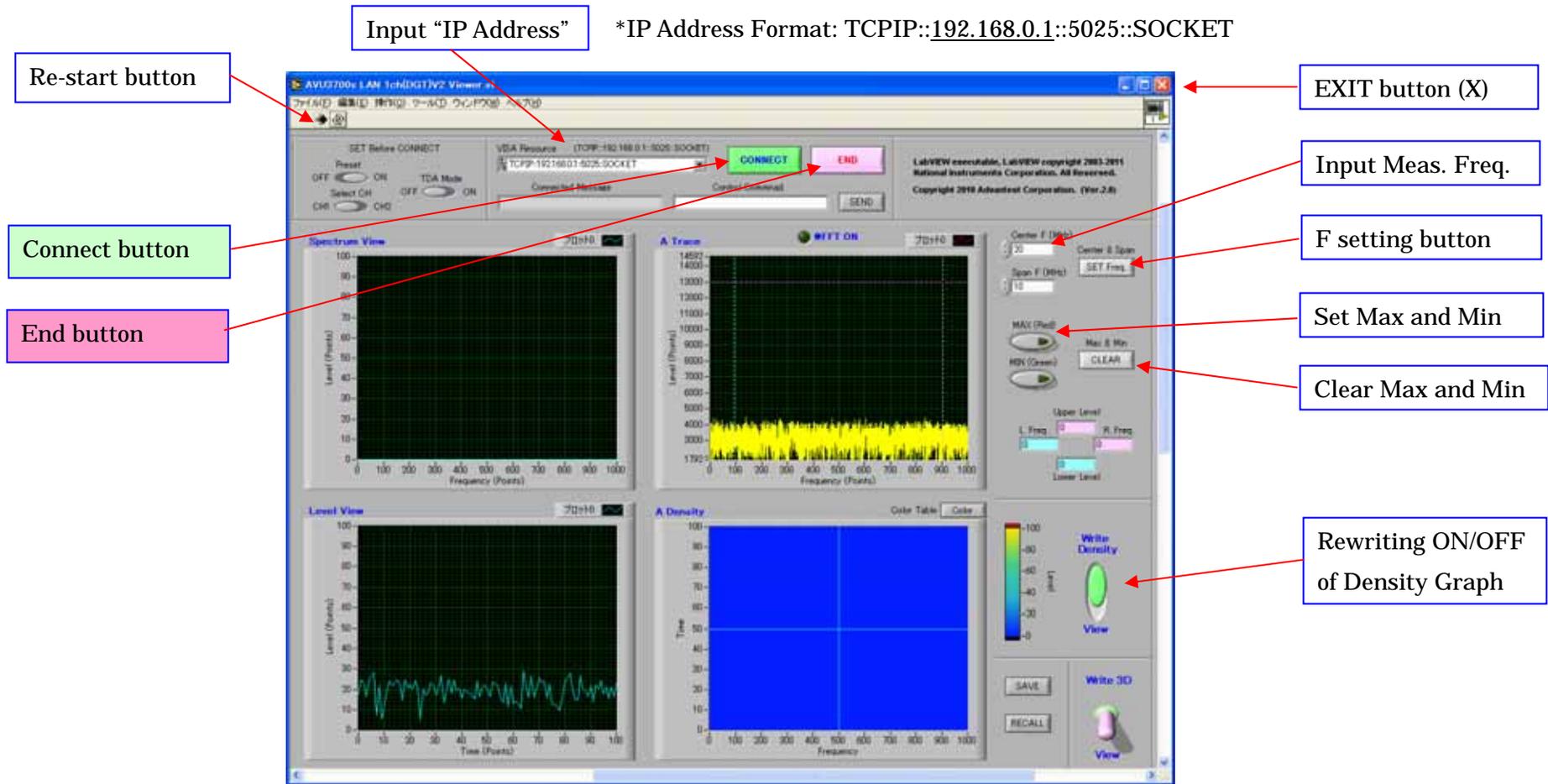


- 1 . The installation: Setup.exe in directory Installer is executed. (Operating conditions: Windows XP and Microsoft network, etc.)
- 2 . The Start: All Program → U3700 1ch(DGT) Graph Viewer → 1ch(DGT) Graph Viewer → execute.
- 3 . IP address of SA is confirmed, and it inputs it to the IP address column of the menu. And push the CONNECT button.
- 4 . The Stop and the Re-start: It stops with the END button. Re-start: push an upper right “=>” button and push the CONNECT button.
- 5 . It explains the operating button in the following drawing.

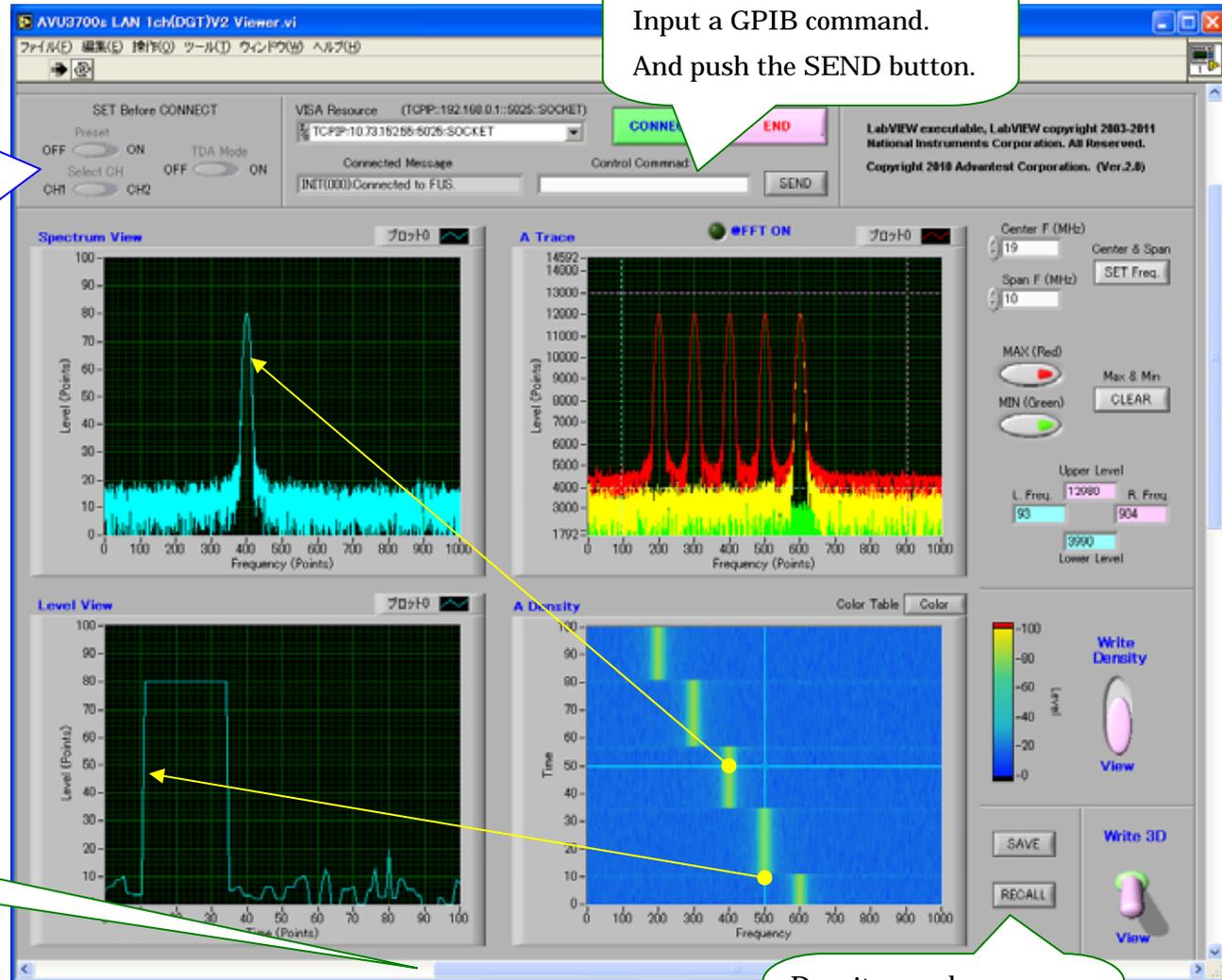


Set them before pushing the CONNECT button.
(*After connected, it is not possible to set it.)

Preset: SA is initialized.
FFT ON: Set FFT Mode
(OPT is necessary.)
Select CH: Select CH1 or 2
(@in 2ch SA)

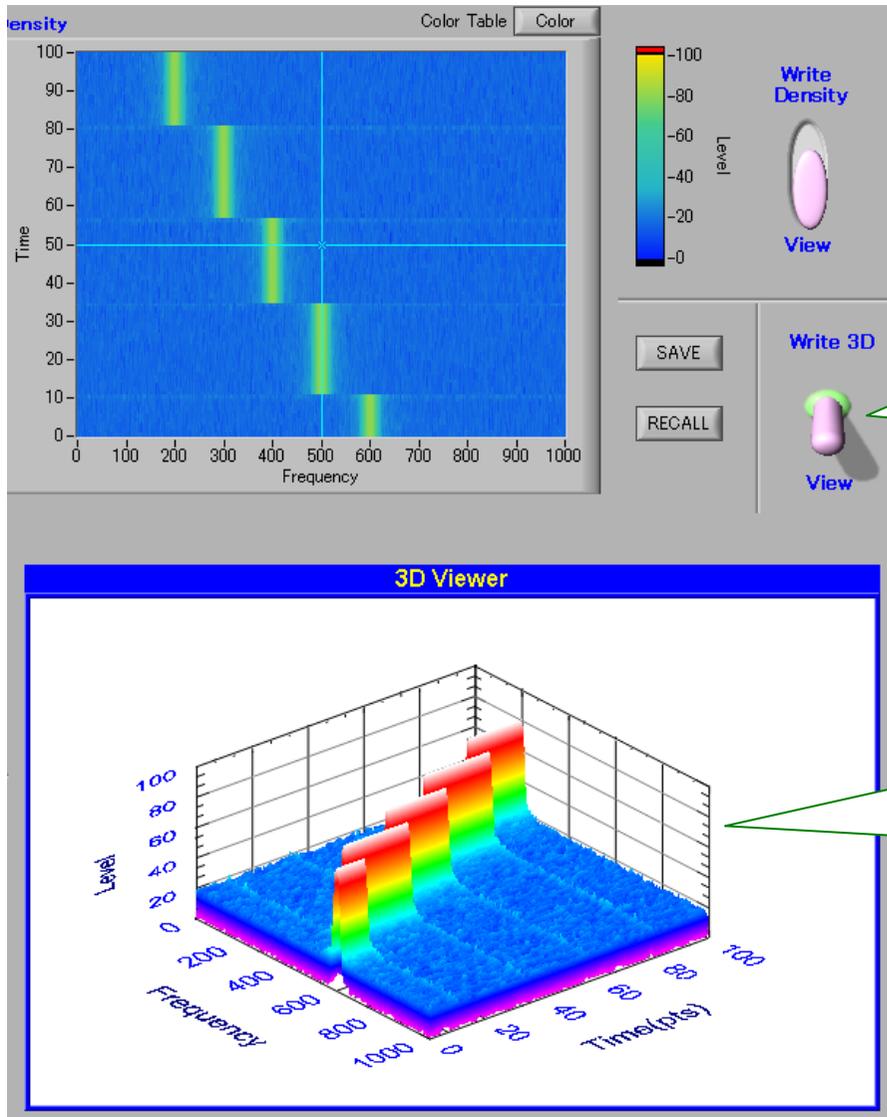
The display position is adjusted by the scroll.

SA direct control:
Input a GPIB command.
And push the SEND button.



Density graph:
It can save for data file.
The recall can be done

The screen is moved by the scroll bar like seeing the lower half.



Rewriting ON/OFF of 3D graph
Because it takes the operation time,
it usually turns it off.
Turning on when it is necessary.
To turning off when the drawing ends
Please set it.

Aspect movement and expansion
After it draws, rewriting is turned off.
Move the mouse, and in the left-click
The dice mark is moved.
The scaling is possible by a central
button.

The screen is moved by the scroll bar like seeing the left upper side.

The screenshot shows the AVU3700s LAN 1ch(DGT)V3 Viewer.vi software interface. The window title is "AVU3700s LAN 1ch(DGT)V3 Viewer.vi". The menu bar includes "ファイル(F)", "ウインドウ(W)", and "ヘルプ(H)". The interface features several control panels and graphs:

- Control Panels:**
 - Trace F-T Freq (kHz): 0
 - Trace L-T Level: -50
 - Trace PH Phase: 0
 - Trigger Mode: FREE
 - Sweep Mode: Normal
- Graphs:**
 - Time Graph(F/Ph/L):** A line graph showing Freq/Lv/PH (Points) vs Time (Points). The y-axis ranges from 1792 to 14592, and the x-axis ranges from 0 to 1000. A green line shows a downward trend, and a yellow line is flat at approximately 8000.
 - Spectrum:** A graph showing Level (Points) vs Frequency (Points). The y-axis ranges from 0 to 100, and the x-axis ranges from 0 to 1000. A yellow line shows a peak around 500.
 - Level View:** A graph showing Level (Points) vs Time (Points). The y-axis ranges from 0 to 100, and the x-axis ranges from 0 to 100. A yellow line shows a peak around 50.
 - A Density:** A heatmap showing Time vs Frequency. The y-axis ranges from 0 to 100, and the x-axis ranges from 0 to 1000. A vertical yellow band is visible around 500.

Callout 1 (Top Center):

Trigger Mode

- FREE: Free Run
- VIDEO: Video Signal (Screen)
- Trg_EXT: External Signal
- Trg_IF: Synchronous by IF-Signal (Need a Burst Signal)

Sweep Mode

- Normal: Asynchronous Sweep (Always getting)
- TS: Synchronous Sweep (Getting a data by sweep end)

*Take Sweep

Callout 2 (Bottom Left):

Select the display at FFT Mode:

- F-T: Freq vs Time
- L-T: Level vs Time
- PH: Phase vs Time

The display data of sideward button are the cursor position data.

The screen is moved by the scroll bar like seeing the left lower side.

The screenshot shows the AVU3700s LAN 1ch(DGT)V3 Viewer.vi software interface. It features several data visualization panels and control sections:

- I-Q Data:** A graph showing two sinusoidal waveforms (red and yellow) plotted against Amplitude (y-axis, -0.008 to 0.008) and Points (x-axis, 0 to 4000).
- Eye Diagram:** A graph showing multiple overlapping waveforms plotted against Amplitude (y-axis, -0.01 to 0.01) and Time (x-axis, 0 to 900u).
- Constellation Graph:** A graph showing a circular constellation of points plotted against I and Q axes (both y-axis, -0.01 to 0.01).
- A Density:** A heatmap-style graph showing data density over Time (y-axis, 0 to 100).
- Control Panels:**
 - Top Center:** Includes a "Capture BW" dropdown set to "1 MHz" and a "SET CBW" button.
 - Right Side:** Includes a "Sampling Clock (Hz)" field with value "3.93939375E+6", "Sampling Points" (3940), "Delta Time (us)" (0.253846166), "Re-Sampling Points" (1000), "Symbol Time (us)" (10), "Symbol Offset (us)" (0), "Symbol per points" (10), and "Offset per points" (0).
 - Bottom Center:** Includes a "Re-Sampling (Hz)" field with value "1E+6" and a "Start-Offset (us)" field with value "0".
 - Bottom Left:** Includes an "Eye_Length" slider set to "10" and a "SAVE-CSV" button.

Annotations in the image include:

- A speech bubble pointing to the I-Q Data graph: "Select get I/Q data from SA: Display Graphs are: I/Q Data: Eye Diagram: Constellation:"
- A speech bubble pointing to the Capture BW control: "Setup the capture BW: Select BW and push the SET CBW"
- A speech bubble pointing to the Constellation Graph: "Setup the symbol point position in Constellation Graph. Sample per Symbol: Offset: *Data is point data."
- A speech bubble pointing to the SAVE-CSV button: "It can save for CSV file."

Explanation of demonstration procedure and graph

- 1 . Internet Protocol address of SA is input. (Default is 192.168.0.1 that local connects SA. The cross cable is necessary.)
- 2 . CONNECT is pushed. The response from SA is displayed in the Connected Message frame at once.
- 3 . The initialization of SA is executed and a wave display will begin in 2-3 seconds.

(If not displayed, it ends once with X button and re-start this program ant the connection.)

- A Trace: The waveform data of trace A of SA is displayed.
Max and Min of waveform data can be displayed. (Operate it though it is not displayed.)
The clearness of Max and Min operation data pushes a clear button when it is necessary.
Moreover, four cursors have been put out with the sample. It is possible to move respectively with the mouse, and it is X at that time, and data of Y axis. However, it is displayed.
(The display is a number of points because of the sample.)
- Time Graph: The Time Domain Analysis data is displayed at the FFT mode.
F-T, PH-T, and L-T are displayed by condition of button. (it's individual or simultaneously)
Moreover, the cursor location data is displayed in the vicinity of each button.
(In L-T, (using Ref, dB/div) F-T, and PH-T are the cursor location data from Graph Center Position.)
- Density: The spectrum is seen, and the signal intensity is seen on and a time change is seen with Y axis in the color.
In this graph, there are X cursor and Y cursor, and the data of the part there is displayed in another graph.
Y cursor is Spectrum View, and the spectrum at a certain time can be observed.
X cursor can observe the level change in a certain frequency with the time base in Time View.
Each cursor can be moved with the mouse. Moreover, slowly when you turn off rewriting when it is necessary
It is possible to observe it. As for the data of this graph, "Save and the Recall" can be done.
- 3D Graph: Waveform data can be observed by three dimensions. Because it somewhat takes time for the operation,
rewriting the shape of waves that wants to be observed.
Please turn off rewriting when ending. Moreover, the aspect angle and the size are re-write because of the mouse.

IQ Data CSV File Format

ADVANTEST-SPA: IQ-Data

```

Center Frequency          20.001
Capture BW                4
ORG-Sampling Clock       3939393.75
ORG-Sampling Points      3940
Re-Sampling Clock        1000000
Re-Sampling Points       1000
Re-Start-Ofs             0
IQ-Scale                  2.904123068
Original_IQ
  
```

```

0.001448    -0.007574
0.001411    -0.007585
0.001357    -0.0076
0.001309    -0.007614
0.001281    -0.007622
0.001277    -0.007623
0.001293    -0.007617
0.001327    -0.007608
  
```

Re-Sampling_IQ

```

0.001448    -0.007574
0.001281    -0.007622
0.001367    -0.007599
0.001413    -0.00759
0.001328    -0.007615
0.001206    -0.007614
0.001042    -0.007667
0.000993    -0.007666
0.001001    -0.007648
  
```

(MHz)	0	40MHz
(Code)	1	30MHz
(Hz)	2	10MHz
(Points)	3	3MHz
(Hz)	4	1MHz
(Points)	5	300kHz
(us)	6	100kHz
(V)	7	30kHz
	8	10kHz
Original IQ	9	3kHz
	10	1kHz
	11	300Hz
	12	100Hz

Original IQ
↓
(N Points)

Re-Sampling IQ Data
↓
(N Points)