Manual operation: See "Variation Step" on page 152

[:SOURce<hw>]:POWer:STEP:MODE <Mode>

Activates (USER) or deactivates (DECimal) the user-defined step width used when varying the level value with the level values UP/DOWN. The command is linked to setting "Variation Active" for manual control, i.e. the command also activates/deactivates the user-defined step width used when varying the level value with the rotary knob.

Parameters:
<Mode>	DECimal | USER
	*RST: DECimal

Example:	POW:STEP 2
	sets the step width for the level setting to 2 dB.
	POW:STEP:MODE USER
	actives this step width for level variation with the rotary knob (manual control) and with level values UP/DOWN (remote control).

Manual operation: See "Variation Active" on page 152

[:SOURce<hw>]:POWer:STOP <Stop>

Sets the stop level for the RF sweep.

Note: You can select any level within the setting range. The range is defined by the [:SOURce<hw>]:POWer:STARt value and this stop value.

A defined offset ([:SOURce<hw>]:POWer[:LEVel][:IMMediate]:OFFSet) affects the level values according to the formula:

```
Minimum level + OFFSet ... Maximum level + OFFSet
```

Parameters:
<Stop>	float
	Determines the last level value of the sweep setting range.
	Range: full specified level range
	Increment: see the data sheet: Level sweep > Step size setting resolution
	*RST: -10

Example:	POW:STOP 3
	sets the stop level for the level sweep to 3 dBm for RF output A.

Manual operation: See "Stop Level - Level Sweep" on page 191

6.13.13 SOURce:PULM Subsystem

This subsystem contains the commands for setting the pulse modulation.

The LF generator is used as the internal modulation source. The pulse frequency of the internal rectangular signal is therefore set in the `SOURce:LFOutput` subsystem.

The external signal is input at the [PULSE EXT] connector. The connector can be used as trigger input for internal pulse modulation. The polarity and input impedance of the connector can be selected. The pulse modulation signal is output at the [PULSE VIDEO] connector.

Programming Examples

Example: Performing pulse modulation

This example shows a command sequence to perform pulse modulation.

```
// ********************************************************************
// Reset the instrument to start from an initial state
// ********************************************************************
*RST; *CLS


// ********************************************************************
// Set the RF signal frequency and level
// ********************************************************************
SOURce:FREQuency:CW 4000000000
SOURce:POWer:LEVel:IMMediate:AMPLitude -25


// ********************************************************************
// Configure the pulse modulation settings
// ********************************************************************
// Select the internal modulation generator
SOURce:PULM:SOURce INT
// Set trigger mode
SOURce:PULM:TRIGger:MODE AUTO
// Select pulse mode
SOURce:PULM:MODE DOUB


// ********************************************************************
// Alternatively configure the pulse modulation settings for
// external modulation source
// ********************************************************************
// Select the external modulation source
SOURce:PULM:SOURce EXT
// Set the polarity of the externally applied modulation signal.
SOURce:PULM:POLarity NORMal
// Select the impedance for the external pulse modulation trigger input
SOURce:PULM:TRIGger:EXTernal:IMPedance G10K


// ********************************************************************
// Configure the pulse generator settings
// ********************************************************************
// Set pulse period
```

```
SOURce:PULM:PERiod 10 us
// Set pulse width
SOURce:PULM:WIDth 8 us
// Set double pulse width
SOURce:PULM:DOUBle:WIDTh 0.0000012
// Set double pulse delay
SOURce:PULM:DOUBle:DELay 0.0000045


// ********************************************************************
// Activate the signal output
// ********************************************************************
SOURce:PGENerator:OUTPut:STATe 1
SOURce:PULM:STATe 1
OUTPut1:STATe 1
```

Example: Generating a pulse train signal

This example shows a command sequence to create a pulse train signal.

```
// ********************************************************************
// Reset the instrument to start from an initial state
// ********************************************************************
*RST; *CLS


// ********************************************************************
// Set the RF signal frequency and level
// ********************************************************************
SOURce:FREQuency:CW 4000000000
SOURce:POWer:LEVel:IMMediate:AMPLitude -25


// ********************************************************************
// Create a pulse train data list
// ********************************************************************
// Select the directory
MMEM:CDIR '/var/user/Lists/'
// Create and/or select the pulse train data file
SOURce:PULM:TRAin:SEL 'P_FIVE'
// Enter the pulse train data
SOURce:PULM:TRAin:ONTime 10ns,30ns,40ns,20ns,10ns
SOURce:PULM:TRAin:OFFTime 30ns,40ns,50ns,40ns,30ns
SOURce:PULM:TRAin:REPetition 10,1,3,10,6


// ********************************************************************
// Select pulse train mode
// ********************************************************************
// Select the internal modulation generator and the pulse mode
SOURce:PULM:SOURce INTernal
SOURce:PULM:MODE PTRain


// ********************************************************************
```

```
// Activate the signal output
// ******************************************************************
SOURce:PGENerator:OUTPut:STATe 1
SOURce:PULM:STATe 1
OUTPut1:STATe 1
```

[:SOURce<hw>]:PULM:DELay <Delay>

Sets the pulse delay.

Parameters:

<Delay>   float

                                Range: 0 to 100 s

                                Increment: 10 ns

                                *RST: 10 ns

Example:	PULM:DEL 13 us
	13 us elapse after a trigger before the first pulse is generated.
Options:	R&S R&S SMB-K23 (Pulse Generator)
Manual operation:	See "Pulse Delay - Pulse Generator" on page 233

[:SOURce<hw>]:PULM:DOUBle:DELay <Delay>

Sets the delay from the start of the first pulse to the start of the second pulse.

Parameters:

<Delay>	float
	Range: 10 ns to 100 s
	Increment: 5 ns
	*RST: 3 us

Example:	PULM:DOUB:DEL 22 us
	22 us elapse between the beginning of the first pulse and the beginning of the second pulse in double-pulse mode.
Options:	R&S SMB-K23 (Pulse Generator)
Manual operation:	See "Double Pulse Delay - Pulse Generator" on page 233

[:SOURce<hw>]:PULM:DOUBle:STATe <State>

Activates double pulse generation. The two pulses are generated in one pulse period.

Parameters:

<State>	0	1	OFF	ON
	*RST: 0

Example:	PULM:DOUB:STAT ON
	double-pulse mode is enabled.
Options:	R&S SMB-K23 (Pulse Generator)

[:SOURce<hw>]:PULM:DOUBle:WIDTh <Width>

Sets the width of the second pulse in case of double pulse generation.

Parameters:

<Width>	float
	Range: 10 ns to 100 s
	Increment: 10 ns
	*RST: 3 us

Example:	PULM:DOUB:WIDT 33 us
	sets a width of 33 us for the second pulse.
Options:	R&S SMB-K23 (Pulse Generator)
Manual operation:	See "Double Pulse Width - Pulse Generator" on page 233

[:SOURce<hw>]:PULM:MODE <Mode>

Sets the mode of the pulse generator.

Parameters:

<Mode>   SINGle | DOUBle | PTRain

SINGle
Enables single pulse generation.

DOUBle
Enables double pulse generation. The two pulses are generated in one pulse period.

PTRain
A user-defined pulse train is generated The pulse train is defined by value pairs of on and off times that can be entered in a pulse train list.

*RST: SINGle

Example: `PULM:MODE DOUB`
enables double pulse generation.

Options: R&S SMB-K23 (Pulse Generator), R&S SMB-K27 (Pulse Train)

Manual operation: See "Pulse Mode - Pulse Generator" on page 232

[:SOURce<hw>]:PULM:OUTPut:SYNC[:STATe] <Sync>

Configures the signal at the [SIGNAL VALID] connector.

Parameters:

<Sync>   0 | 1 | OFF | ON

ON
Generates a single pulse at the beginning of a pulse sequence, e.g. to synchronize pulse modulation.

OFF
Returns the validity of the RF signal at the output:
`1` (high), while the signal settles.
`0` (low), when it is stable (valid).

*RST: OFF

Example: `PULM:OUTP:SYNC ON`
uses the signal for synchronizing the pulse modulation.

Manual operation: See "Use SIGNAL VALID as Pulse Sync" on page 235

[:SOURce<hw>]:PULM:PERiod <Period>

Sets the period of the generated pulse. The period determines the repetition frequency of the internal signal.

Parameters:

<Period>	float	
	Range:	5 us | 20 ns to 100 s
	Increment:	1us | 5 ns
	*RST:	10 us

Example:	PULM:PER 220 us
	the pulse period is 220 us.
Options:	R&S SMB-K23 (Pulse Generator)
Manual operation:	See "Pulse Period - Pulse Generator" on page 233

[:SOURce<hw>]:PULM:POLarity <Polarity>

Sets the polarity between modulating and modulated signal. This command is effective only for an external modulation signal.

Parameters:

<Polarity>   NORMal | INVerted

NORMal
The RF signal is suppressed during the pulse pause.

INVerted
The RF signal is suppressed during the pulse.

*RST: NORMal

Example:	PULM:SOUR EXT
	selects the external modulation source.
Example:	PULM:POL INV
	selects inverted polarity.
Options:	R&S SMB-K22 (Pulse Modulator)
Manual operation:	See "Polarity" on page 216

[:SOURce<hw>]:PULM:SOURce <Source>

Selects the source for the pulse modulation signal.

Parameters:

<Source>   INTernal | EXTernal

INTernal
The internally generated rectangular signal is used for the pulse modulation. The frequency of the internal signal can be set in the SOURce:LFOutput subsystem.

EXTernal
The signal applied externally via the EXT MOD connector is used for the pulse modulation.

*RST: INTernal

Example:	`PULM:SOUR INT`
	selects the internal modulation source.
	`PULM:STAT ON`
	activates the pulse modulation.

Usage:	SCPI confirmed
Options:	R&S SMB-K21 or R&S SMB-K22 (Pulse Modulator)
Manual operation:	See "Source" on page 216

[:SOURce<hw>]:PULM:STATe <State>

Activates the pulse modulation.

Parameters:	
<State>	0 | 1 | OFF | ON
	*RST: 0

Example:	`PULM:STAT ON` activates pulse modulation.
Options:	R&S SMB-K21 or R&S SMB-K22 (Pulse Modulator)
Manual operation:	See "State" on page 216

[:SOURce<hw>]:PULM:TRAin:CATalog?

Queries a list of available pulse train files. The individual pulse train files are separated by commas.

The files are stored with the fixed file extensions `*.pulstrn` in a directory of the user's choice. The directory applicable to the commands is defined with the command `MMEMory:CDIR`.

Return values:	
<Catalog>	string

Example:	`MMEM:CDIR '/var/user/Lists'`
	selects the directory for the pulse train files.
	`PULM:TRA:CAT?`
	queries the available files.
	`Response: 'P_CONS','P_INCR','P_DECR'`
	the lists `P_CONS`, `P_INCR` and `P_DECR` are available.

Usage:	Query only
Options:	R&S SMB-K27 (Pulse Train)
Manual operation:	See "Pulse Train Data - Pulse Generator" on page 236

[:SOURce<hw>]:PULM:TRAin:DELete <Filename>

Deletes the specified pulse train file.

The files are stored with the fixed file extensions `*.pulstrn` in a directory of the user's choice. The directory applicable to the command is defined with the command `MMEMory:CDIR`. To access the files in this directory, only the file name has to be given without the path and the file extension.

Setting parameters:

<Filename>	<list file name>

Example:	`MMEM:CDIR '/var/user/Lists'`
	selects the directory for the pulse train files.
	`PULM:TRA:DEL 'P_FIVE'`
	deletes the list `P_FIVE`

Usage:	Setting only
Options:	R&S SMB-K27 (Pulse Train)
Manual operation:	See "Pulse Train Data - Pulse Generator" on page 236

[:SOURce<hw>]:PULM:TRAin:OFFTime <OffTime>

Fills the Off-time part of the selected file with data.

*RST does not affect data lists.

Parameters:

<OffTime>	Offtime#1{, Offtime#2, ...} | binary block data
	The data can be given either as a list of numbers (list can be of any length and list entries must be separated by commas) or as binary block data. When block data is transferred, 8 (4) bytes are always interpreted as a floating-point number with double accuracy (see the command `FORMat:DATA`). The maximum length is 2047 values.

Example:	`MMEM:CDIR '/var/user/Lists'`
	selects the directory for the pulse train files.
	`PULM:TRA:SEL 'P_INCR'`
	selects `P_INCR` for editing. `P_INCR` is created if it does not yet exist.
	`PULM:TRA:OFFT 10ns,30ns,40ns,...`
	specifies the off-time values in `P_INCR`. If the list already contains data, it is overwritten.

Options:	R&S SMB-K27 (Pulse Train)
Manual operation:	See "Edit Pulse Train Data" on page 237

[:SOURce<hw>]:PULM:TRAin:OFFTime:POINts?

Queries the length (in points) of the off-time component of the selected list.

Return values:

<Points>   integer

                                Range: 0 to 2047
                                *RST: 0

Example: `MMEM:CDIR '/var/user/Lists'`
                                selects the directory for the pulse train files.
                                `PULM:TRA:SEL 'P_INCR'`
                                selects `P_INCR` for editing. `P_INCR` is created if it does not yet
                                exist.
                                `PULM:TRA:OFFT:POIN?`
                                queries the number of frequency values in `P_INCR`
                                `Response: 7`
                                `P_INCR` has 7 off-time entries.

Usage: Query only

Options: R&S SMB-K27 (Pulse Train)

[:SOURce<hw>]:PULM:TRAin:ONTime <OnTime>

Fills the On-time part of the selected file with data.

Parameters:

<OnTime>   Ontime#1{, Ontime#2, ...} | binary block data

                                The data can be given either as a list of numbers (list can be of
                                any length and list entries must be separated by commas) or as
                                binary block data.
                                When block data is transferred, 8 (4) bytes are always interpre-
                                ted as a floating-point number with double accuracy (see the
                                command `FORMat:DATA`).
                                The maximum length is 2047 values.

Example: `MMEM:CDIR '/var/user/Lists'`
                                selects the directory for the pulse train files.
                                `PULM:TRA:SEL 'P_INCR'`
                                selects `P_INCR` for editing. `P_INCR` is created if it does not yet
                                exist.
                                `PULM:TRA:ONT 10ns,30ns,40ns,...`
                                specifies the on-time values in `P_INCR`. If the list already con-
                                tains data, it is overwritten.

Options: R&S SMB-K27 (Pulse Train)

Manual operation: See "Edit Pulse Train Data" on page 237

[:SOURce<hw>]:PULM:TRAin:ONTime:POINts?

Queries the length (in points) of the ontime component of the selected list.

Return values:

<Points>	integer
	Range: 0 to 2047
	*RST: 0

Example: `MMEM:CDIR '/var/user/Lists'`
selects the directory for the pulse train files.
`PULM:TRA:SEL 'P_INCR'`
selects `P_INCR` for editing. `P_INCR` is created if it does not yet exist.
`PULM:TRA:ONT:POIN?`
queries the number of frequency values in `P_INCR`
`Response: 7`
`P_INCR` has 7 ontime entries.

Usage: Query only

Options: R&S SMB-K27 (Pulse Train)

[:SOURce<hw>]:PULM:TRAin:REPetition <Repetition>

Sets the number of repetitions for each ontime/offtime value pair.

*RST does not affect data lists.

Tip:"0" ignores the corresponding value pair in the pulse train. Thus, you can individually omit value pairs without deleting them from the table.

Parameters:

<Repetition>	Repetition#1{, Repetition#2, ...}
	Range: 0...65535

Example: `MMEM:CDIR '/var/user/Lists'`
selects the directory for the pulse train files.
`PULM:TRA:SEL 'P_INCR'`
selects `P_INCR` for editing. `P_INCR` is created if it does not yet exist.
`PULM:TRA:ONT 10ns,30ns,40ns,...`
specifies the ontime values in `P_INCR`. If the list already contains data, it is overwritten.
`PULM:TRA:OFFT 10ns,30ns,40ns,...`
specifies the offtime values in `P_INCR`. If the list already contains data, it is overwritten.
`PULM:TRA:REP 1,8,3,...`
specifies the number of repetitions for each value pair.

Options: R&S SMB-K27 (Pulse Train)

Manual operation: See "Edit Pulse Train Data" on page 237

[:SOURce<hw>]:PULM:TRAin:REPetition:POINts?

Queries the length (in points) of the repetition component of the selected list.

Return values:

<Points>	integer
	Range: 0 to INT_MAX
	*RST: 0

Example: `MMEM:CDIR '/var/user/Lists'`

selects the directory for the pulse train files.

`PULM:TRA:SEL 'P_INCR'`

selects `P_INCR` for editing. `P_INCR` is created if it does not yet exist.

`PULM:TRA:REP:POIN?`

queries the number of repetition values in `P_INCR`

`Response: 7`

`P_INCR` has 7 repetition entries.

Usage: Query only

Options: R&S SMB-K27 (Pulse Train)

[:SOURce<hw>]:PULM:TRAin:SELect <Filename>

Selects the specified pulse train file. If a new file is to be created, the name can be entered here. The file is created if it does not yet exist. The file selected here is available for the further processing steps (editing) and is used in the instrument when the pulse train mode is activated.

The files are stored with the fixed file extensions `*.pulstrn` in a directory of the user's choice. The directory applicable to the command is defined with the command `MMEMory:CDIR`.

`*RST` does not affect data lists.

Parameters:

<Filename>	string

Example: `MMEM:CDIR '/var/user/Lists'`

selects the directory for the pulse train files.

`PULM:TRA:SEL 'P_INCR'`

selects `P_INCR` for editing. `P_INCR` is created if it does not yet exist.

Options: R&S SMB-K27 (Pulse Train)

Manual operation: See "Pulse Train Data - Pulse Generator" on page 236

[:SOURce<hw>]:PULM:TRIGger:EXTernal:GATE:POLarity <Polarity>

Selects the polarity of the Gate signal.

The signal is supplied via the [PULSE EXT] connector.

Parameters:

<Polarity>	NORMal | INVerted
	*RST: NORMal

Example:	PULM:TRIG:EXT:GATE:POL NORM
	The pulse signal is generated while the gate signal is high.
Options:	R&S SMB-K23 (Pulse Generator)
Manual operation:	See "Gate Input Polarity - Pulse Generator" on page 234

[:SOURce<hw>]:PULM:TRIGger:EXTernal:IMPedance <Impedance>

Selects the impedance for external pulse trigger.

Parameters:

<Impedance>	G50 | G10K
	*RST:　　　G50
Example:	SOUR:PULM:TRIG:EXT:IMP G50
	selects 50 Ohm as the trigger impedance for the external pulse trigger.
Options:	R&S SMB-K21 or R&S SMB-K22 (Pulse Modulator)
Manual operation:	See "External Impedance" on page 234

[:SOURce<hw>]:PULM:TRIGger:EXTernal:SLOPe <Slope>

Sets the polarity of the active slope of an applied trigger at the [PULSE EXT] connector.

Parameters:

<Slope>	NEGative | POSitive
	*RST:　　　POSitive
Example:	PULM:TRIG:EXT:SLOP NEG
	The pulse generator is triggered on the negative slope of the external trigger signal.
Options:	R&S SMB-K23 (Pulse Generator)
Manual operation:	See "External Trigger Input Slope - Pulse Generator" on page 234

[:SOURce<hw>]:PULM:TRIGger:MODE <Mode>

Selects the trigger mode for pulse modulation.

Parameters:

<Mode>	AUTO | EXTernal | EGATe | SINGle
	AUTO
	The pulse modulation is generated continuously.
	EXTernal
	The pulse modulation is triggered by an external trigger event. The trigger signal is supplied via the [PULSE EXT] connector.

EGATe

The pulse modulation is gated by an external gate signal. The signal is supplied via the [PULSE EXT] connector.

SINGle

Pulse modulation is generated once.

*RST: AUTO

Example:	`PULM:TRIG:MODE EXT` selects triggering by an external trigger event.
Options:	R&S SMB-K23 (Pulse Generator)
Manual operation:	See "Trigger Mode - Pulse Generator" on page 233

[:SOURce]:PULM[:INTernal][:TRAin]:TRIGger:IMMediate

Initiates an internal single trigger signal for the pulse generator.

Example:	`PULM:TRIG:MODE SING` `PULM:TRIG:IMM`
Manual operation:	See "Execute Single Trigger" on page 234

[:SOURce<hw>]:PULM:TRAin:DEXChange:AFILe:CATalog?

Requests a list of available ASCII files for export/import of pulse train data. The individual files are separated by commas.

The ASCII files are stored with the fixed file extensions `*.txt` or `*.csv` in a directory of the user's choice. The directory applicable to the commands is defined with the command `MMEMory:CDIR`.

Return values:

<Catalog>	string

Example:	`MMEM:CDIR '/var/user/Lists/import'`
	selects the directory for the ASCII files with ontime/offtime/repetition values.
	`PULM:TRA:DEXC:AFIL:EXT TXT`
	selects that ASCII files with extension `*.txt` are listed.
	`PULM:TRA:DEXC:AFIL:CAT?`
	queries the available files with extension `*.txt`.
	`Response: 'train1','train2'`
	the ASCII files `train1.txt` and `train2.txt` are available.

Usage:	Query only
Options:	R&S SMB-K27 (Pulse Train)
Manual operation:	See "Select ASCII Source / Destination - Import/Export Pulse Train Files" on page 239

[:SOURce<hw>]:PULM:TRAin:DEXChange:AFILe:EXTension <Extension>

Selects the file extension of the ASCII file to be imported or exported. Selection `TXT` (text file) or `CSV` (Excel file) is available.

Parameters:

<Extension>	TXT | CSV
	*RST: TXT

Example: `MMEM:CDIR '/var/user/Lists/import'`

selects the directory for the ASCII files with ontime/offtime/repetition values.

`PULM:TRA:DEXC:AFIL:EXT TXT`

selects that ASCII files with extension `*.txt` are listed.

`PULM:TRA:DEXC:AFIL:CAT?`

queries the available files with extension `*.txt`.

`Response: 'train1','train2`

the ASCII files `train1.txt` and `train2.txt` are available.

Options: R&S SMB-K27 (Pulse Train)

Manual operation: See "Extension - ASCII File Settings" on page 238

[:SOURce<hw>]:PULM:TRAin:DEXChange:AFILe:SELect <Filename>

Selects the ASCII file to be imported or exported.

The ASCII files are stored with the fixed file extensions `*.txt` or `*.csv` in a directory of the user's choice. The directory applicable to the commands is defined with the command `MMEMory:CDIR`.

Parameters:

<Filename>	string

Example: `MMEM:CDIR '/var/user/Lists/import'`

selects the directory for the ASCII files with ontime/offtime/repetition values.

`PULM:TRA:DEXC:MODE IMP`

selects that ASCII files with ontime/offtime/repetition values are imported and transferred into pulse train lists.

`PULM:TRA:DEXC:AFIL:SEL 'train.csv'`

selects that ASCII file `train.csv` is imported.

`PULM:TRA:DEXC:SEL 'train_imp'`

selects that the ASCII file `train.csv` is imported into pulse train list `train_imp`.

Options: R&S SMB-K27 (Pulse Train)

Manual operation: See "Select ASCII Source / Destination - Import/Export Pulse Train Files" on page 239

[:SOURce<hw>]:PULM:TRAin:DEXChange:AFILe:SEParator:COLumn <Column>

Parameters:

<Column>   TABulator | SEMicolon | COMMa | SPACe

                            *RST: SEMicolon

Example: PULM:TRA:DEXC:MODE EXP
                            selects that the pulse train list is exported into an ASCII file.
                            MMEM:CDIR '/var/user/Lists/import'
                            selects the directory for the ASCII files with ontime/offtime/repe-
                            tition values.
                            PULM:TRA:DEXC:AFIL:SEL 'train.csv'
                            selects ASCII file train.csv as destination for the pulse train list
                            data.
                            PULM:TRA:DEXC:AFIL:SEP:COL TAB
                            the ontime/offtime/repetition values are separated by a tabulator.
                            PULM:TRA:DEXC:AFIL:SEP:DEC DOT
                            selects the decimal separator dot.
                            PULM:TRA:DEXC:SEL 'train_imp'
                            selects that the pulse train list train_imp is imported into
                            ASCII file train.csv.

Options: R&S SMB-K27 (Pulse Train)

Manual operation: See "Column Separator- ASCII File Settings" on page 239

[:SOURce<hw>]:PULM:TRAin:DEXChange:AFILe:SEParator:DECimal <Decimal>

Select the decimal separator used in the ASCII data between '.' (decimal point) and ','
(comma) with floating-point numerals.

Parameters:

<Decimal>   DOT | COMMa

                            *RST: DOT

Example: PULM:TRA:DEXC:MODE EXP
                            selects that the pulse train list is exported into an ASCII file.
                            MMEM:CDIR '/var/user/Lists/import'
                            selects the directory for the ASCII files with on-time/off-time/
                            repetition values.
                            PULM:TRA:DEXC:AFIL:SEL 'train.csv'
                            selects ASCII file train.csv as destination for the pulse train list
                            data.
                            PULM:TRA:DEXC:AFIL:SEP:COL TAB
                            the ontime/offtime/repetition values are separated by a tabulator.
                            PULM:TRA:DEXC:AFIL:SEP:DEC DOT
                            selects the decimal separator dot.
                            PULM:TRA:DEXC:SEL 'train_imp'
                            selects that the pulse train list train_imp is imported into
                            ASCII file train.csv.

Options: R&S SMB-K27 (Pulse Train)

Manual operation: See "Decimal Point - ASCII File Settings" on page 239

[:SOURce<hw>]:PULM:TRAin:DEXChange:EXECute

Starts the export or import of the selected file. When import is selected, the ASCII file is imported as pulse train list. When export is selected, the pulse train list is exported into the selected ASCII file.

Example: `PULM:TRA:DEXC:MODE IMP`
selects that ASCII files with ontime/offtime/repetition values are imported and transferred into pulse train lists.
`MMEM:CDIR '/var/user/Lists/import'`
selects the directory for the ASCII files with on-time/off-time/ repetition values.
`PULM:TRA:DEXC:AFIL:SEL 'train.csv'`
selects that ASCII file train.csv is imported.
`PULM:TRA:DEXC:SEL 'train_imp'`
selects that the ASCII file `train.csv` is imported into pulse train list `train_imp`.
`PULM:TRA:DEXC:EXEC`
starts the import of the ASCII file data into the pulse train file.

Usage: Event

Options: R&S SMB-K27 (Pulse Train)

Manual operation: See "Import / Export - Import/Export Pulse Train Files" on page 239

[:SOURce<hw>]:PULM:TRAin:DEXChange:MODE <Mode>

Selects if pulse train lists should be imported or exported. Depending on the selection, the file select command define either the source or the destination for pulse train lists and ASCII files.

Parameters:

<Mode>   IMPort | EXPort

                   *RST: IMPort

Example: `PULM:TRA:DEXC:MODE IMP`
selects that ASCII files with ontime/offtime/repetition values are imported and transferred into pulse train lists.
`MMEM:CDIR '/var/user/Lists/import'`
selects the directory for the ASCII files with ontime/offtime/repe-tition values.
`PULM:TRA:DEXC:AFIL:SEL 'train.csv'`
selects that ASCII file `train.csv` is imported.
`PULM:TRA:DEXC:SEL 'train_imp'`
selects that the ASCII file `train.csv` is imported into pulse train list `train_imp`.

Options: R&S SMB-K27 (Pulse Train)