MCM Std Plugin Reference Help

The dynamic library MCM_std.dll is designed to simulate matching circuits, generate Touchstone files, and communicate with the CMT VNA via the SCPI automation.

For the MCM_Std library to work, you need to install the VISA library.

Connection diagrams
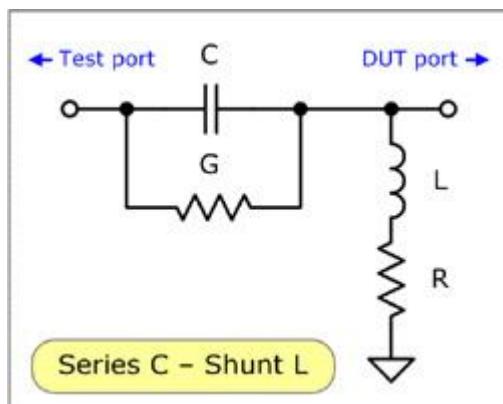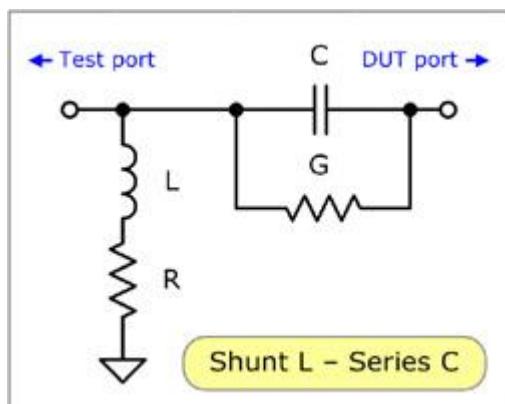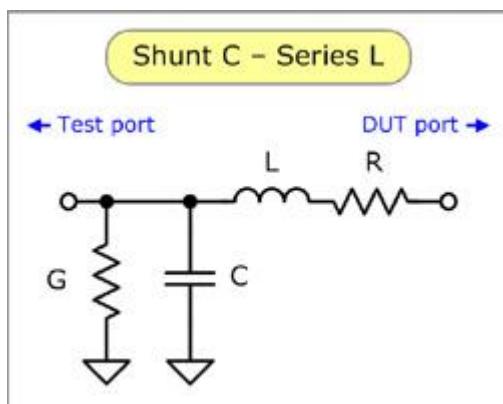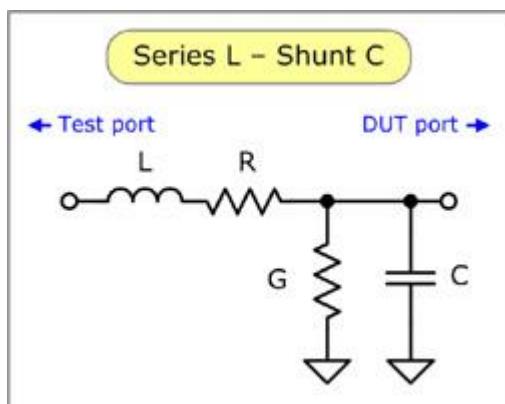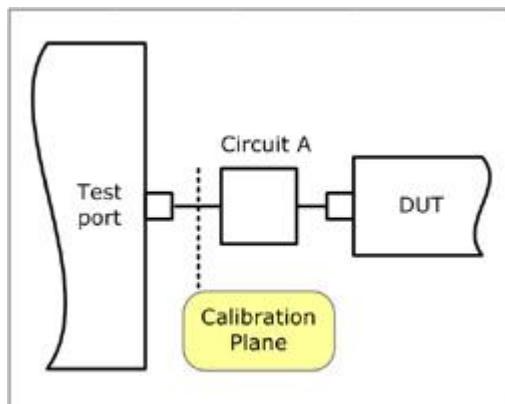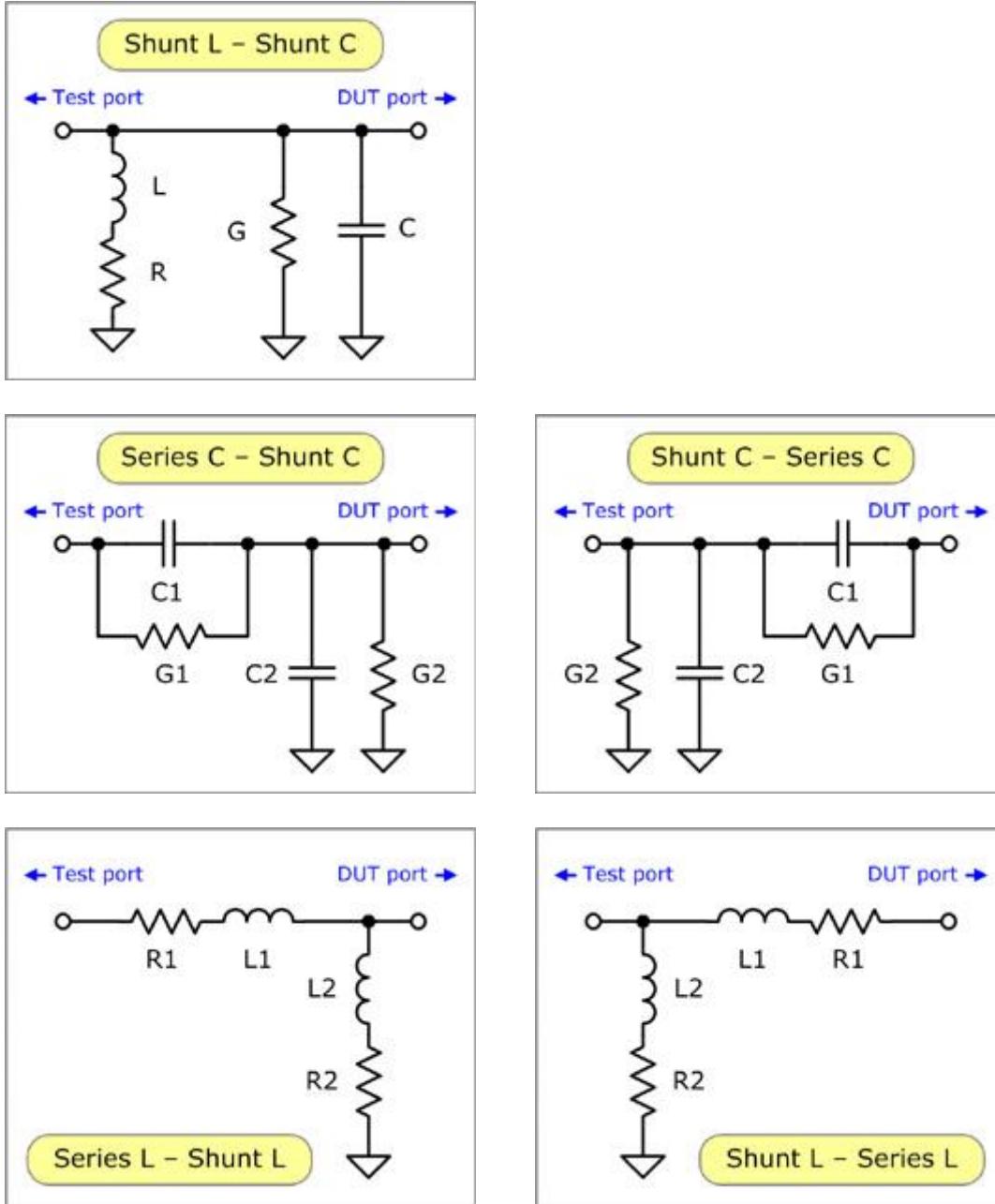
Picture 1. The connection diagrams and element symbols used in the library.

Functions of library

ViStatus MCM_init(ViRsrc VISAaddress);

Opens the I/O session to the instrument. Driver methods and properties that access the instrument are only accessible after MCM_init is called.
VISAaddress
An VISA Address is string that identifies a VISA resource descriptor.
For example:
"TCPIP0::127.0.0.1::5025::SOCKET" for RAW Socket connection
"TCPIP0::127.0.0.1::hislip0::INSTR" for HiSLIP interface.
Return value

The success or error code corresponds to the error codes of the VISA library.

ViStatus MCM_close();

Closes the I/O session to the instrument. Driver methods and properties that access the instrument are not accessible after Close is called.

Return value

The success or error code corresponds to the error codes of the VISA library.

ViStatus MCM_SetActivePort(ViInt32 value);
ViStatus MCM_GetActivePort(ViInt32 *value);

Sets/gets the port number for which further calculations will be performed or the simulation parameters are set.

value

Port number value. It can be from 1 to 4.

Return value

The success or error code corresponds to the error codes of the VISA library.

ViStatus MCM_SetCircuit(ViInt32 value);
ViStatus MCM_GetCircuit(ViInt32 *value);

Sets/gets the type of the matching circuit.

value

Possible values are listed below:

MCM_ATTR_SeriesLShuntC
MCM_ATTR_ShuntCSeriesL
MCM_ATTR_ShuntLSeriesC
MCM_ATTR_SeriesCShuntL
MCM_ATTR_ShuntLShuntC
MCM_ATTR_SeriesCShuntC
MCM_ATTR_ShuntCSeriesC
MCM_ATTR_SeriesLShuntL
MCM_ATTR_ShuntLSeriesL

Return value

The success or error code corresponds to the error codes of the VISA library.

ViStatus MCM_SetSmoothing(ViInt32 value);
ViStatus MCM_GetSmoothing(ViInt32 *value);

Sets/gets the values of the nominal elements of the circuit, reduced to the standard series E6, E12, E24 or an arbitrary value.

value

Possible values are listed below:

MCM_ATTR_E6
MCM_ATTR_E12

MCM_ATTR_E24
MCM_ATTR_Smooth
Return value
The success or error code corresponds to the error codes of the VISA library.

ViStatus MCM_SetRLCGValues(ViReal64 R,
                           ViReal64 L,
                           ViReal64 C,
                           ViReal64 G);
ViStatus MCM_GetRLCGValues(ViReal64 *R,
                           ViReal64 *L,
                           ViReal64 *C,
                           ViReal64 *G);

Sets/gets the R, L, C, G values of the matching circuit elements.
R, L, C, G
Correspond to R, L, C, G ratings of the elements of the matching circuit.
Return value
The success or error code corresponds to the error codes of the VISA library.

ViStatus MCM_SetL1R1L2R2Values(ViReal64 L1,
                               ViReal64 R1,
                               ViReal64 L2,
                               ViReal64 R2);
ViStatus MCM_GetL1R1L2R2Values(ViReal64 *L1,
                               ViReal64 *R1,
                               ViReal64 *L2,
                               ViReal64 *R2);

Sets/gets the L1, R1, L2, R2 values of the matching circuit elements.
L1, R1, L2, R2
Correspond to L1, R1, L2, R2 ratings of the elements of the matching circuit.
Return value
The success or error code corresponds to the error codes of the VISA library.

ViStatus MCM_SetC1G1C2G2Values(ViReal64 C1,
                               ViReal64 G1,
                               ViReal64 C2,
                               ViReal64 G2);
ViStatus MCM_GetC1G1C2G2Values(ViReal64 *C1,
                               ViReal64 *G1,
                               ViReal64 *C2,
                               ViReal64 *G2);

Sets/gets the C1, G1, C2, G2 values of the matching circuit elements.
C1, G1, C2, G2

Correspond to C1, G1, C2, G2 ratings of the elements of the matching circuit.

Return value

The success or error code corresponds to the error codes of the VISA library.

ViStatus MCM_ResetValues();

Resets the settings to the default for the active port.

Return value

The success or error code corresponds to the error codes of the VISA library.

ViStatus MCM_SetAction(ViInt32 value);
ViStatus MCM_GetAction(ViInt32 *value);

Defines the action to be simulated. This is embedding a circiut, deembedding a circuit or disabling simulation.

value

Possible values are listed below:

MCM_ATTR_Embed
MCM_ATTR_Deembed
MCM_ATTR_None

Return value

The success or error code corresponds to the error codes of the VISA library.

ViStatus MCM_SetS2PFilePath(ViConstString value);
ViStatus MCM_GetS2PFilePath(ViInt32 bufferSize, ViChar value[]);

Sets/gets the location path of the generated Touchstone file.

value

The path string or buffer for this string.

Return value

The success or error code corresponds to the error codes of the VISA library.

ViStatus MCM_SetS2PFilePrefix(ViConstString value);
ViStatus MCM_GetS2PFilePrefix(ViInt32 bufferSize, ViChar value[]);

Sets/gets the prefix for the generated Touchstone file. This is necessary to distinguish files from each other.

value

The prefix string or buffer for this string.

Return value

The success or error code corresponds to the error codes of the VISA library.

ViStatus MCM_SetApplyImmediate(ViBoolean value);
ViStatus MCM_GetApplyImmediate(ViBoolean *value);

Sets/gets the flag to immediately execute the simulation after applying any values or changing a circuirt or action.

value

The flag to execute the simulation immediately.

Return value

The success or error code corresponds to the error codes of the VISA library.

ViStatus MCM_ApplyChanges();

Function to manually start the simulation.

Return value

The success or error code corresponds to the error codes of the VISA library.