TDK·Lambda

Quick Start Guide – Z+ TDK-Lambda CD-ROM

A. **Labview Runtime Engine and Z+ Applications Installation**

(Easy start to communicate via RS-232/485 or GPIB)

1. Insert CD-ROM.

2. Select "**Run-Time & Application**". Refer to Fig 1

Fig 1

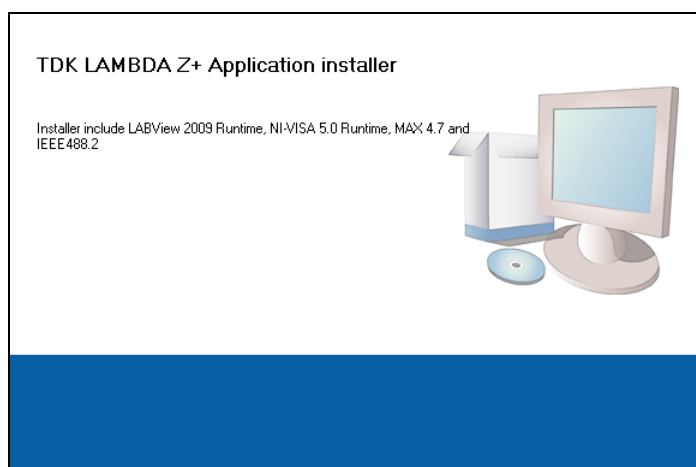3. The installation will start as shown in Fig 2

Fig 2

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4.	Select directory for installation. Refer to Fig 3

Destination Directory
Select the primary installation directory.

All software will be installed in the following location(s). To install software into a different location(s), click the Browse button and select another directory.

Directory for TDK Lambda Z+
C:\Program Files\TDK-Lambda \   [Browse...]

Directory for National Instruments products
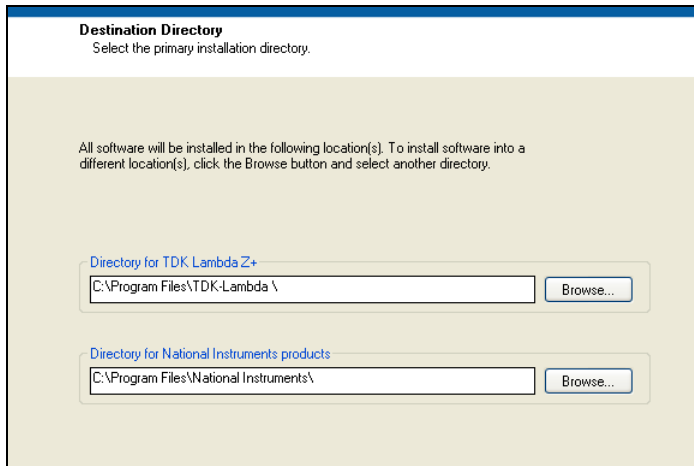C:\Program Files\National Instruments\   [Browse...]

Fig 3

5.	After Installation is completed, an Icon will be created in Programs Directory.

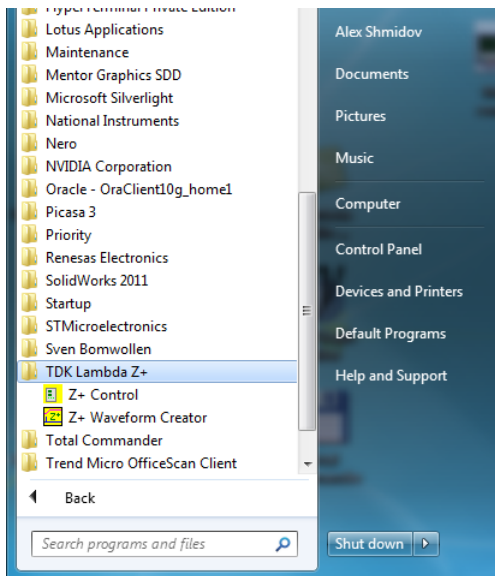	Select an application from TDK LAMBDA Z+ Icon. Refer to Fig 4

Fig 4

Now application is ready for Serial (232/485) and GPIB communication

USB driver must be installed before this application can be used with USB. For USB driver installation, please refer to chapter B.

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B.   USB Driver Installation

1.   Connect Power supply to PC with USB cable.

2.   Select "*USB"* interface from Front Panel communication menu.

3.   Select from "Z+ Driver Utility", *"USB driver x32" or "USB driver x64"* according to your Operating System

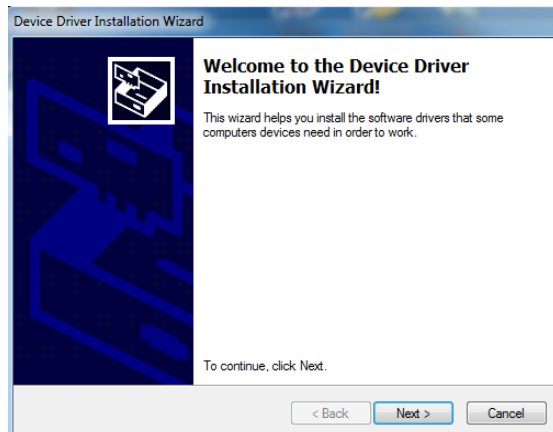4.   The installation of the driver will begin. Refer to Fig 5 and 6
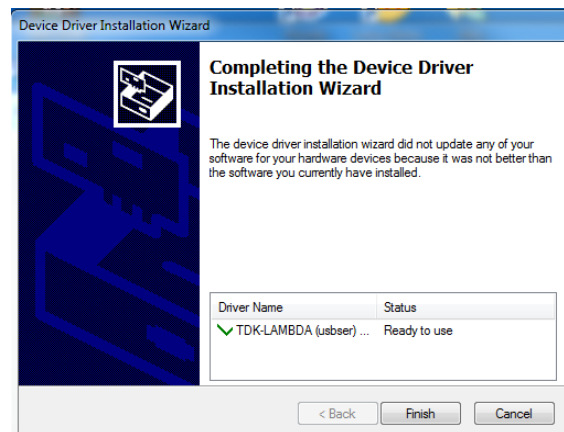

Fig 5

Fig 6

5.   USB driver will be installed as an additional serial port (Example: seen as Z+ serial port COM11) in the picture below. Refer to Fig 7
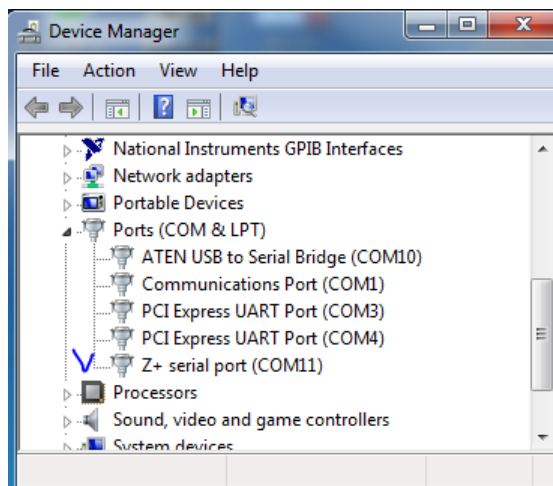

Fig 7

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C.   Z+ Control Application

1.   Select START->All Programs -> TDK Lambda Z+ -> Z+ Control.

2.   Press *RUN* button (1) to run application. Refer to Fig 8

3.   Set application settings according to the power supply settings.

   a.   Unit Address (2)
   b.   Port (VISA session -COM port for RS232/485 and USB), GPIB::x::INSTR for GPIB (3) and TCPIP::x::INSTR for LAN (Refer to chapter E). Select "Refresh" to update connection.
   c.   Baud Rate for RS232/485 and USB (4)
   d.   Communication Language (5)
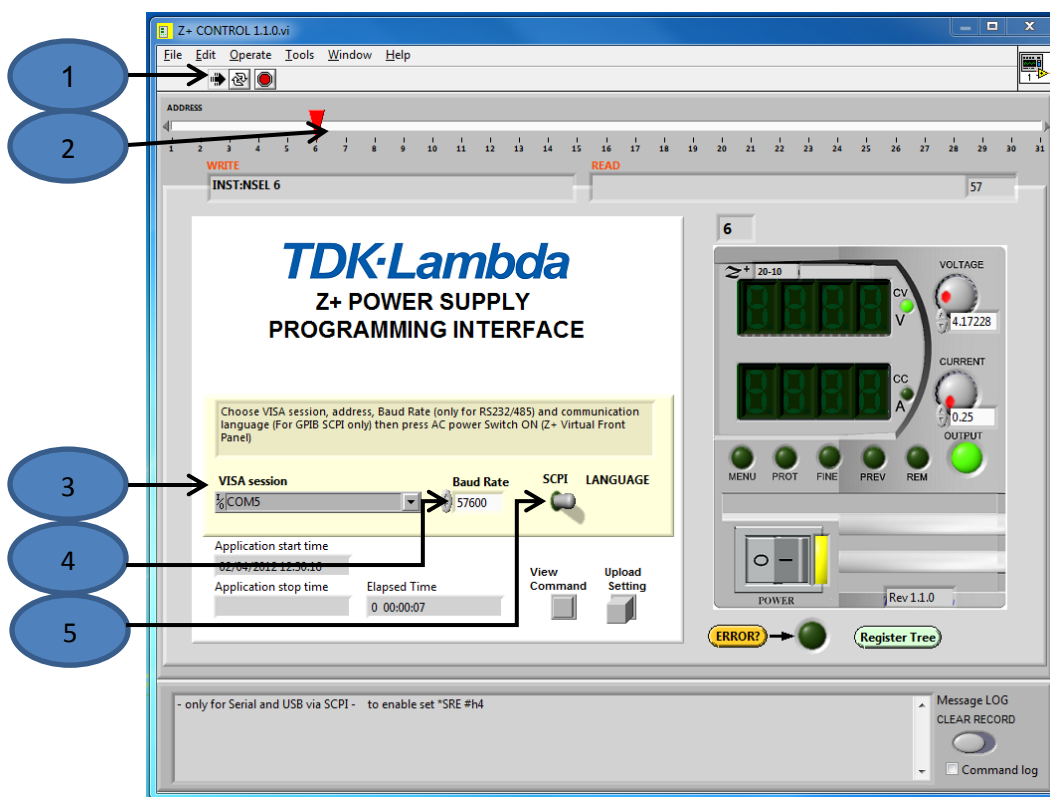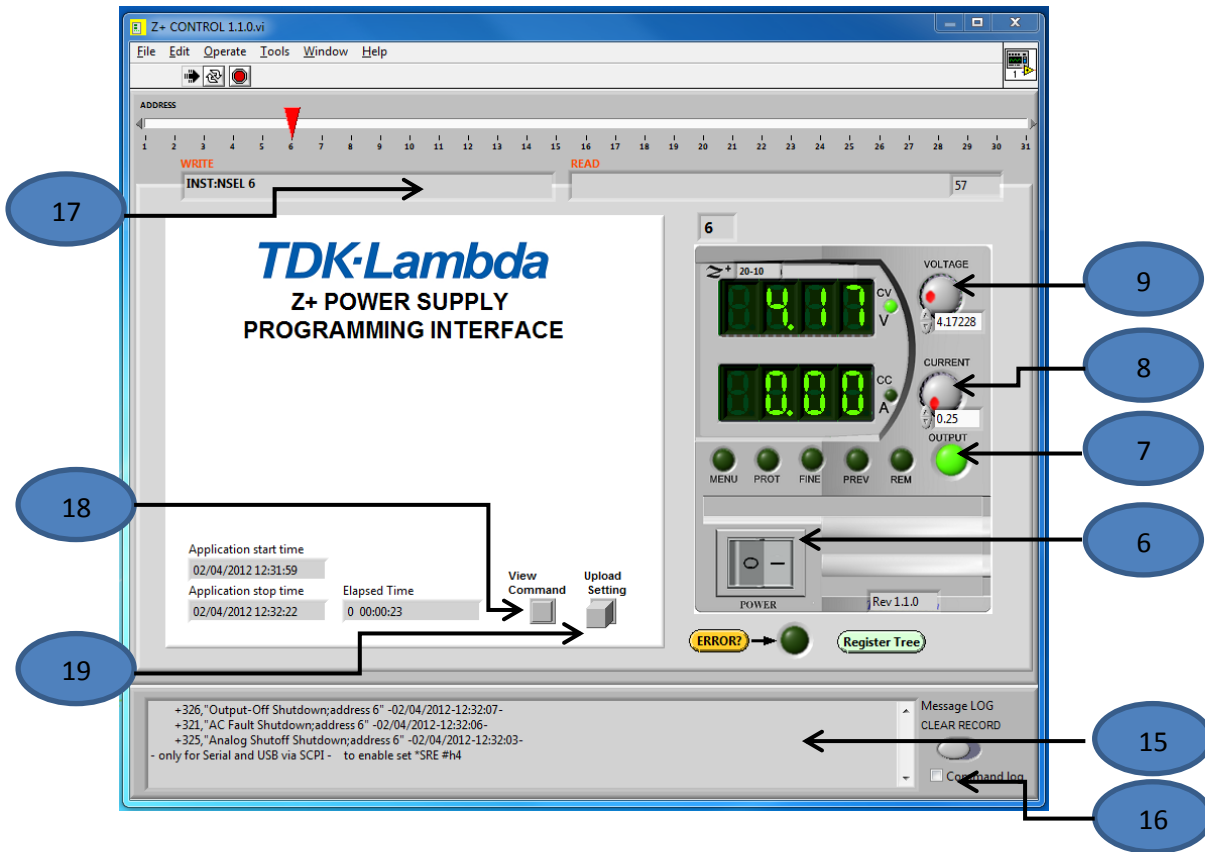

Fig 8

![TDK-Lambda]

Fig 9

4. Switch ON Power switch (6). Refer to Fig 9

5. Press OUTPUT button (7) to enable / disable the output.

6. Change Voltage and Current setting by voltage (9) and current (8) encoder.

7. Press PROT LED/Button (10) for protection setting. To return - press button again. Refer to Fig 10.

8. Message Log (15). Shows all faults, error and warnings (command if (16) selected) which occurred during operation. This section is only applicable for SCPI via serial and USB interface.

9. View command button (18) for show/hide command row (17)

10. Update setting (19) functions refresh all application controls and indicator setting according PSU state.
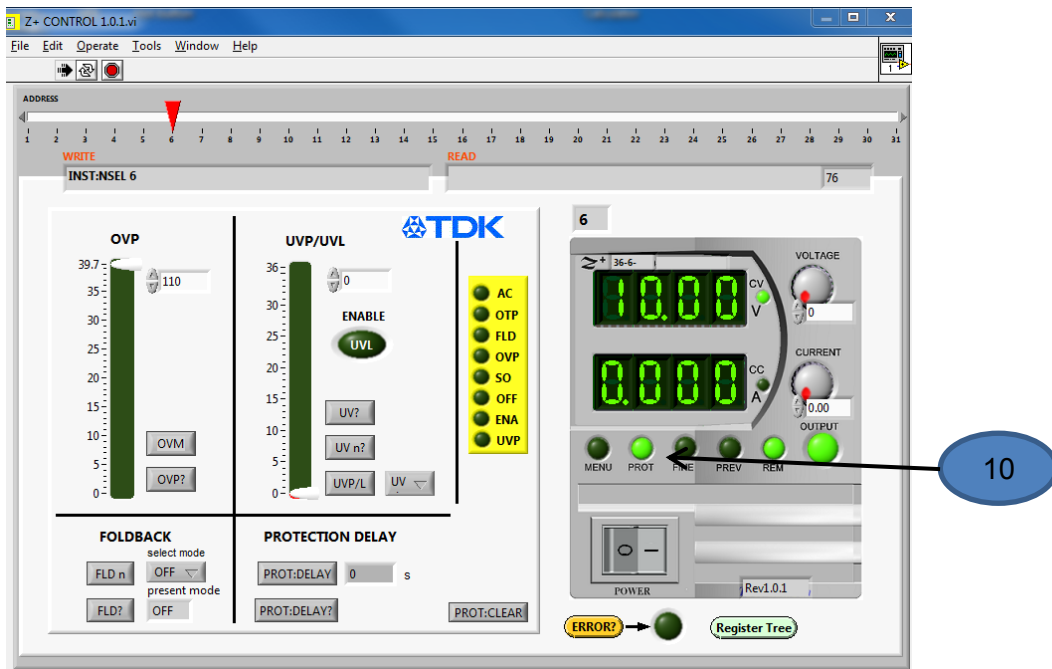
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Fig 10

11.   Press FINE LED/Button (11) for auxiliary commands and queries.
         To return - press the button again. Refer to Fig 11

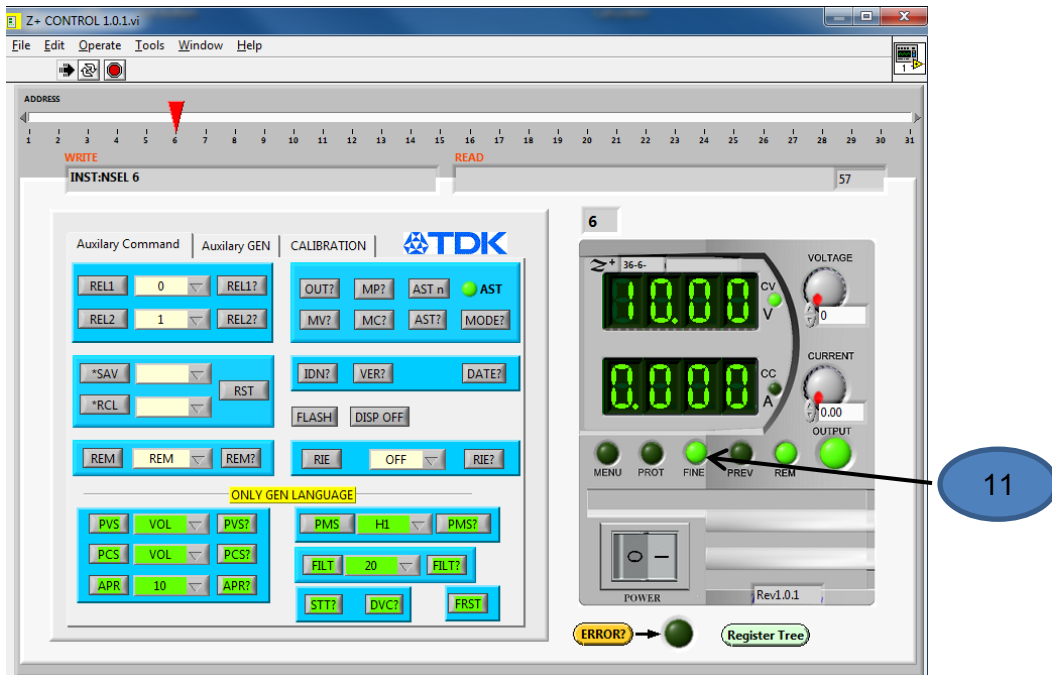Fig 11

12.   Press MENU LED/Button (12) for advance waveform setting.
         To return - press button again. Refer to Fig 12.

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NOTE: For WAVE and LIST parameters, (.) must be used for decimal numbers and (,) must be used for separation between numbers.
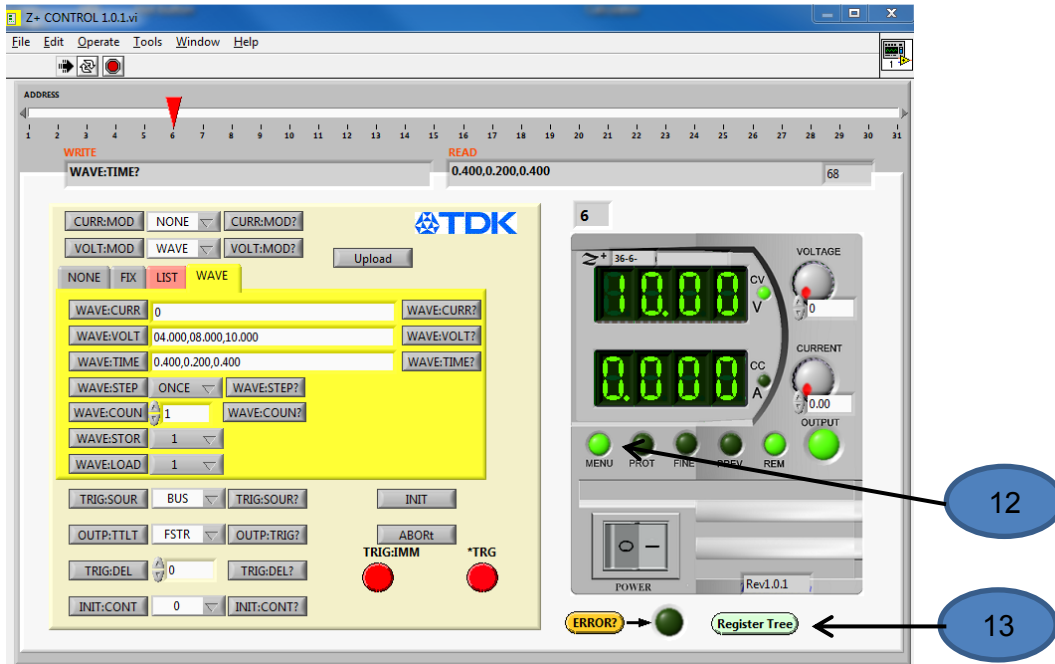

Fig 12

13.   Press "Register Tree" Button (13) for setting and viewing Register tree.

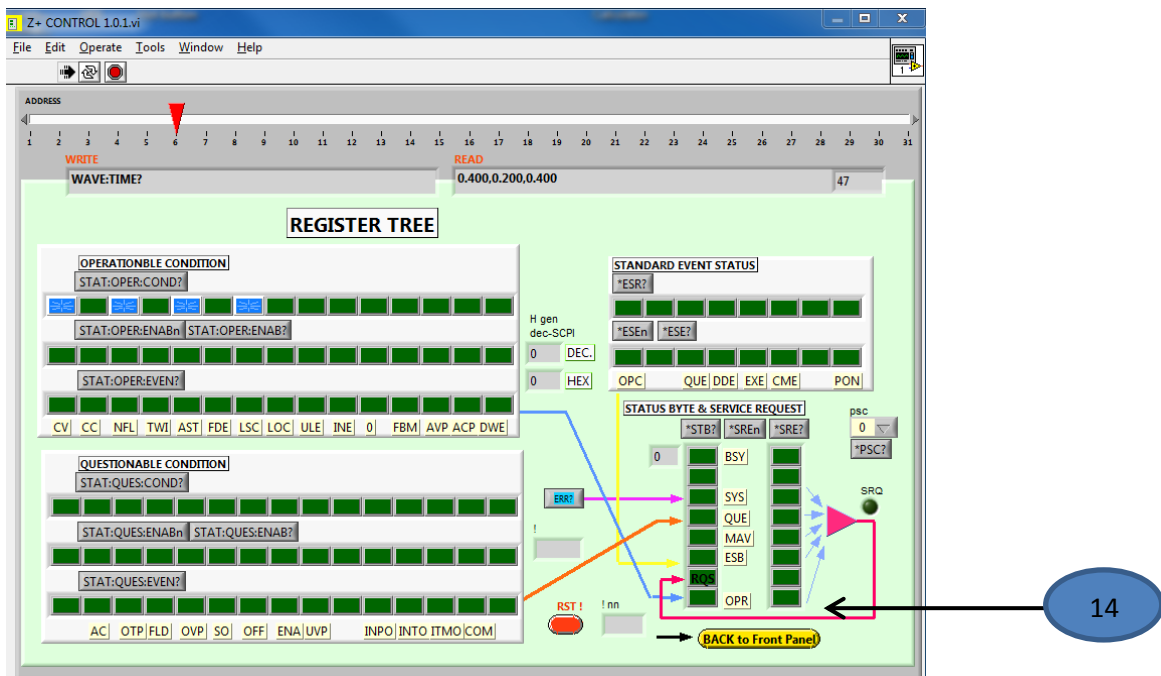Refer to Fig 13. Press button (14) to return to front panel.

Fig 13

14.   To STOP the application, set power switch (6) to the OFF position. Refer to Fig 9

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D.   Z+ Waveform Creator

Application for arbitrary waveform creates. FIX, LIST, WAVE mode

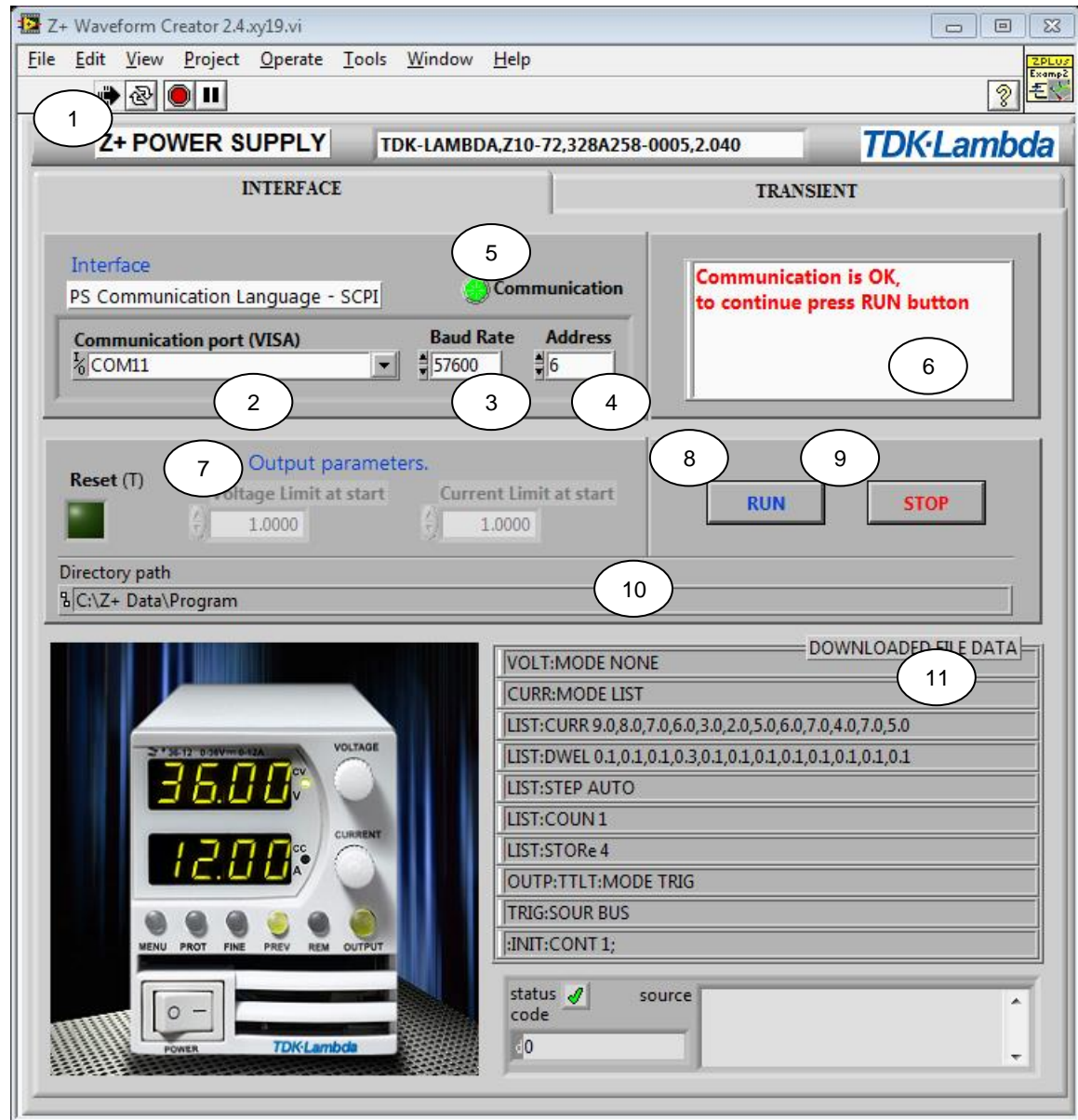1.   Select START->All Programs -> TDK Lambda Z+ -> Z+ Waveform Creator.

Fig 14

2.   Press **RUN** button (1) to run application. Refer to Fig 14

3.   Set communication parameters according to parameters set in power supply.

> a. Port (VISA - COM port for RS232/485 and USB), GPIB::x::INSTR for GPIB (2). and TCPIP::x::INSTR for LAN (Refer to chapter E). Select "Refresh" to update connection.
> b. Baud Rate for RS232/485 and USB (3)
> c. Communication Language is SCPI only.
> d. Unit Address (4)

4. When communication is OK, LED (5) will illuminate with Green color.
   If Communication LED stays RED, communication has not been established.
5. Communication status message is displayed in (6).
6. Light Green button (7) selects power supply reset and allows setting of initial value for voltage and current.
7. Press "RUN" (8) button to run the main procedure in the application. The INTERFACE page will immediately switch to TRANSIENT page (15).
8. To stop application on this stage, press "STOP" button (9)
9. Directory path (10) to directory where profile script .txt file is stored.
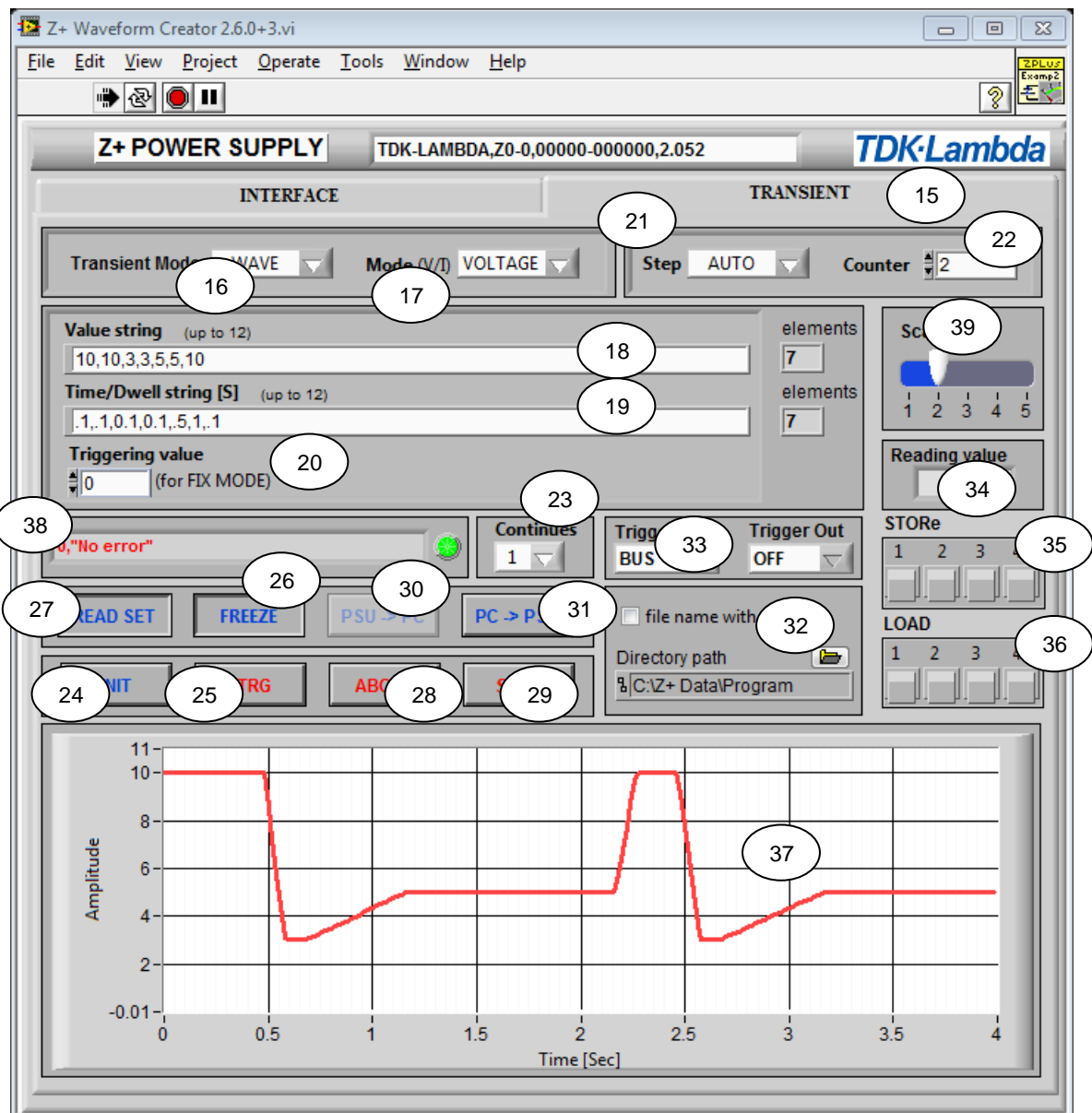10. Data (11) received by PSU from .txt file
NOTE: (12…14) are not available.

Fig 15

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11.	The following controls are shown in Fig 15:

- Select Transient Mode (16)	Types – WAVE, NONE, FIX, LIST.	Example shown – WAVE.

- Mode (17)	Types – Voltage, Current, Example shown – VOLTAGE	Possible Commands:	VOLT (CURR) MODE	WAVE/FIX/LIST/NONE.	Example shown VOLT:MODE WAVE

- Value String (18)	Insert up to 12 values. Elements counter located at the right of	the row.	Possible Commands	WAVE (LIST):VOLT (CURR) x,x,x,x,……… Example shown	WAVE:VOLT 10,10,3,3,5,5,10	as WAVE is selected in Transient MODE and VOLT is selected in MODE

- Time/Dwell String (19)	Insert up to 12 values. Elements counter located at the right of the row. Possible Commands:	WAVE:TIME x,x,x,x,……..	LIST:DWEL x,x,x,x,…… Example shown:	WAVE:TIME 0.1,0.1,0.01,0.1,0.5,1.0,0.1 as WAVE is selected in Transient MODE

NOTE: For WAVE and LIST parameters, (.) must be used for decimal numbers and (,) must be used for separation between numbers.

- Triggering Value (20)	VOLT:TRIG 0 (If FIX Mode is selected in Transient Mode (16))

- Step (21)	Commands Possible:	LIST (WAVE):STEP AUTO/ONCE.	Example Shown:	WAVE:STEP AUTO.

- Counter (22)	To select number of repetitions of the cycle.	Commands Possible LIST (WAVE):COUN X	where X = 1-9999, inf.	Example Shown:	WAVE:COUN 2.

- Continuous (23)	To initiate the trigger system. Defines if Trigger state is initialized or not.	Commands Possible:	INIT:CONT ON/OFF or INIT:CONT 1/0.	Example Shown INIT:CONT 0.

12.	INIT button (24)	For Initializing the Trigger (enable *TRG button).

13.	*TRG button (25)	When it is enabled, press it. See GRAPH (36)

14.	Running/Freeze Button (26)	Allows to freeze the graph (37) but doesn't stop the program from running.

15.	Read SET/Measured value selector (27) and indicator (34).

16.	Abort (28)	The application will abort if some parameter was changed or ABORT button was pressed. To run program again repeat steps 11, 12.

17.	Trigger IN source EXTernal or BUS. Trigger OUT mode	(33)

18.	Graph scale (39).

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19.   Error (38)   Reports error when data cannot be accepted.

20.   STOP switch (29) Press switch to stop the application.

21.   Sample resolution for: Serial and USB-20ms, GPIB-25ms, LAN-50ms if the program less than 10min. Else the sample resolution is 100ms for all interfaces.

STORe

Any values, as Transient mode (16) (WAVE and LIST only), Voltage or Current mode (17), values (18), Time/Dwell (19), Step (21), Counter (22) can be stored in memory. Press any button in STORe array (35). Memory retains data after AC power OFF also.

LOAD

To load stored data press required button in load array (36). Same operation can be done via front panel also. To start sequence, refer to steps 11, 12. Stored data can be loaded after AC recycling.

Note: Continuous data (23), Triggers IN and OUT cannot be stored in the memory

PSU -> PC

Application upload follow LOAD x data, continues state, Trigger IN source and Trigger OUT mode and store it in script .txt file

   a) Select LOAD (36) ,Set Continues mode (23) and triggers I/O parameters -- (33)

   b) To save date in file name select "file name with date". Path to file location directory -- (32).

   c) To upload data from Power Supply to file press PSU->PC button (30).

   Note: The button become enabled when any LOAD button selected

PC -> PSU

Download script data file .txt to power supply

   a) Run application with other Power Supply.

   b) To download file to Power Supply press PC->PS button (31)

   c) Program ready to run. (INIT and *TRG)

E.   Add new LAN device

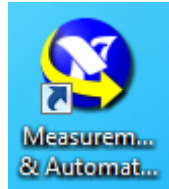1.   Open NI MAX program from desktop. Refer to Fig 16.

Fig 16

2.   Select **Devices and Interfaces**>>**Select Network Devices** (1). Refer to Fig 17

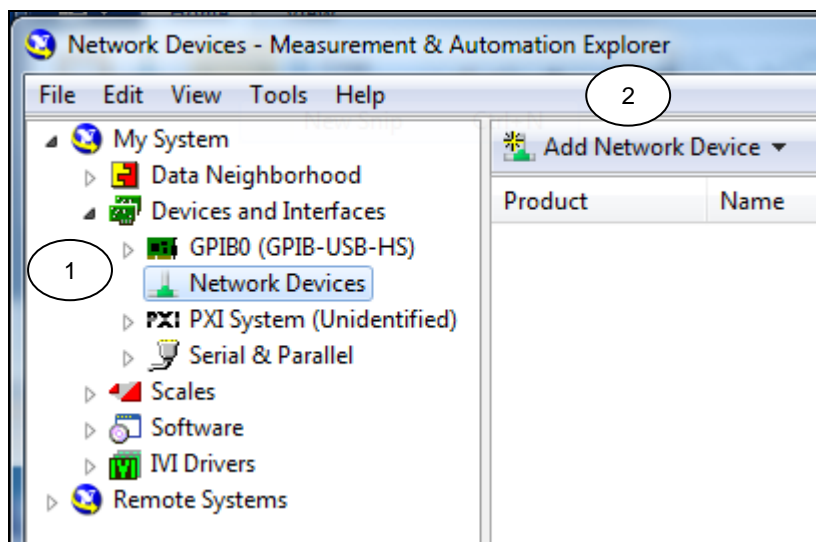3.   Select **Add Network Device** (2) -> **VISA TCP/IP Resource**…

Fig 17

4.   Select **Auto-detect of LAN Instrument**. Press **Next**. Refer to Fig 18

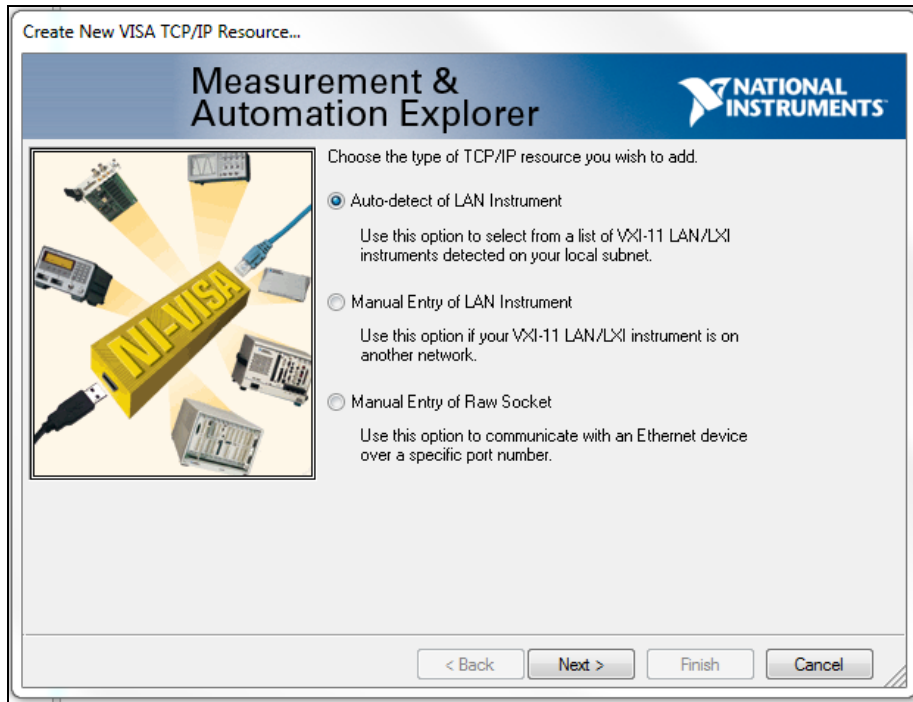**TDK·Lambda**

Fig 18

5.   The system should automatically find connected LAN devices. Refer to Fig 19.
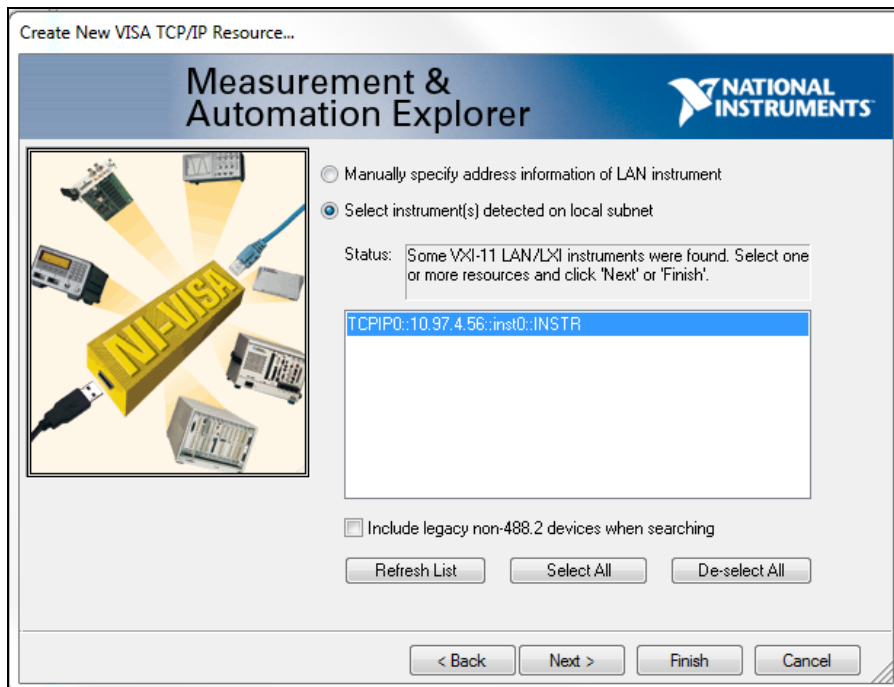
6.   Then select **Finish** button.

Fig 19

7.   Close NI MAX.

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