Instructions of SimulyzerLVLib
Version 1.0.1

Version-History:

Pos	Version	Author	Date	Changes
1	1.0.0	Hua	15.02.2018	Created
2	1.0.0	Hua	22.02.2018	Change Setup
3	1.0.0	Hua	17.05.2018	Add Table of Simulyzer-VIs and Screenshot of SimpleCall
4	1.0.0	Hua	16.11.2018	Update Simulyzer_64.dll, add Screenshot of FrontPanelSimpleCall
5	1.0.0	Hua	27.05.2019	Table of Simulyzer-VIs, changed GetSimulyzer
6	1.0.0	Hua	09.07.2019	Simulyzer_64.dll, Simulyzer.dll are equal to GUI's 2.6.19
7	1.0.0	Hua	05.12.2019	Simulyzer_64.dll, Simulyzer.dll are equal to GUI's 2.6.21
8	1.0.0	Hua	20.03.2020	Simulyzer_64.dll, Simulyzer.dll are equal to GUI's 2.6.21 FPGA Version: 0241
9	1.0.0	Hua	25.03.2020	Added rawDataFileOut and sensorDataFileOut of loadConfiguration.vi
10	1.0.0	Hua	08.05.2020	Simulyzer_64.dll, Simulyzer.dll are equal to PSI5_GUI's 2.6.21 with FPGA_Version 0241 and DSI_GUI's 1.8.2 with FPGA_Version 0421. Added ReleaseSimulyzer.vi
11	1.0.1	Perkins	02.08.2021	some design changes and typos removed

Content

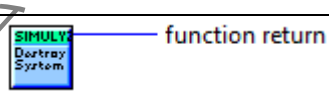
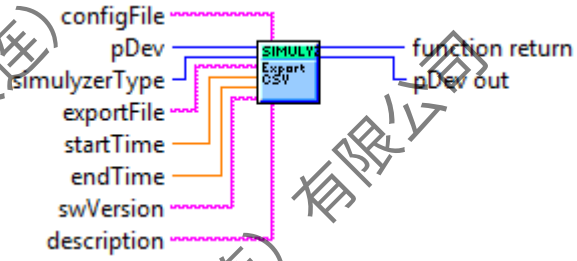
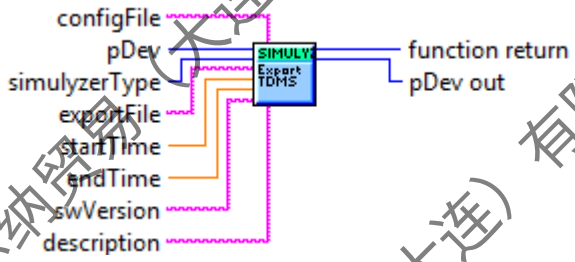
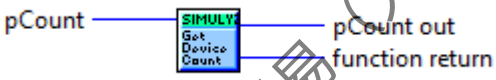
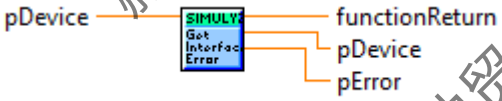
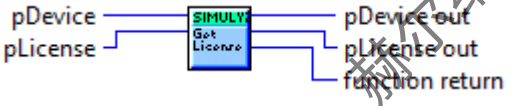
1 General Information

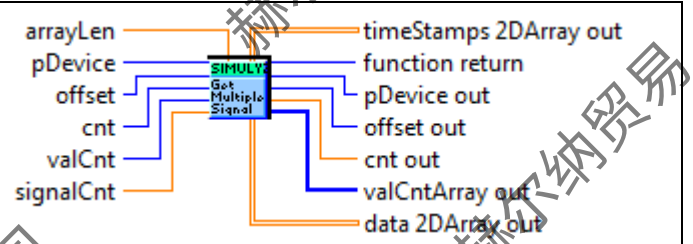
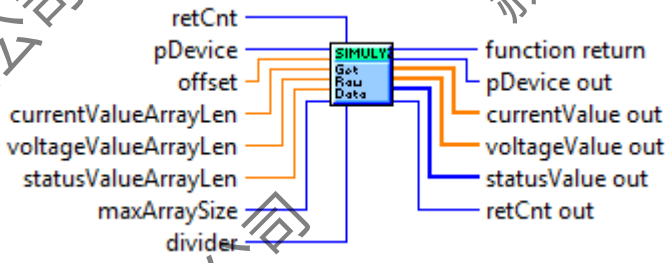
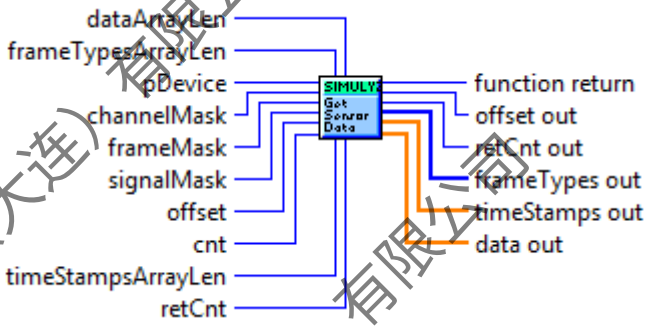
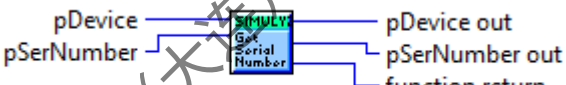
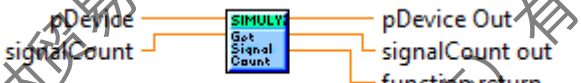
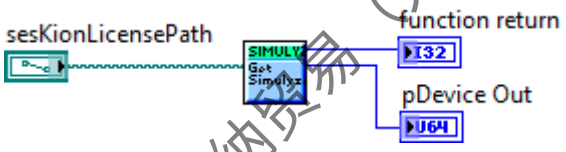
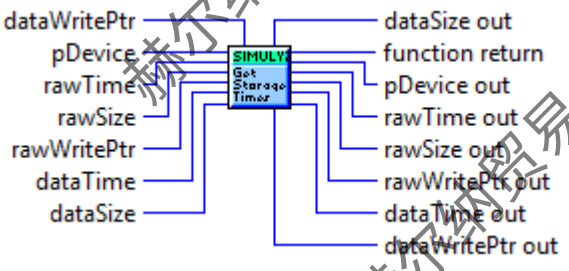
Folder consists of Simulyzer.dll, Simulyzer_64.dll and following sub folders:

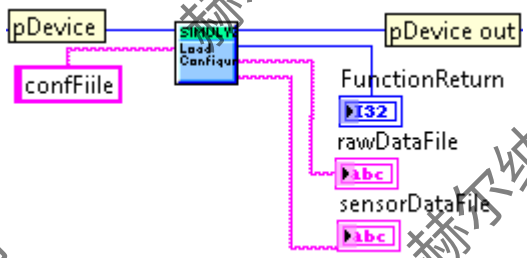
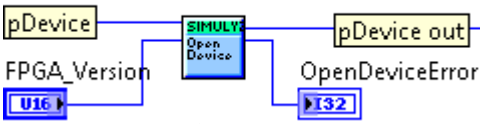
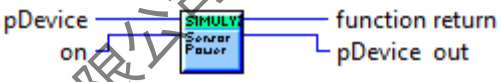
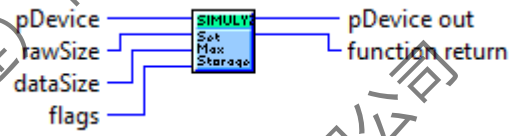
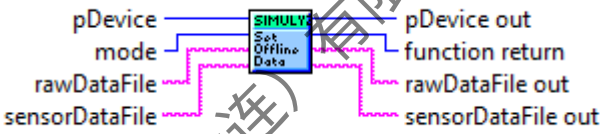
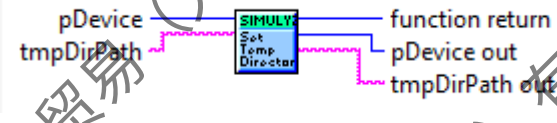
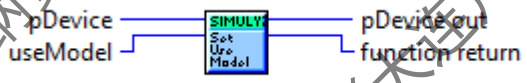
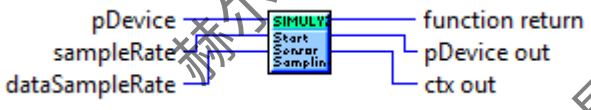
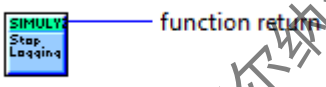
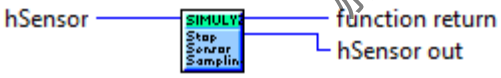
1.1 Simulyzer-VIs consisting of 28 Vis.

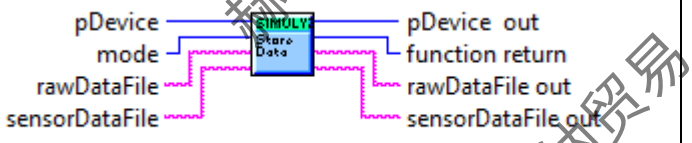
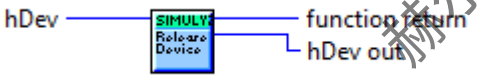
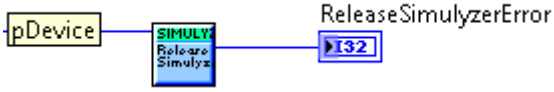
(Note: PDevice is equal to pDev , hSimulyzer and hSimu)

Simulyzer-VIs Table:

Index	Name	Input	Output
1	CheckSimulyzerLicenseFile.vi		
2	destroySystem.vi		
3	exportCSV.vi		
4	exportTDMS.vi		
5	getDeviceCount.vi		
6	getFirmwareVersion.vi		
7	getInterfaceError.vi		
8	getLicense.vi		

9	getMultipleSignalData.vi	
10	getRawData.vi	
11	getSensorData.vi	
12	getSerialNumber.vi	
13	getSignalCount.vi	
14	getSimulyzer.vi	
15	getStorageTimes.vi	

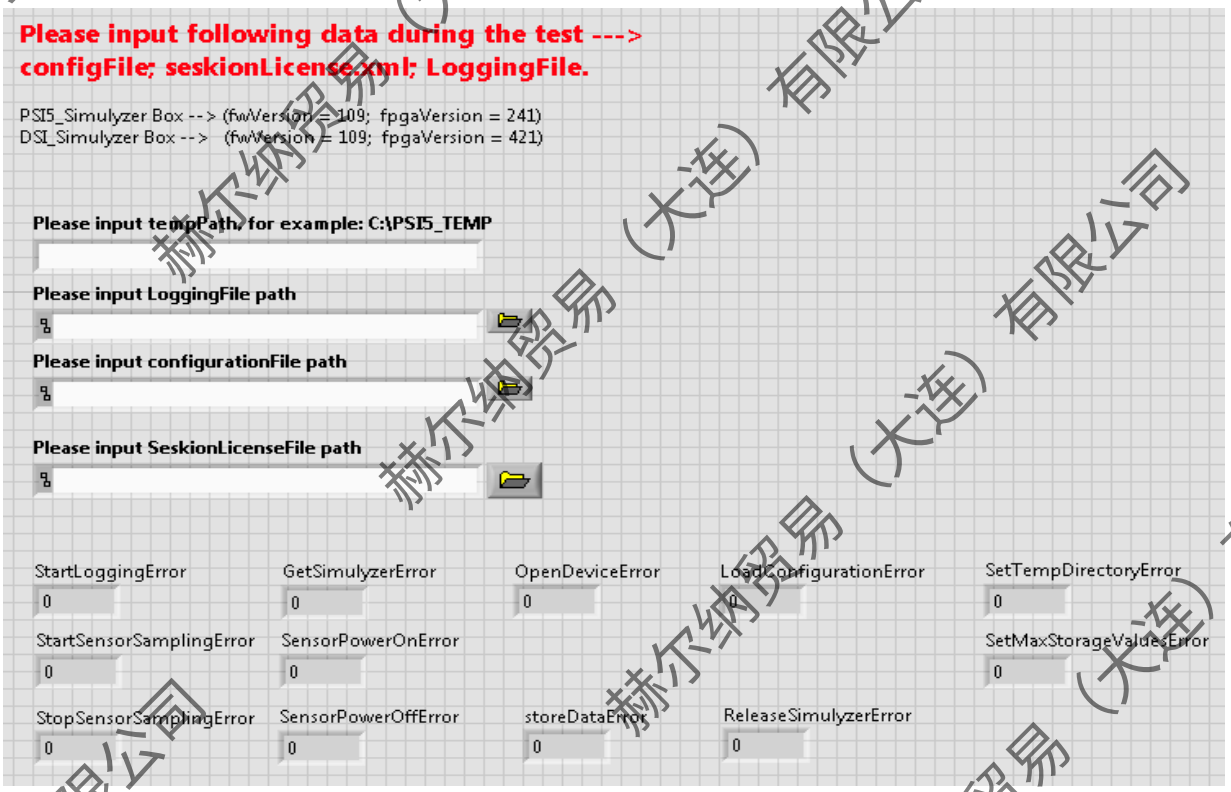
16	loadConfiguration.vi	
17	openDevice.vi	
18	sensorPower.vi	
19	setMaxStorageValues.vi	
20	setOfflineData.vi	
21	setTempDirectoryPath.vi	
22	setUseModel.vi(no active)	
23	startLogging.vi	
24	startSensorSampling.vi	
25	stopLogging.vi	
26	stopSensorSampling.vi	

27	storeData.vi	
28	releasDevice.vi (Please do not use in the future.)	
29	releasSimulyzer.vi	

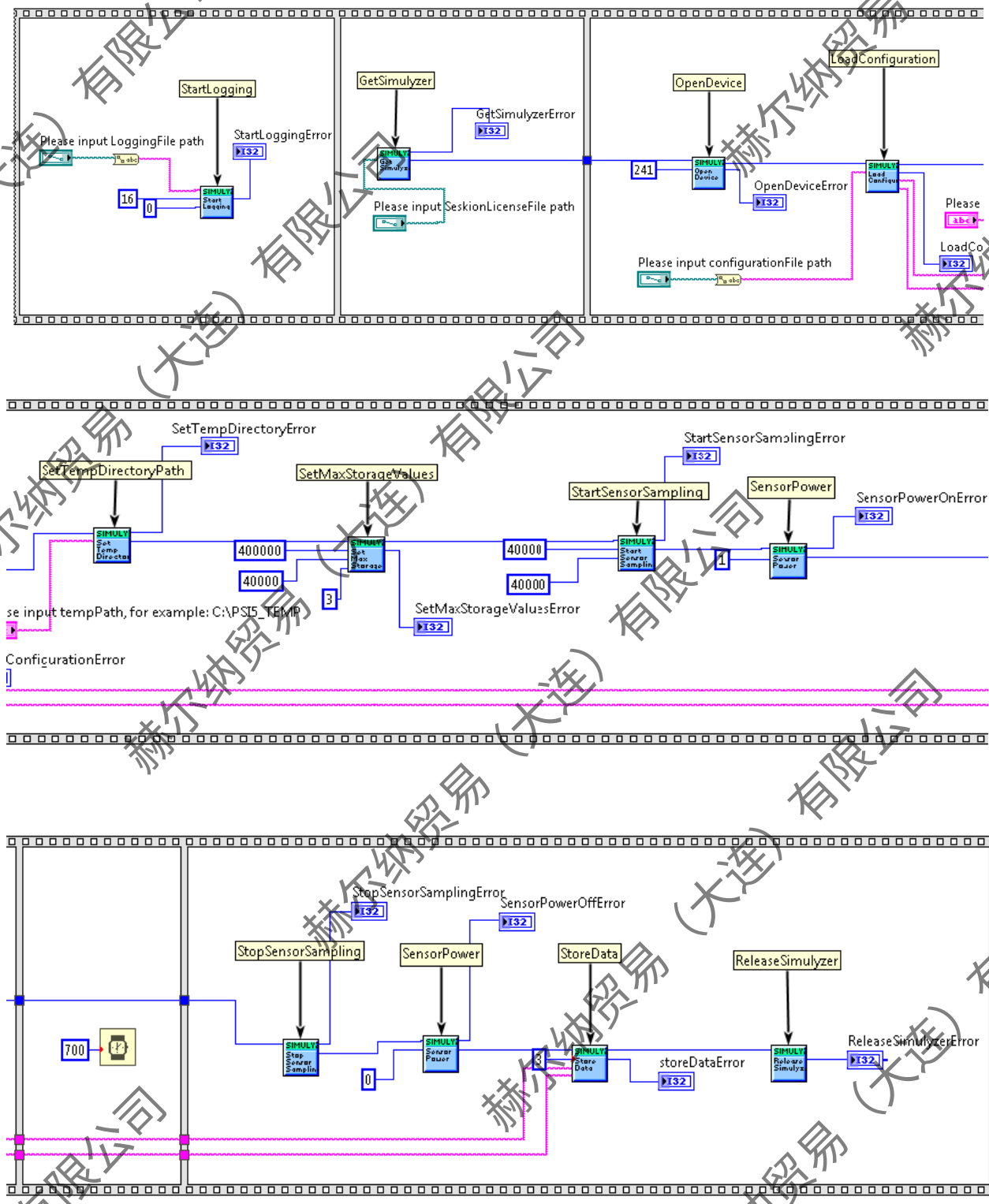
1.2 Example consisting of two examples

simpleCall.vi with FPGA-Version 0241(Screenshot) and simpleCall_DSI.vi with FPGA-Version 0421

Front Panel:



Block Diagram:



2 Using the Simulyzer-VIs

2.1 Recommend:

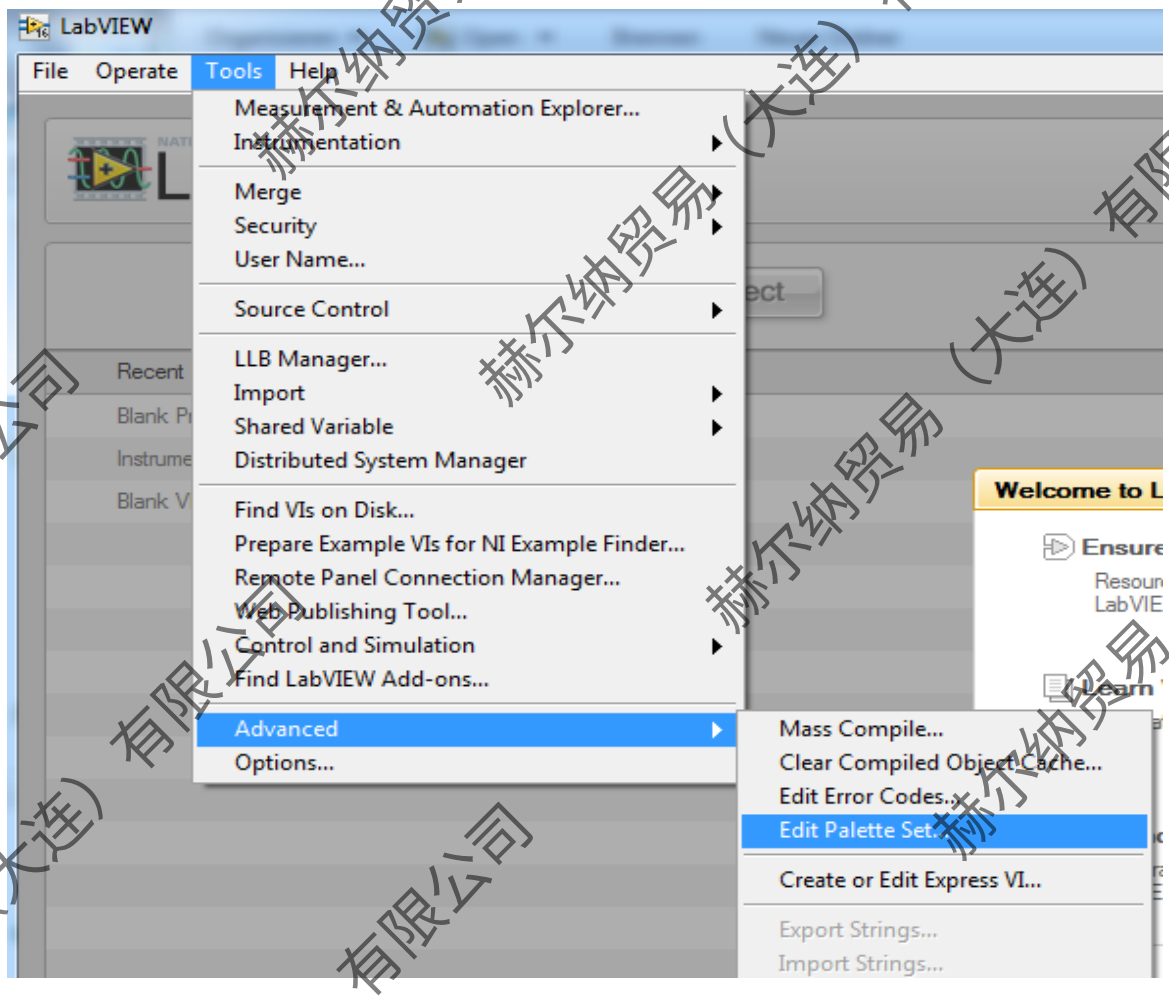
1. Create a sub palette in LabView functions palette with name, example SesKionSimulyzer.
2. Add VIs to SesKionSimulyzer and save.

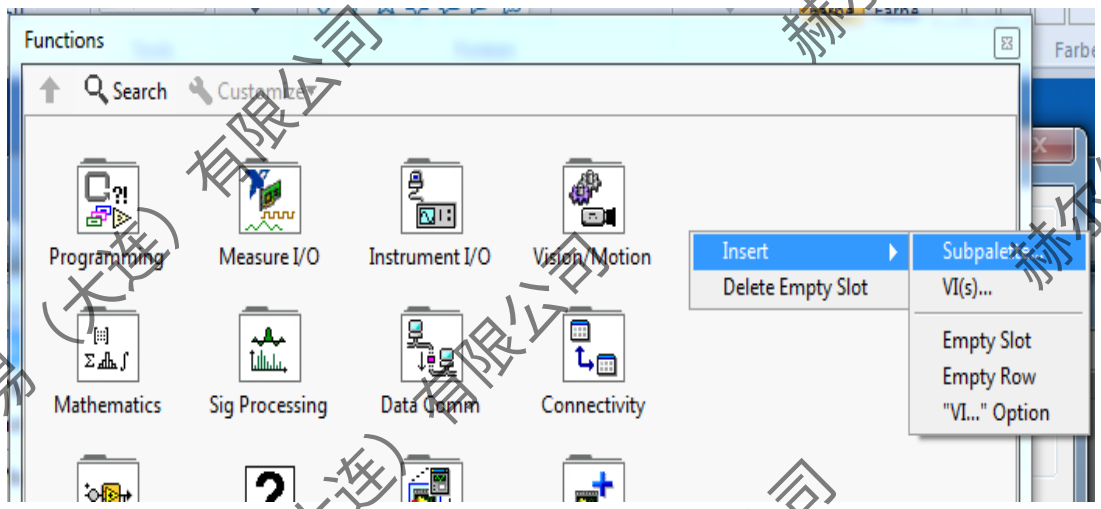
2.2 Note:

1. PDevice is equal to pDev , hSimulyzer and hSimu
2. When SetTempDirectoryPath.vi is called, the folder, for example PSI5_TEMP must exist.
3. PSI5_FPGA_IMAGE_VERSION **0x0241;** PSI5_MICO_APPLICATION_TYPE **0x0002**; PSI5_MICO_APPLICATION_VERSION **0x012D**
4. DSI_FPGA_IMAGE_VERSION **0x0421;** DSI_MICO_APPLICATION_TYPE **0x0004**; DSI_MICO_APPLICATION_VERSION **0x0120**

2.3 Appendix:

Create a Subpalette: Open LabView





3 Vi call return value Definitions

#define SIMULYZER_ERROR_SUCCESS
(0) //!< call was successful
#define SIMULYZER_ERROR_DEVICE_NOT_OPEN
(-1) //!< call to a device which was not successful opened
#define SIMULYZER_ERROR_CALIBRATION_ACTIVE
(-2) //!< call to a device function when calibrating is active
#define SIMULYZER_ERROR_TEMP_PATH_NOT_SET
(-3) //!< call to a device without setting a valid temp directory
#define SIMULYZER_ERROR_UNABLE_TO_START_THREADS
(-4) //!< start sampling could not start all threads
#define SIMULYZER_ERROR_RAW_STORAGE
(-5) //!< unexpected error occurred when storing raw (analog) data
#define SIMULYZER_ERROR_DATA_STORAGE
(-6) //!< unexpected error occurred when storing sensor data
#define SIMULYZER_ERROR_RECEIVER
(-7) //!< unexpected error occurred when receiving data
#define SIMULYZER_ERROR_TRANSMITTER
(-8) //!< unexpected error occurred when transmitting data
#define SIMULYZER_ERROR_UNABLE_TO_STOP_THREADS
(-9) //!< stop sampling could not stop all threads
#define SIMULYZER_ERROR_NO_DEVICE

(-10) //!< no device to connect to

#define SIMULYZER_ERROR_FILE_NOT_FOUND

(-11) //!< file not found

#define SIMULYZER_ERROR_TRIGGER_STORAGE

(-12) //!< unexpected error occurred when storing trigger data

#define SIMULYZER_ERROR_UNSUPPORTED_FUNCTION

(-13) //!< active device does not support this function

#define SIMULYZER_ERROR_INVALID_STOP_CALL

(-14) //!< call to StopSampling without previous call to StartSampling

#define SIMULYZER_ERROR_INVALID_START_CALL

(-15) //!< recursive call to StartSampling

#define SIMULYZER_ERROR_SYSTEMCONFIGINVALID

(-16) //!< system configuration file is invalid or one of the requested devices could not be opened

#define SIMULYZER_FLASH_PROGRAMMING_ERROR

(-17) //!< error during flash update

#define SIMULYZER_ERROR_EMBEDDED_CONF_TIMEOUT

(-18) //!< embedded controller config timeout

#define SIMULYZER_ERROR_UNKNOWN_EXCEPTION

(-9999) //!< an unknown exception occurred when processing the API-call