Guide 16

Scan Module - Measurements

This chapter explains how to install the scan module and convert structured E57 files to the Plantview compressed pvz format.

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1. Notes

- To install the scan module, you will need administrator rights on the computer.
- To run the scan module, Plantview Workspace version 6 or higher must be installed on the computer and an active Plantview account is required.
- The following terrestrial scanners are supported: Leica HDS 6000, Leica C and P series, Leica RTC 360, Leica BLK G2, Faro Scanners.

2. Download and install

Download the latest scan module and install it on your computer.

3. Run the Scan Module from the Windows PowerShell

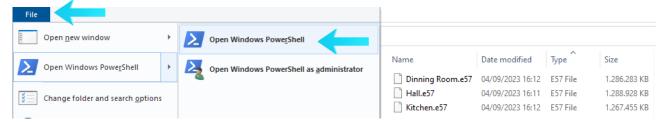
Login into your Plantview Workspace. This step is required to enable the license to be applied to the scan module.

Open File Explorer and go to the windows directory where the E57 files are located.



1

Press File>Open Windows PowerShell.



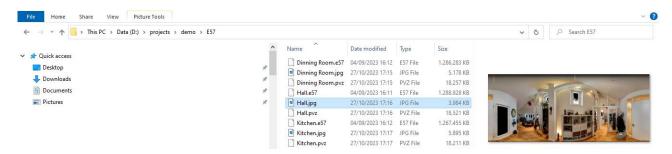
The windows PowerShell opens.

Type pvz in the command prompt and press Enter.

The Plantview Scan Module will then look for all E57 files located in the directory and start the conversion and compression process. The time required for the processing of one E57 depends on the computer hardware specification and the size of the scan.

```
ll rights reserved.
Searching for scans in 'D:\projects\demo\E57'
3 scans will be processed
'D:\projects\demo\E57\Dinning Room.e57' scan 0
'D:\projects\demo\E57\Hall.e57' scan 0
'D:\projects\demo\E57\Kitchen.e57' scan 0
Dinning Room.e57 s0 - Compression started
Dinning Room.e57 s0 - Opening scan
Dinning Room.e57 s0 - Opening Room> - Total points found
Dinning Room.e57 s0 < Dinning Room> - 10% points: 3,786
Dinning Room.e57 s0 < Dinning Room> - 20% points: 13,786
Dinning Room.e57 s0 < Dinning Room> - 30% points: 11,35
Dinning Room.e57 s0 < Dinning Room> - 40% points: 11,35
Dinning Room.e57 s0 < Dinning Room> - 50% points: 18,93
Dinning Room.e57 s0 < Dinning Room> - 60% points: 18,93
Dinning Room.e57 s0 < Dinning Room> - 70% points: 18,93
Dinning Room.e57 s0 < Dinning Room> - 70% points: 30,29
Dinning Room.e57 s0 < Dinning Room> - 80% points: 30,29
Dinning Room.e57 s0 < Dinning Room> - 100% points: 31,86
Dinning Room.e57 s0 < Dinning Room> - 100% points: 31,86
Dinning Room.e57 s0 < Dinning Room> - 100% points: 31,86
Dinning Room.e57 s0 < Dinning Room> - 100% points: 31,86
Dinning Room.e57 s0 < Dinning Room> - 100% points: 22,71
Dinning Room.e57 s0 < Dinning Room> - 100% points: 31,86
Dinning Room.e57 s0 < Dinning Room> - 100% points: 32,86
Dinning Room.e57 s0 < Dinning Room> - 100% points: 32,86
Dinning Room.e57 s0 < Dinning Room> - 100% points: 32,86
Dinning Room.e57 s0 < Dinning Room> - 100% points: 32,86
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Dinning Room.e57 s0 < Dinning Room> - 100% points: 32,86
Dinning Room.e57 s0 < Dinning Room> - 100% points: 32,86
Dinning Room.e57 s0 < Dinning Room> - 100% points: 32,86
Dinning Room.e57 s0 < Dinning Room> - 100% points: 32,86
Dinning Room.e57 s0 < Dinning Room> - 100% points: 32,86
Dinning Room.e57 s0 < Dinning Room> - 100% points: 32,86
Dinning Room - 200% points: 32,86
Dinning Room - 200
  Hall.e57 s0 - Compression started
Hall.e57 s0 - Opening scan
Hall.e57 s0 - Hall> - Total points found: 37,942,348
Hall.e57 s0 - Hall> - 20% points: 7,588,468
Hall.e57 s0 - Hall> - 30% points: 11,382,702
Hall.e57 s0 - Hall> - 40% points: 15,176,936
Hall.e57 s0 - Hall> - 50% points: 18,971,170
Hall.e57 s0 - Hall> - 60% points: 22,765,404
Hall.e57 s0 - Hall> - 70% points: 22,765,404
Hall.e57 s0 - Hall> - 80% points: 30,353,872
Hall.e57 s0 - Hall> - 90% points: 34,148,106
Hall.e57 s0 - Hall> - 100% points: 34,148,106
Hall.e57 s0 - Hall> - Total points read: 37,942,348
Hall.e57 s0 - Hall> - Total points read: 37,942,348
Hall.e57 s0 - Hall> - Total points read: 37,942,348
Hall.e57 s0 - Hall> - Compression ended
  Total points found: 37,310,116
10% points: 3,731,011
20% points: 7,462,022
30% points: 11,193,033
40% points: 14,924,044
50% points: 18,655,055
60% points: 22,386,066
70% points: 22,386,066
70% points: 29,848,088
90% points: 33,379,099
100% points: 37,310,110
Total points rad: 37,310,116
                                                                                                                                                                                                                                                                                                                                                                                            70% points: 26,117,80% points: 29,848,90% points: 33,579,100% points: 37,310,70tal points read: 3. D:\projects\demo\E5.D:\projects\demo\E5.Closing scan
```

The result will be the corresponding jpg and pvz file for each E57 file.



The newly created pvz together with the corresponding jpg files can now be copied or moved to a Plantview project directory for analysis. The analysis process needs both pvz and jpg files to be in the same directory.

A 37 M points laser scan (6 mm @ 10 m) will produce approximately 23 Mb Plantview files.

A 144 M points laser scan (3 mm @ 10 m) will produce approximately 130 Mb Plantview files.

4. Running multiple instances

Multiple instances of the Scan Module can be started. To run parallel instances, the files need to be in multiple directories and the scan module started from the equivalent windows PowerShell.

The maximum number of parallel instances depends on the amount of memory (RAM). A computer system equipped with 64GB RAM can safely run 3 parallel instances. It is important to observe that the computer does not run out of memory during this process.

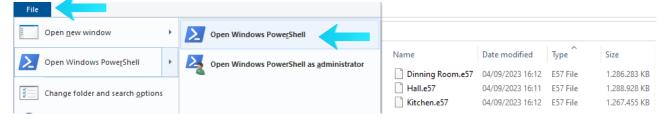
5. Options for the Scan Module running from the Windows PowerShell

Login into your Plantview Workspace.

Open File Explorer and go to the windows directory where the E57 files are located.



Press File>Open Windows PowerShell.



The windows PowerShell opens.

3

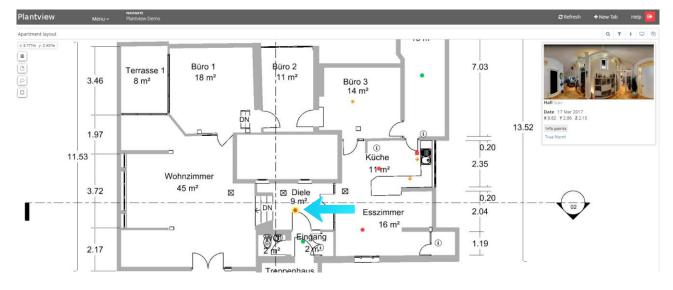
Type **pvz -help** in the command prompt and press **Enter** to display all options.

```
PS D:\projects\E57\E57\4> pvz -h
pvz.exe [v1.0]
(c) viin GmbH. All rights reserved.
usage: pvz.exe [OPTIONS] [FILE]
Compress all the E57 files in the current or in the FILE directory
-h print the help message
-o <dir path> output directory path (the FILE directory by default)
-q <percentage> image quality (50 percent by default)
-c <correction> gamma correction for colored image (1 by default)
-b <correction> gamma correction for black & white image (2.2 by default)
-d <tolerance> north Z tolerance Down (20.00 meters by default)
Please report issues at support@plantview.info
PS D:\projects\E57\E57\4>
```

Option	Description	Example
-h	Displays the help message with all options	pvz -h
-o <dir path=""></dir>	The output directory path (Default is the FILE directory path)	pvz -o d:/temp
-q <percentage></percentage>	Defines the image quality (Default is 50%) A higher percentage will increase the quality and size of the image	pvz -q 70
-c <correction></correction>	Gamma correction for colored images (Default is 1) A larger value will create a brighter image	pvz -c 2
-b <correction></correction>	Gamma correction for black & white images (Default is 2.2) A larger value will create a brighter image	pvz -b 3
-d <tolerance></tolerance>	North Z tolerance down (Default 20m)	pvz -d 50

6. Measurements

Double clicking on a scan position to enter the virtual tour mode.



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Locate the area you want to perform a measurement.

Press on the **Distance** symbol and activate it. (Turns red)

Locate two points (vertices) to define the distance you want to measure.



Press on the **Vertex** symbol and activate it (turns red)

Locate a point (vertex) to display its coordinates.

Press on the measurement or vertex result to display the extended information for every measurement plus a list of all vertices.



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Distance	Absolute distance between the two vertices
XY	Distance between the two vertices keeping Z constant (Z defined by first vertex)
ΔΧ	Difference between the two X coordinates
ΔΥ	Difference between the two Y coordinates
ΔΖ	Difference between the two Z coordinates