQ(<i>id, c_function</i>) | Installs the function specified by the <i>c_function</i> parameter as a handler to be called when the instrument specified by <i>id</i> asserts a service request. |
| INST_OPEN(<i>id, dev_addr</i>) | Opens the I/O channel of communication with a device to the instrument specified by the <i>id</i> parameter. |
| INST_PARAM(<i>id, driver, type</i>) | Defines an I/O channel that will be passed to functions. |
| INST_QUERY(<i>id, cmd_string, readfmt [,c_expr...], c_addr[,c_addr...]</i>) | Executes the SCPI command in the <i>cmd_string</i> parameter addressed to the instrument specified by the <i>id</i> parameter. The query results are stored in the <i>c_addr</i> address. |
| INST_READSTB(<i>id, c_addr</i>) | Places the results of a serial poll from the instrument specified by the <i>id</i> parameter in the address location specified by the <i>c_addr</i> parameter. |
| INST_SEND(<i>id, cmd_string, [c_expr...]</i>) | Executes the SCPI command in the <i>cmd_string</i> parameter addressed to the instrument specified by the <i>id</i> parameter. |
| INST_STARTUP() | Starts the register-based operating system. |
| INST_TRIGGER(<i>id</i>) | Sends an IEEE-488.2 equivalent group execute trigger to the register-based instrument specified by the <i>id</i> parameter. |
| C-SCPI Calls | C-SCPI Call Description |
| cscpi_error(<i>sicl_inst, error_number</i>) | Provides error trapping for instrument run-time errors. |
| cscpi_exe(<i>id, cmd_string, cmd_length, result, result_length</i>) | Executes the SCPI <i>cmd_string</i> parameter at run time. The <i>cmd_string</i> parameter can be entered at run time. |
| cscpi_exe_fildes(<i>id, in, out</i>) | Executes SCPI commands using file descriptors as input and output to the command. |
| cscpi_exe_stream(<i>id, fin, fout</i>) | Executes SCPI commands using streams as input and output to the command. |
| cscpi_get_overlap() | Returns an integer value if overlapped mode is ON (1) or OFF (0). |
| cscpi_overlap(<i>mode</i>) | Turns overlapped mode ON (1) or OFF (0). |



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C-SCPI Quick Reference

The following table shows C-SCPI commands in functional groups

| Functionality | Commands |
|--|---|
| Variable declaration commands | INST_DECL INST_EXTERN INST_PARAM |
| Input/Output and operating system commands | INST_CLOSE INST_OPEN INST_STARTUP |
| Instrument communication commands | INST_SEND INST_QUERY |
| Instrument service and status commands | INST_READSTB INST_ONSRQ |
| IEEE-488.2 equivalent commands | INST_CLEAR INST_TRIGGER |
| C-SCPI calls, runs C-SCPI in special modes, or checks the mode | cscpi_exe cscpi_exe_fildes cscpi_exe_stream cscpi_overlap cscpi_get_overlap |

Online Documentation

Online documentation is provided in a form similar to UNIX® manual pages. Use the following:

`man name`

where *name* is either a C-SCPI macro or function, or an HP register-based instrument model number. See Appendix A, “Online Documentation” for more information.

C-SCPI Process

Write a C program with C-SCPI commands.

```

/*example.cs*/
#include <cscpi.h>
INST_DECL (vm, "E1411B", REGISTER);
main()
{
    INST_STARTUP()
    INST_OPEN (vm, "vxi, 24")
    INST_SEND (vm, "RST");
    .
    .
}
    
```

Run the C-SCPI Preprocessor.

```
cscpipp example.cs > example.c
```

Run your C compiler. Use `-c` to compile only, `-g` for debugging mode, and `-mthreads` to use threaded functions.

```
gcc -c [-g] -mthreads example.c
```

Link your code with C-SCPI and SICL libraries. Use `-g` for debugging.

```
gcc [-g] -mthreads -o example.c example.o
-lcscpi -lsicl
```

Run the executable code.

```
example
```

See Chapter 2, “Using Compiled SCPI” for more information.



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