CALCulate<Ch>:PARameter:DEFine:SGRoup <LogicalPort1>, <LogicalPort2>...

Creates the traces for all S-parameters associated with a group of logical ports (S-parameter group). The traces can be queried using `CALCulate<Ch>:DATA:SGRoup?`.

Traces must be selected to become active traces; see `CALCulate<Ch>:PARameter:SELect`.

Note: Each channel can contain a single S-parameter group only. Defining a new S-parameter group deletes the previous one. Use `CALCulate<Ch>:PARameter:DELete:SGRoup` to delete the current S-group explicitly.

Suffix:

<Ch> Channel number. `<Ch>` may be used to reference a previously defined channel. If `<Ch>` does not exist, it is generated with default channel settings.

Parameters:

<LogicalPort1> Logical (balanced or unbalanced) port numbers. The port numbers must be in ascending order, their number is limited by the test ports of the analyzer. With n logical port numbers, the command generates n^2 traces. The traces correspond to the following S-parameters:

$S_{<log\_port1><log\_port1>}$, $S_{<log\_port1><log\_port2>}$ ... $S_{<log\_port1><log\_port<n>>}$

...

$S_{<log\_port<n>><log\_port1>}$, $S_{<log\_port<n>><log\_port2>}$... $S_{<log\_port<n>><log\_port<n>>}$,

e.g. S_{11}, S_{12}, S_{21}, S_{22} for <log_port1> = 1, <log_port2> = 2. If only one logical port <log_port1> is specified, a single trace with the reflection coefficient $S_{<log\_port1><log\_port1>}$ is created.

Trace names

The generated traces are assigned the following trace names:

<Ch_name>_SG_S<log_port1><log_port1>, <Ch_name>_SG_S<log_port1><log_port2> ...
<Ch_name>_SG_S<log_port1><log_port<n>> ...<Ch_name>_SG_S<log_port<n>><log_port1>,
<Ch_name>_SG_S<log_port<n>><log_port2>...
<Ch_name>_SG_S<log_port<n>><log_port<n>>,

e.g. Ch1_SG_S11, Ch1_SG_S12, Ch1_SG_S21, Ch1_SG_S22 for `<Ch_name>` = Ch1, <log_port1> = 1, <log_port2> = 2. The trace names are displayed in the "Channel Manager" and in the "Trace Manager" dialogs where they can be changed manually. The `<Ch_name>` is defined via `CONFigure:CHANnel<Ch>:NAME '<Ch_name>'`.

Trace names are important for referencing the generated traces; see program example below.

<LogicalPort2>

Example: `CALC2:PAR:DEF:SGR 1,2`

Create channel 2 and four traces to measure the two-port S-parameters S_{11}, S_{12}, S_{21}, S_{22}. The traces are not displayed.

```
DISP:WIND:TRAC2:FEED 'Ch2_SG_S11'
DISP:WIND:TRAC3:FEED 'Ch2_SG_S12'
DISP:WIND:TRAC4:FEED 'Ch2_SG_S21'
DISP:WIND:TRAC5:FEED 'Ch2_SG_S22'
```

Display the four traces in the diagram no. 1.

```
INIT2:CONT OFF; :INIT2:IMMediate; *OPC
```

Perform a complete speep in channel no. 2 to ensure the traces are completely "filled" with data.

```
CALC2:DATA:SGR? SDAT
```

Retrieve all four traces as unformatted data (real and imaginary part at each sweep point). The analyzer first returns the complete S_{11} trace, followed by the S_{12}, S_{21}, and S_{22} traces.

```
CALC2:PAR:DEL:SGR
```

Delete the previously created port group.

Manual operation: See "All S-Params"

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