Instructions of NJR4234 Evaluation Kit
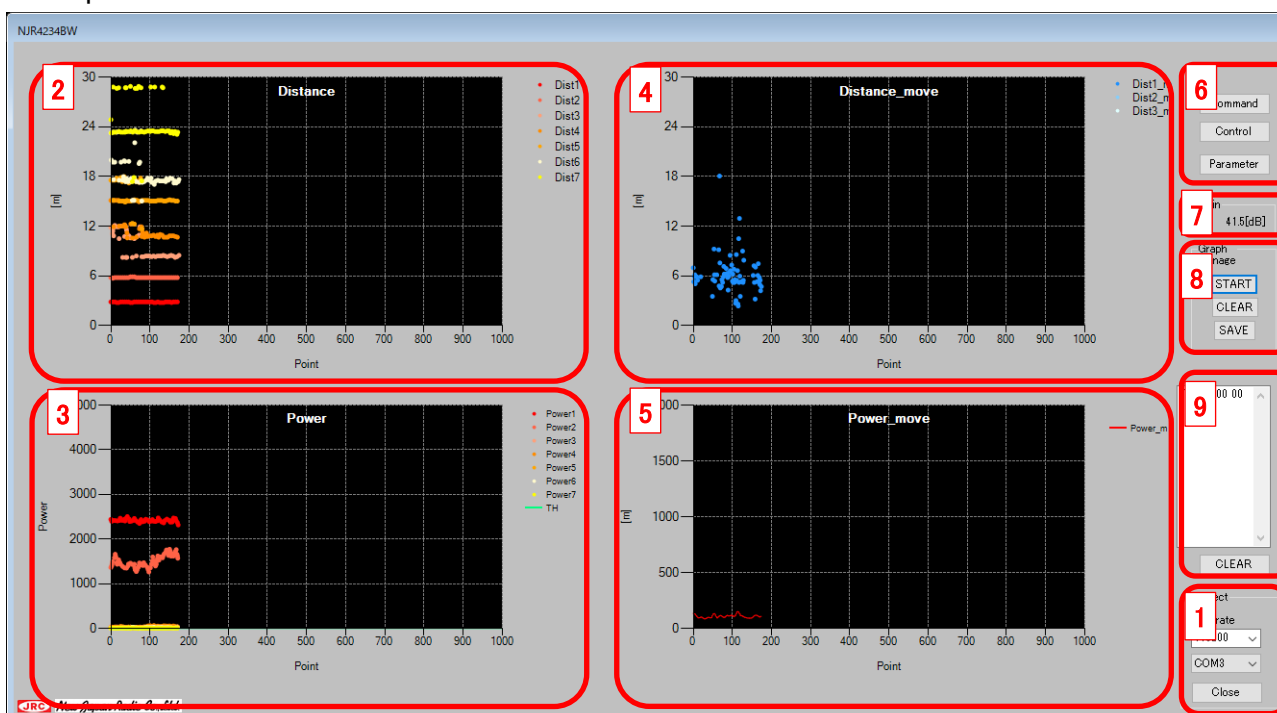
- Evaluation Kit

- Module (NJR4234VB)
- Evaluation Board (USB-to-UART Converter)
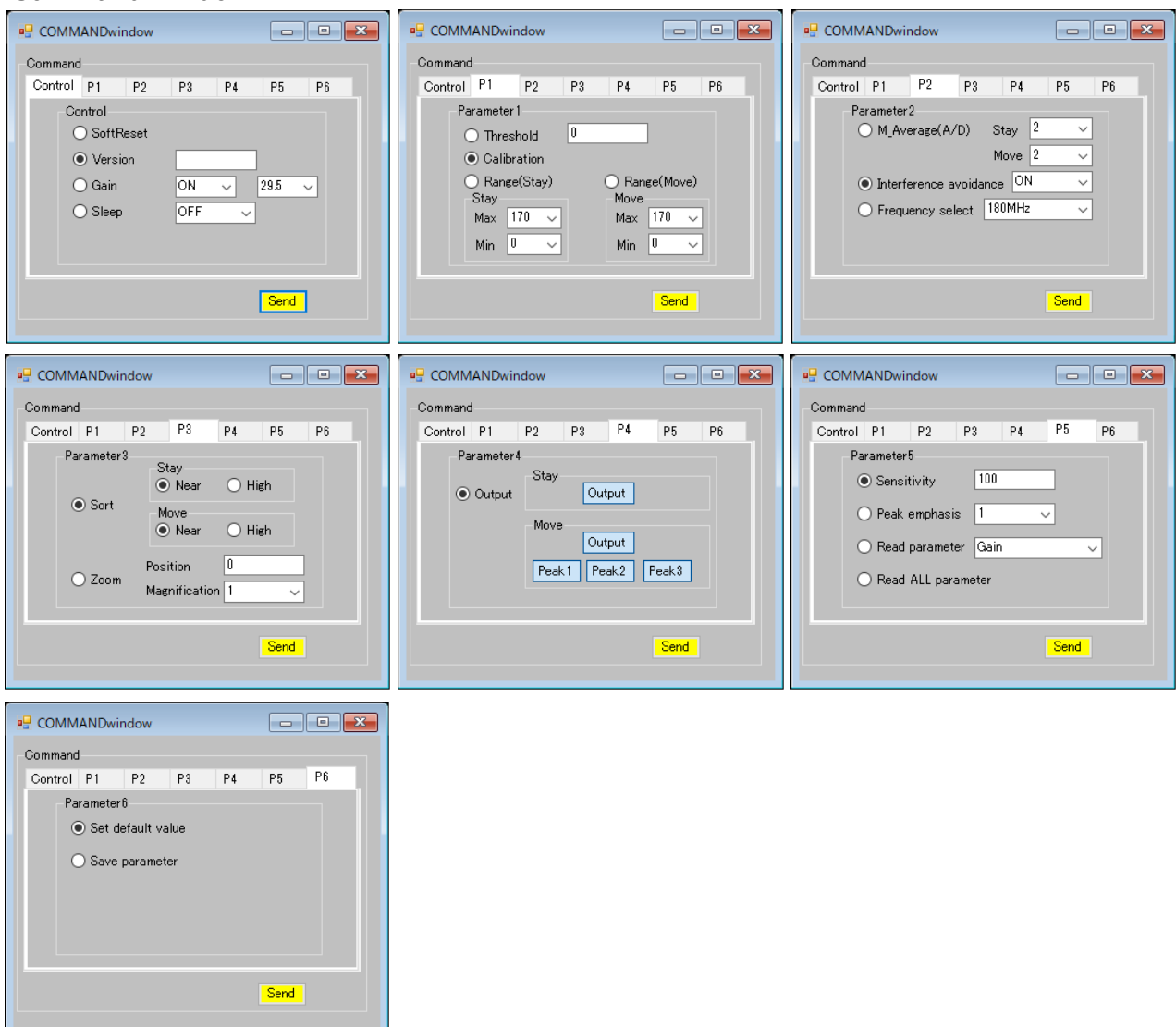- GUI Software

- Preparation
  1. Install ".NET Framework (ver 4.5 or latest version)" and CP210x Windows Drivers enclosed.
  2. Connect the evaluation kit of NJR4234 to PC with USB cable.
  3. Start GUI software of "NJR4234BWf1-EP001-0.0.5.exe".

- Explanation of GUI software

1. Connection
   Select COM port and click Open button (Open button turns to Close button, and WINDOWS CLOSE button hides).

2. Distance graph(Stay)
   Vertical: Distance of peak power on stay objects in meter.
   Horizontal: Point of measurement, one point is around 80 msec.

3. Power graph(Stay)
   Vertical: Power of peak on stay objects.
   Horizontal: Point of measurement, one point is around 80 msec.

4. Distance graph(Move)
   Vertical: Distance of peak power on moving objects in meter.
   Horizontal: Point of measurement, one point is around 80 msec.

5. Power graph(Move)
   Vertical: Power of A/D signal.
   Horizontal: Point of measurement, one point is around 80 msec.

6. Command & Control & Parameter button
   ◆ When you press the command button, the command window appears.

● Command window

Command window is used to send commands for MCU.

How to use:
1. Select command's radio button (and select parameters).
   *When the text box is yellow, it is not yet set. It is set by pressing the enter key (the text box turns white).
2. Put "Send button".

- Control panel
  - SoftReset: Software reset command.
  - Version: Read software version.
  - Gain: ON->Auto Gain mode, OFF->Gain fixed right selectbox value(29.5 or 41.5dB)
  - Sleep: ON->Sleep mode, OFF->Sleep mode is ended.

- P1(Parameter1) panel
  - Threshold: Threshold of Stay power. The distance corresponding to the power below the threshold is not output (0xFFFF).
  - Calibration: Send calibration command (DC offset is canceled).
  - Range (Stay): Select target search range of Stay(170~0m).
  - Range (Move): Select target search range of Move(170~0m).
    *When using the zoom, it is necessary to make the setting value × magnification lower than the measurement maximum value.

- P2(Parameter2) panel
  - M_Average(A/D): Moving average number of A/D signal(Stay and Move).
    (0: Not used, 1: 2 times, 2: 4times)
  - Interference avoidance:
    ON->Processing cycle(50ms)+random time(0~10ms, 10ms/256 step)
    OFF-> Processing cycle fixed(50ms).
  - Frequency select: Select Frequency sweep width(JPN only).

- P3(Parameter3) panel
  - Sort: Select peak sorting(Stay and Move).
    Near-> In descending order of distance.
    High-> In descending order of power.
  - Zoom: Zoom in the area you want to see.
    Position-> Lower limit of range to see.
    Magnification-> Zoom magnification.

- P4(Parameter4) panel
  - Output: Select results to output.
    Stay->Output: Select whether to output Stay frame.
    Move->Output: Select whether to output Move frame.
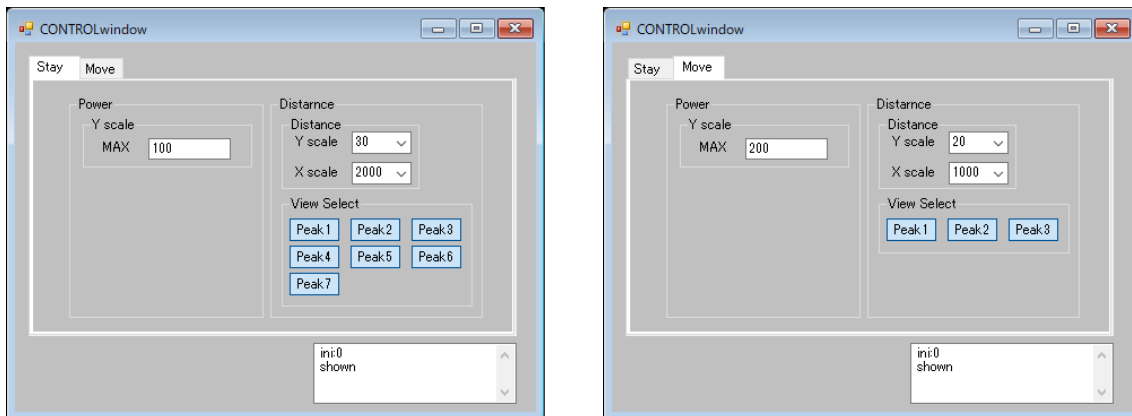   Move->Peak1~Peak3: Select whether to output Peak1~Peak3(If not output, 0xFFFF is placed instead).

- P5(Parameter5) panel
  - Sensitivity: If input signal power(Same as the '7->Power') under this value, processing is not done. This command is used only for 'Move'.
  - Peak emphasis: Largest peak is emphasized. This number is ratio of largest peak and other peaks. Peaks that under ratio are ignored. This command is used only for 'Move'.
  - Read parameter: Read out the parameters of the selected command. The read results are reflected in the Control window.
  - Read ALL parameter: Read parameters of all commands. The read results are reflected in the Parameter window.

- P6(Parameter6) panel
  - Set default value: Parameters that can be set with all commands return to the factory setting. However, the parameters are not saved.
  - Save parameter: The currently set parameters are saved. The saved parameters are automatically read and set at next startup.

  - ◆ When you press the Control button, the Control window appears.

- Control window
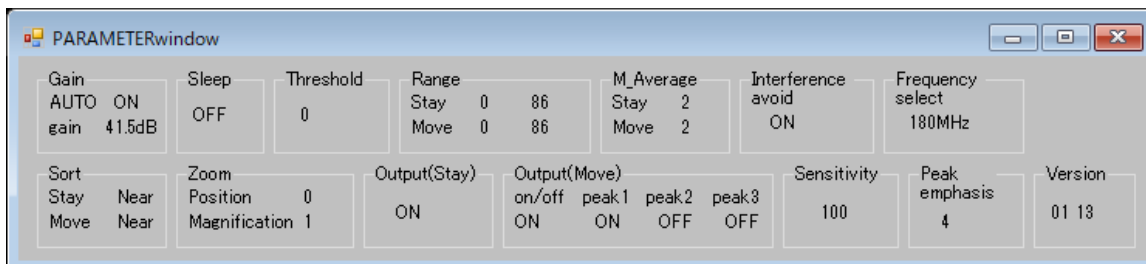

- Stay panel
  Control Stay graph.

  - Power->Y scale->MAX: Graph scale of Power graph(Stay).
  - Distance:
       Distance-> Y scale/ X scale: Graph scale of Distance graph(Stay).
       View Select-> Select peaks to draw on the graph.

- Move panel
  Control Move graph.

  - Power->Y scale->MAX: Graph scale of Power graph(Move).
  - Distance:
       Distance-> Y scale/ X scale: Graph scale of Distance graph(Move).
       View Select-> Select peaks to draw on the graph.

  - ◆ When you press the Parameter button, the Parameter window appears.

- Parameter window

It is the value of the parameter currently set. These values are updated when you send 'Read Parameter' and 'Read ALL parameter' commands.

7. Gain

The present value of Gain (Can be changed with command).

8. Graph manage
   - ➢ STOP: Pause the graph. Press it again to resume.
   - ➢ CLEAR: Clear the graph.
   - ➢ SAVE: Start storing the power and distance of Stay and Move. Press it again to finish saving.

9. TEXT BOX and CLEAR button
   - ➢ To check command (Tx and Rx). Put CLEAR button to clear TEXT BOX.

- ● Other
   - ➢ Setting(Control window) is recorded in a 'NJR4234.ini' file. The setting is reflected when the control button is pressed.