INSTRUCTION MANUAL

For the

RFUITT360001_v1.01

OPERATING MANUAL

Table of Contents

Introduction to RFUITT360001 Individual:

RFUITT360001 GUI (Graphical User Interface) is a software developed by RFME which can be used to expand the capabilities and usability of RFME's Turn Table and Power Detector with easy-to-use interface and operational modes.

The Antenna System has been specially designed for engineering colleges, training centers & industries, which don't have testing facilities. It is very useful for introducing practical verification of antenna operation to the students & Engineers.

The Antenna Trainer Kit is your gateway to unparalleled exploration and understanding of antenna parameters. The System capture signal at an interval of 1° rotation using motorized turn table and you can easily monitor the radiation pattern on RFME GUI.

Installation for Windows 10

A. Open the RF_KIT.msi file.

B. Welcome screen will be shown first. Press next to continue as shown in **Diagram 1.1**.

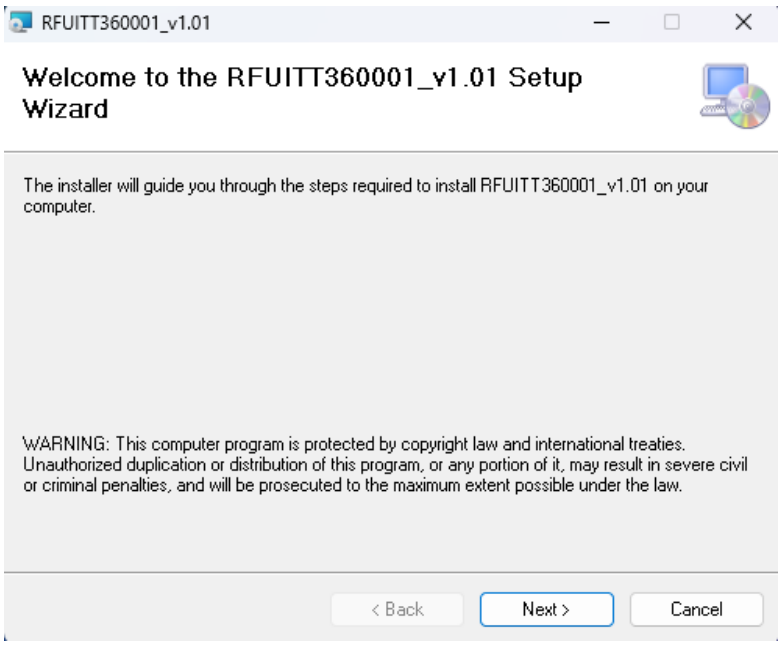


Diagram 1.1

C. Default location for installation is mentioned in **Diagram 1.2**. Press next to continue.

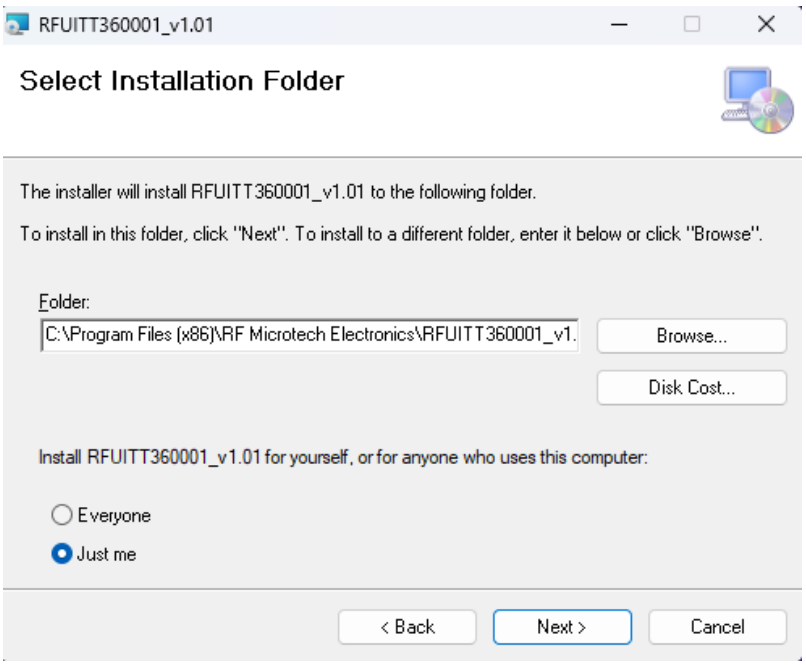


Diagram 1.5

D. Press Next to continue.

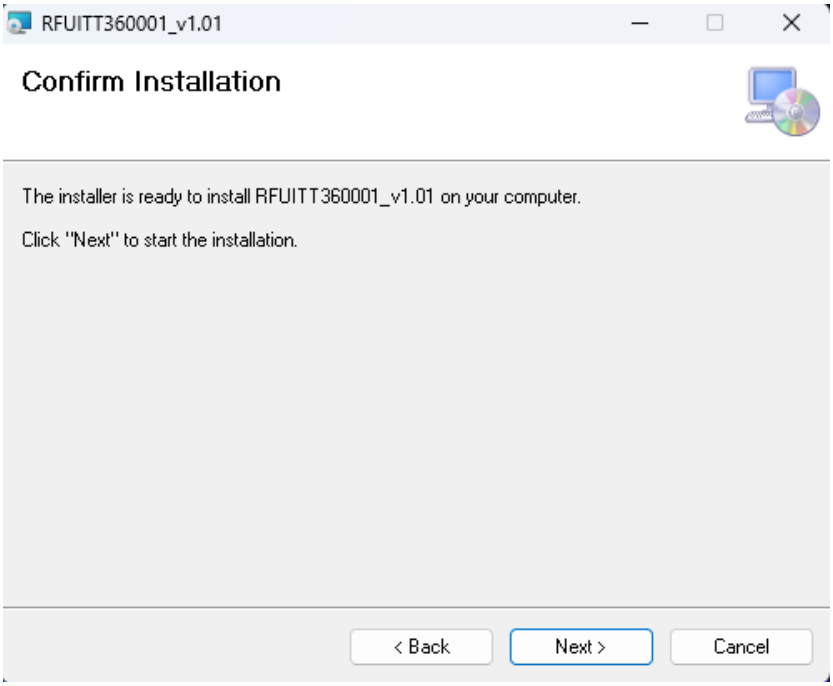


Diagram 1.6

After Installation, desktop as well as Windows Menu Bar will have its shortcut enabled.

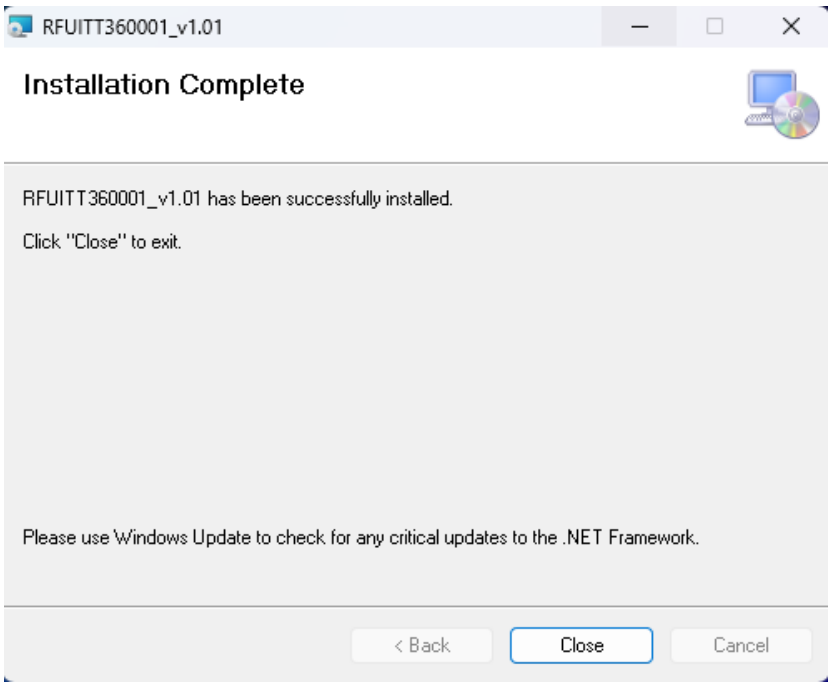


Diagram 1.7

RFUTITT360001 GUI LOGIN PAGE

Open the RFUTITT360001 GUI.

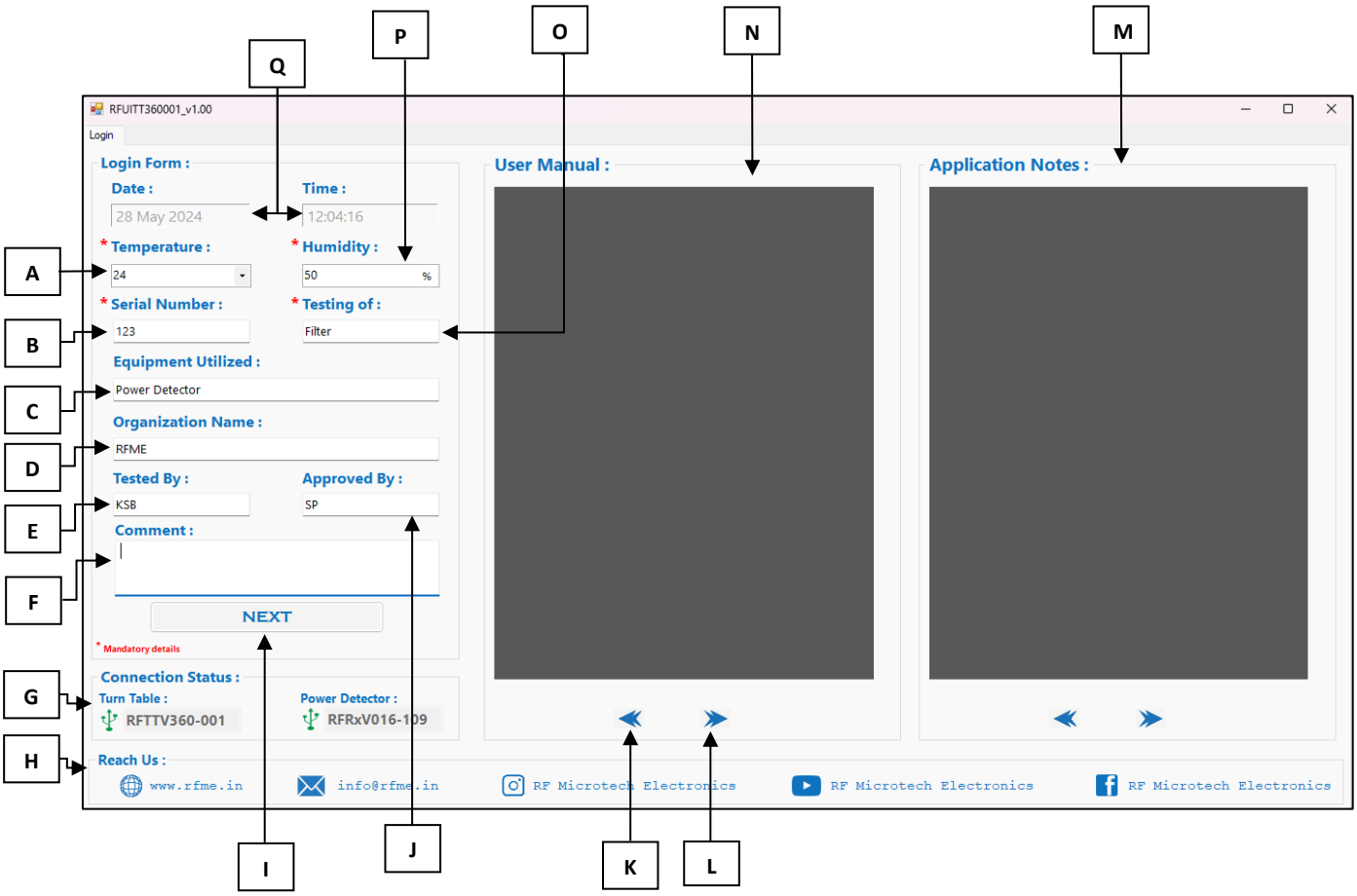


Diagram 2.0

Default window of the software is shown in the **Diagram 2.0**

A. Enter temperature of test environment.

B. Enter Serial Number of EUT.

C. Enter the Utilized Device Name.

D. Enter the Name of Organization.

E. Enter the name of Tested person.

F. Enter the necessary Comments.

G. Shows the connection status of the device. If device is connected, then USB symbol will be in Green.

H. This box shows the Social Media Links.

I. **NEXT** button. For more information, read **Operation Procedure**.

J. Enter the Name of Approved person.

K. Click this button for going back to previous page of the selected PDF.

L. Show the **NEXT PAGE** button. Click this button for moving forward to next page of the selected PDF.

M. PDF of selected Application notes will be displayed in this space.

N. PDF of selected user manual will be displayed in this space.

O. Enter the name of the device, on which the testing will be done.

P. Humidity of the test environment.

Q. Shows the DATE & TIME, which will be detected automatically from the system, and this window is not editable.

Operation Procedure

To operate the device using the RFUITT360001 GUI, ensure the device is powered on, allowing it to automatically connect to the Turn Table and Power Detector via USB cable to the PC.

[Note: If any device fails to connect, troubleshoot by either reconnecting the USB cable or toggling the device's power switch off and then back on.]

After establishing connection with the Turn Table and Power Detector, two pop-up windows will appear, each presenting the model number of the respective device. The default window displayed following connection is depicted in **Diagram 2.1**.

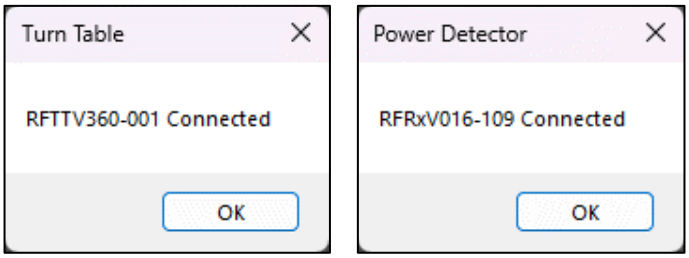


Diagram 2.1

Press “OK” button in the pop-up window to proceed.

[Note: Fill necessary details and proceed]

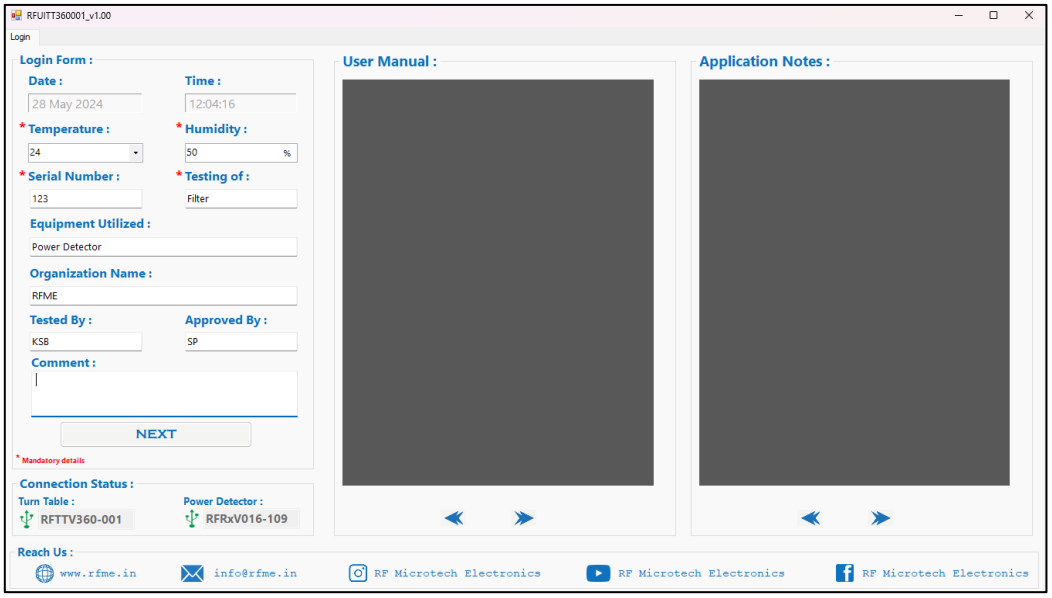


Diagram 2.2

After completing all mandatory fields and selecting the appropriate device, the software defaults to displaying the window depicted in Diagram 2.2.

Now click on "**NEXT BUTTON"** to start RFUITT360001 GUI.

Operating Panel:

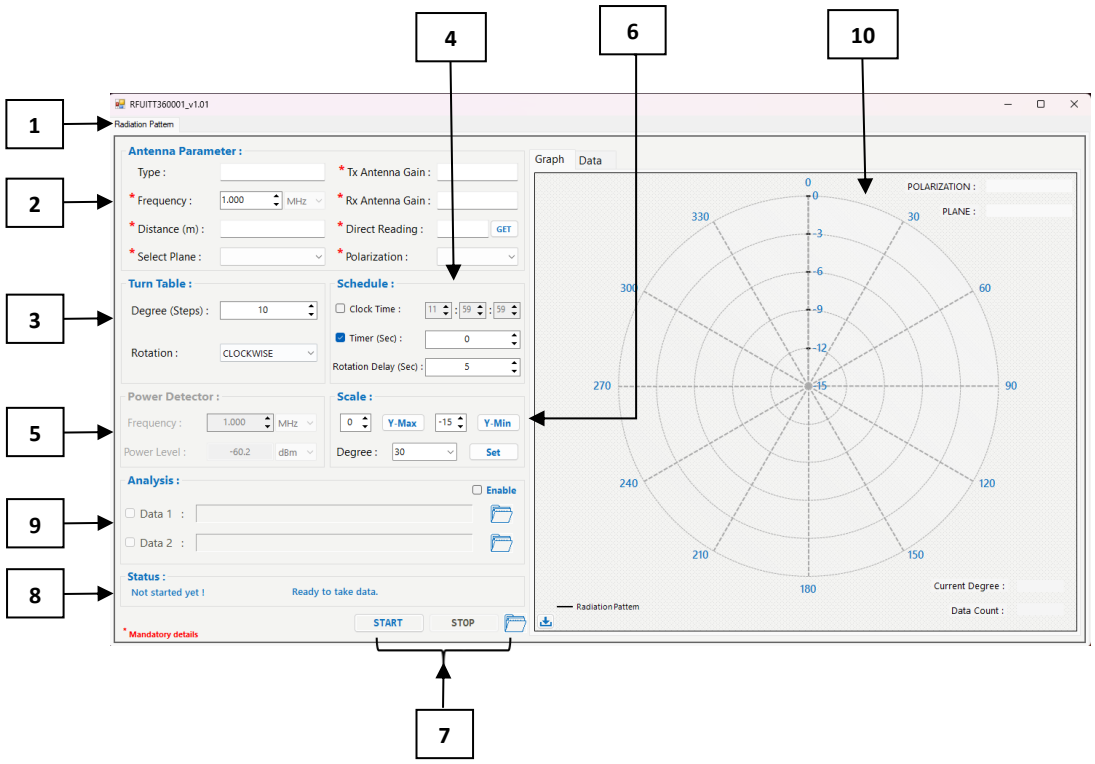


Diagram 3.1

1. Shows the Panel of Radiation Pattern.

Default window is shown in **Diagram 3.1**.

2. **<u>Antenna Parameter</u>:**

In this window add the parameter of Antenna as per **Diagram 3.2**.

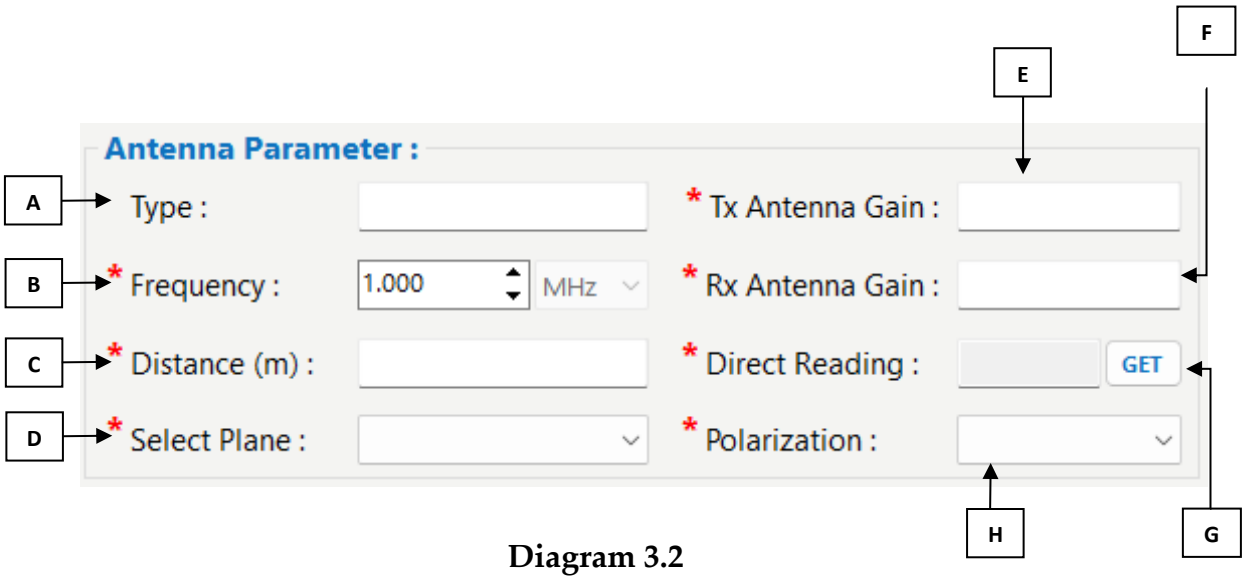


Diagram 3.2

A. Specify which type of Antenna is utilized.

B. Specify Frequency (1 MHz – 6 GHz).

C. Specify the distance between the two antennas (Tx and Rx).

D. Specify the plane, such as the X-Y Plane, Y-Z Plane, or Z-X Plane.

E. Specify the gain of the Tx antenna.

F. Specify the gain of the Rx Antenna.

G. Click the "Get" button to display the power level measured by the Power Detector.

H. Specify the Polarization (e.g., Horizontal or Vertical)

[Note: Fill necessary details and proceed further.]

3. **Turn Table:**

This window shows the Degree of Rotation and Rotation of Direction as per **Diagram 3.3**.

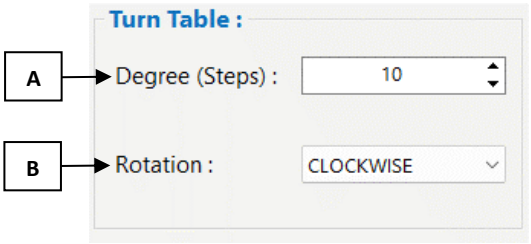


Diagram 3.3

A. Specify the degree to rotate the turntable (e.g., specify 20 to rotate the turntable by 20 degrees).

B. Specify the direction to rotate the turntable (e.g., clockwise or anti-clockwise).

4. **Schedule:**

This window shows the scheduled time for initiating data collection.

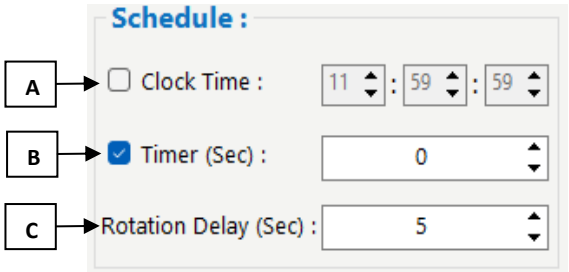


Diagram 3.8

A. Select the clock time to set when data collection should begin (e.g., set to 12:15:15, and data collection will start at this time).

B. Select the timer duration after which data collection should begin (e.g., set to 10 seconds, hold for 10 seconds, then start collecting data).

C. Set the delay timer duration up to 100 seconds (e.g., if set to 5 seconds, the system will hold for 5 seconds, then rotate 10 degrees as per the pre-set step, continuing this process up to 360 degrees).

5. **Power Detector:**

This window displays the frequency of the Power Detector and indicates the corresponding power level as per **Diagram 3.4**.

Diagram 3.4

6. **Scale:**

This window shows the scale and changes in the graph.

Diagram 3.8

A. Set the Y-axis maximum value (Range of Y – max: -100 to +100) and the Y-axis minimum value (Range of Y – min: -100 to +100) on the graph.

B. Change the graph degree to one of the specified values: 10°, 20°, 30°, 45°, 60°, or 90°.

7. Start & Stop:

Click Start button then it starts and collect data.

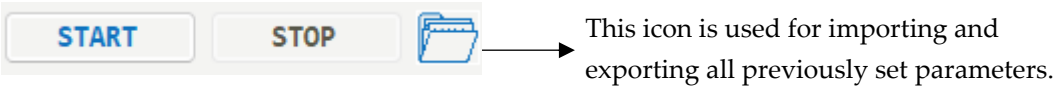


Diagram 3.7

8. Status:

This window shows the status data collected or not as per **Diagram 3.6**.

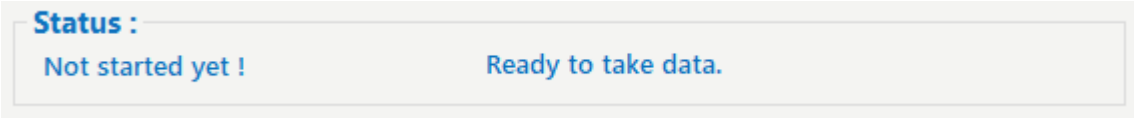


Diagram 3.6

9. Analysis:

This window will be displayed when analysing multiple data, as per **Diagram 3.7**.

Diagram 3.7

A. Need to select the Enable option before proceeding to upload files for analysis.

B. Choose Data 1 and upload the Excel file in RFME format. Once Data 1 is added, navigate to the Analysis tab to review the uploaded data.

C. Select Data 2 and upload the Excel file in RFME format. Once Data 2 is added, navigate to the Analysis tab to review the uploaded data.

10. Graph:

This window will be displayed when Graph & Data panel, as per **Diagram 3.8**.

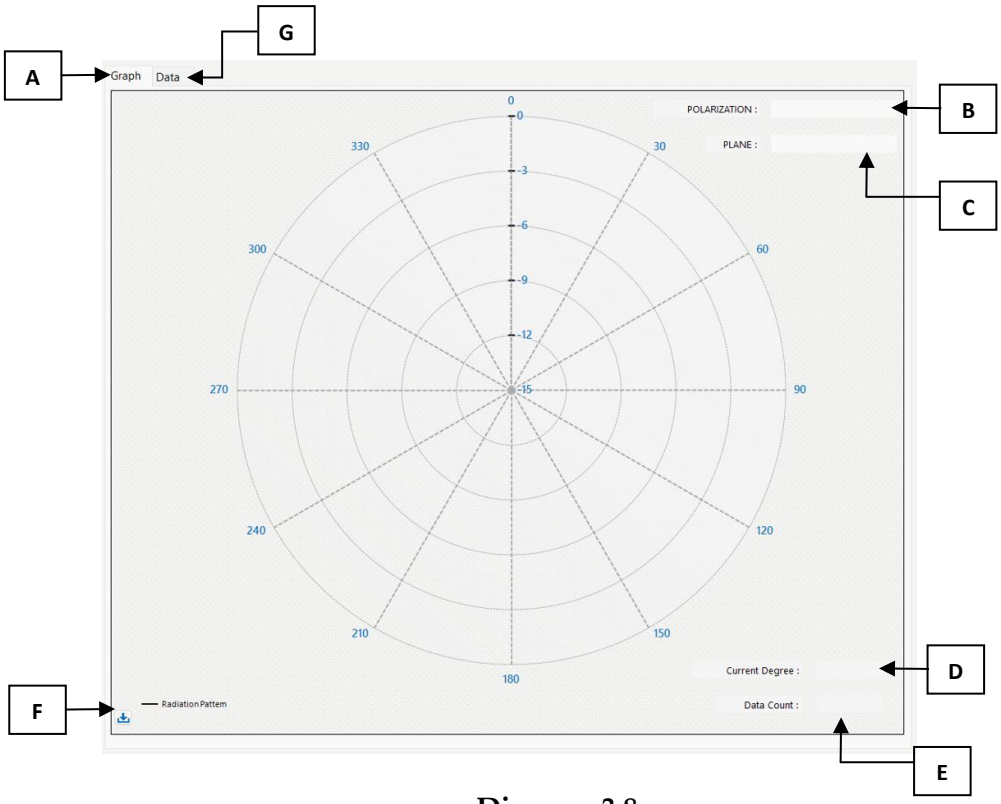


Diagram 3.8

A. Shows the panel of Graph.

B. Shows the Polarization which selected on Antenna Parameter.

C. Shows the Plane which selected on Antenna Parameter.

D. Shows the Current Degree of Turn Table when Turn table starts then it will show.

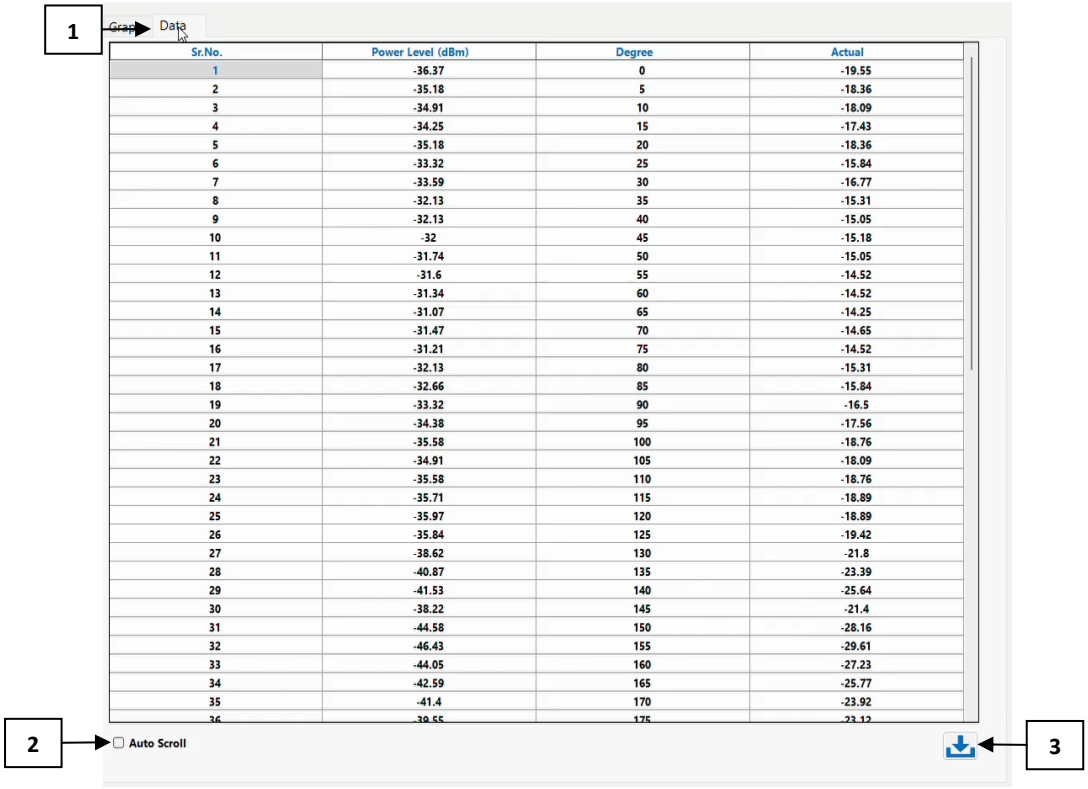
E. Shows the Data count number.

F. Download the Image (.png) File of Graph.

G. Show the panel of Graph, **as per Diagram 3.9**

- Power Level (dBm): This value is detected by power detector.
- Degree: Show the Degree of Turn table which you Rotate. +(Ex. Set 5 Degree then it is collected at 5-degree rotation.)

- Actual: Shows the power level of which we collect from Antennas response this data developed radiation pattern Graph.



Sr.No.	Power Level (dBm)	Degree	Actual
1	-36.37	0	-19.55
2	-35.18	5	-18.36
3	-34.91	10	-18.09
4	-34.25	15	-17.43
5	-35.18	20	-18.36
6	-33.32	25	-15.84
7	-33.59	30	-16.77
8	-32.13	35	-15.31
9	-32.13	40	-15.05
10	-32	45	-15.18
11	-31.74	50	-15.05
12	-31.6	55	-14.52
13	-31.34	60	-14.52
14	-31.07	65	-14.25
15	-31.47	70	-14.65
16	-31.21	75	-14.52
17	-32.13	80	-15.31
18	-32.66	85	-15.84
19	-33.32	90	-16.5
20	-34.38	95	-17.56
21	-35.58	100	-18.76
22	-34.91	105	-18.09
23	-35.58	110	-18.76
24	-35.71	115	-18.89
25	-35.97	120	-18.89
26	-35.84	125	-19.42
27	-38.62	130	-21.8
28	-40.87	135	-23.39
29	-41.53	140	-25.64
30	-38.22	145	-21.4
31	-44.58	150	-28.16
32	-46.43	155	-29.61
33	-44.05	160	-27.23
34	-42.59	165	-25.77
35	-41.4	170	-23.92
36	-39.55	175	-23.12

Diagram 3.9

2. **Auto Scroll:** Select this box then auto scroll when data is collecting.

3. Download the above data in Excel file.

NOTES: