

SCPI

Introduction to SCPI

SCPI, or Standard Commands for Programmable Instruments, is a standardized language used for controlling and communicating with test and measurement instruments. It provides a unified framework for remote instrument control, ensuring interoperability across different manufacturers and models.

For more additional informations see:

[Standard Commands for Programmable Instruments](#)
[Introduction to the SCPI Language](#)
[SCPI parser library v2](#)

SCPI Syntax

The command syntax format is illustrated below:

- **Command Header:** Every SCPI command begins with a command header, which typically consists of one or more letters followed by a colon (:). This header identifies the function or operation that the command instructs the instrument to perform. For example, **SYSTem:CONFigure:VOLTage** instructs the instrument to configure the voltage measurement settings.
- **Subsystems and Parameters:** SCPI commands often include hierarchical subsystems and parameters. These subsystems represent different functional blocks or modules within the instrument, and parameters specify specific settings or values associated with those subsystems. For instance, in the command **SENS:VOLT:DC:RANG 10**, **SENS** represents the sensor subsystem, **VOLT** denotes voltage measurement, **DC** specifies the measurement type (direct current), and **RANG 10** sets the measurement range to 10 volts.
- **Query Commands:** SCPI supports query commands, which are used to retrieve instrument status or measurement data. Query commands typically end with a question mark (?). For example, **MEASure:VOLTage?** queries the instrument for the current voltage measurement.

SCPI Command Termination

Commands by Subsystem

SYSTem:COMMunicate

LEPton:SYSTem

LEPton:OEM

LEPton:VIDeo

System Communication Subsystem

Lepton System Subsystem

LEPton:SYSTem:STATus?

This command returns the system status.

Parameters	Result
NONE	0, 1, 2, 3, 4
0 - Ready 1 - Initializing 2 - Low power model 3 - going into stanby 4 - flat field calibration (FFC) in process	

LEPton:SYSTem:UPTime?

This command returns the current uptime in milliseconds. The uptime is the time since the camera was brought out of Standby. The uptime counter is implemented as a 32-bit counter and as such will rollover after the maximum count of 0xFFFFFFFF (1193 hours) is reached and restart at 0x00000000.

Parameters	Result
NONE	Up time in miliseconds as uint32 value. The value is be displayed as decimal.

LEPton:SYSTem:AUX:TEMPerature?

This command returns the Lepton Camera's AUX Temperature.

Parameters	Result
NONE	AUX temperature as float value.

- The default temperature value is in kelvin. It is possible to select a different scale using `SYSTem:TEMPerature:UNIT` command.

LEPton:SYSTem:FPA:TEMPerature?

This command returns the Lepton Camera's FPA Temperature.

Parameters	Result
NONE	FPA temperature as float value.

- The default temperature value is in kelvin. It is possible to select a different scale using `SYSTem:TEMPerature:UNIT` command.

LEPton:SYSTem:FRAMe:AVERage:RUN

This command executes the average frames command. Executing this command causes the camera to sum together a number of frames, divide the summed frame by the number of frames summed and generate a result frame containing the average of the summed frames. For Lepton 3.0 and 3.5, the number of frames is fixed at 8.

Parameters	Result
NONE	NONE

LEPton:SYSTem:SN?

This command returns the Lepton Camera's Customer serial number as a 32-byte character string. The Customer Serial Number is a (32 byte string) identifier unique to a specific configuration of module.

Parameters	Result
NONE	String

LEPton:SYSTem:SCENe:STATistics?

This command returns the current scene statistics for the video frame defined by the SYS ROI (`LEPton:SYSTem:SCENe:ROI`). The statistics captured are scene mean intensity in counts, minimum and maximum intensity in counts, and the number of pixels in the ROI. Lepton scene intensities range from 0 to 16383. The range drops to 0 to 255 when in 8-bit AGC mode. When TLinear mode is enabled (available in the Radiometric releases), the camera output represents temperature values, and the scene statistics are reported in Kelvin x 100.

Lepton OEM Subsystem

Lepton Video Subsystem