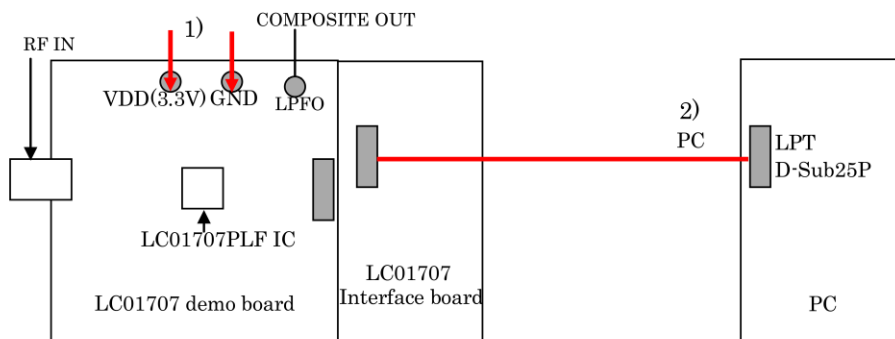


## Test Procedure for the LC01707PLFGEVB Evaluation Board

### LC01707PLF controller manual:

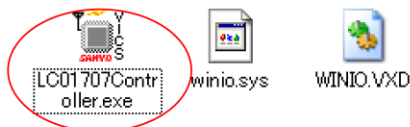
#### 1. How to connection

- 1) Power Supply voltage of 3.3V
- 2) Connected to an exclusive cable between parallel port and interface boards

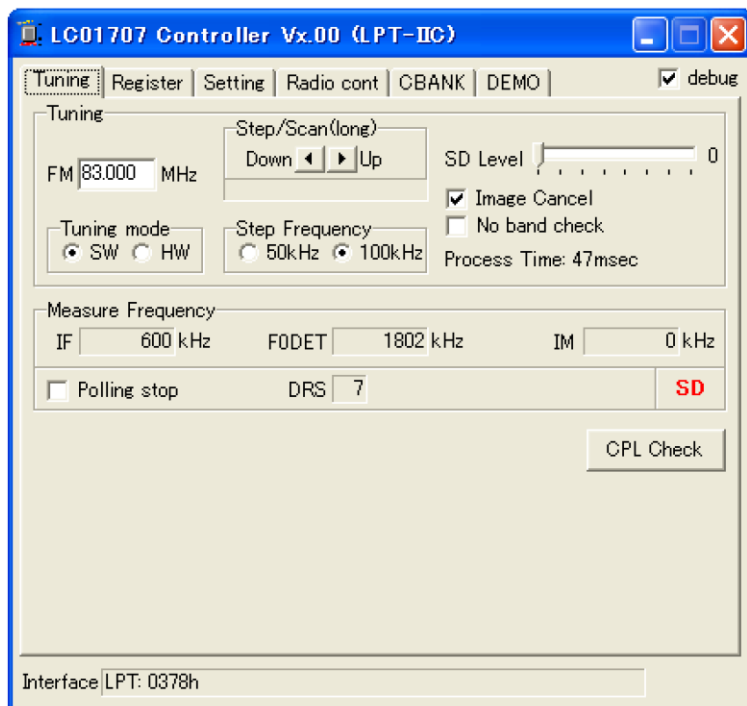


#### 2. How to start of controller

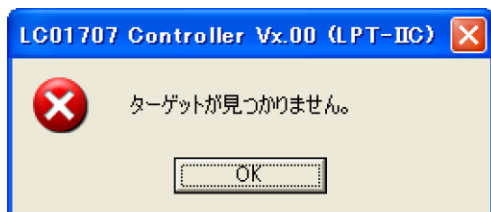
- Defrost an LC01707ControllerVxXX.zip file



- Double-click LC01707Controller.exe file  
When normalcy works, a [Tuning] screen opens.



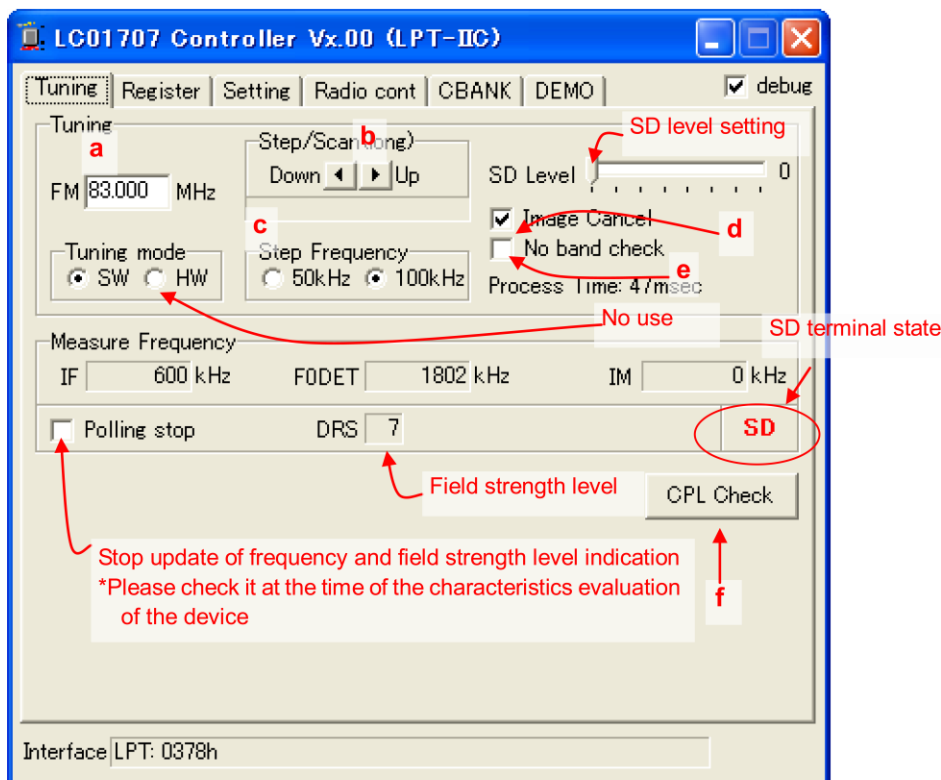
When the next message is given, please reconfirm connection and power supply.



### 3. Description of all parts

- [Tuning] tab

Frequency setting and confirmation are possible.



#### a. Tuning

It input frequency and am tuned up with the enter key

#### b. Step/Scan

Short push : 1step tuning Long push : scan tuning

#### c. Step Frequency

Choose step frequency

\*The step frequency of the Reg.02h(DFSEL) setting is 50kHz fixation

#### d. Image detection change ON-OFF check box

No check . . . Automatically image detection OFF

Check . . . Automatically image detection ON

#### e. Reception band limitation ON-OFF check box

No check (Normal) . . . Reception Band is 76MHz – 90MHz

Check (For Debugging) . . . The reception frequency range becomes same as VCO movement range

#### f. CPL Check button

You can confirm a CP terminal voltage form IIC by clicking it

- [Register] tab

Direct read/write can do a register value

The screenshot shows the 'Register' tab of the 'LC01707 Controller Vx.00 (LPT-IIC)' software. The interface includes a 'Register Value' table, a 'Read/Write' section, and an 'Interface' section. Red annotations provide instructions on how to use the software:

- Register Value Table:** A table with columns for address (00h to FFh) and data. Annotations indicate that values are entered by the enter key and that the 'Save' button is used to save the register value.
- Read/Write Section:** Includes a 'Read/Write' dropdown menu, a 'Refresh' button, and a 'Register Read/Write' section with 'Reg.' and 'Data' fields. Annotations state that it can operate a register value and that the 'Refresh' button updates the register value in the latest state (not automatically updated).
- Interface Section:** Shows 'Interface: LPT: 0378h' and an 'Init EM' button. An annotation indicates that it is read/write with a register value individually.
- Initialization:** A note mentions that the register value is initialized because the cap-bank of Local VCO is initialized, and users should choose the 'Tuning' tab after initialization once.

#### 4. How to end of controller

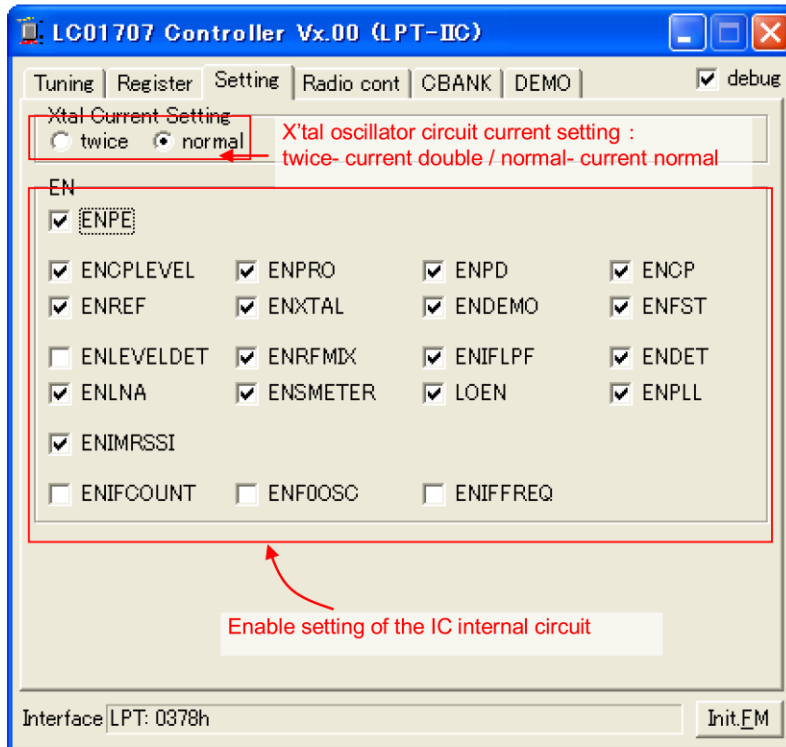
Please click button of the window top right corner

#### 5. How to un-installation

Please delete the folder which you made with section 2.

## 6. Description of other tabs

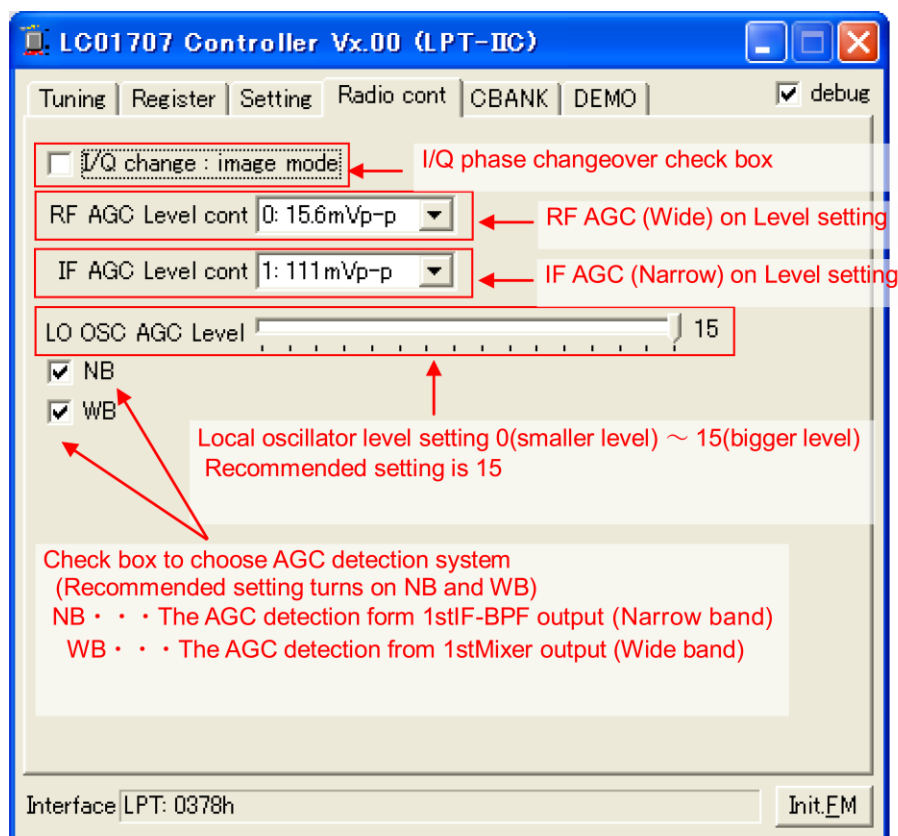
- [Setting] tab



### About IC internal circuit enable setting

- ENPE . . . Whole circuit enable
- ENCPLEVEL . . . Charge pump level comparator enable
- ENPRO . . . Program counter enable
- ENPD . . . Phase comparator enable
- ENCP . . . Charge pump enable
- ENREF . . . Signal meter enable
- ENXTAL . . . X'tal oscillator enable
- ENDEMO . . . Demodulator enable
- ENFST . . . BPF and IF-AGC block enable
- ENLEVELDET . . . No use (OFF)
- ENRFMIX . . . RF-Mixer enable
- ENIFLPF . . . IF-LPF enable
- ENDET . . . Wide-AGC and Narrow-AGC enable
- ENLNA . . . LNA block enable
- ENSMETER . . . Reference counter enable
- LOEN . . . Local oscillator enable
- ENPLL . . . PLL block enable
- ENIMRSSI . . . X'tal oscillator circuit current setting enable
- ENIFCOUNT . . . Analog block frequency counter enable (IF counter), only at the time of scan
- ENF0OSC . . . f0 detection oscillator circuit enable, only at the time of setup and initial tuning
- ENIFFREQ . . . Logic block reference clock enable

- [Radio cont] tab



I/Q phase changeover check box . . . No check : Upper reception,

Check : When an image frequency exists, it change to the Lower reception

Please refer to Page 7 for the detailed movement of I/Q phase changeover check box.

### • [CBANK] tab

Capacitor bank setting of the IC internal circuit

LC01707 Controller Vx.00 (LPT-IIC)

Tuning | Register | Setting | Radio cont | **CBANK** | DEMO | ☒ debug

10h,0Fh  
056 h LOCBANK → Capacitor bank value of the Local oscillator  
⇒ it is adjusted to the most suitable value at the time of tuning automatically

07h  
4C h IFCBANK → Capacitor bank value of the 1<sup>st</sup> IF-BPF central frequency adjustment

08h  
4C h IF2CBANK → Capacitor bank value of the 2<sup>nd</sup> IF-BPF central frequency adjustment

06h  
4C h DF0OSC → Dummy oscillator capacitor bank value of adjustment to 1<sup>st</sup> IF-BPF and 2<sup>nd</sup> IF-BPF

IFCBANK, IF2CBANK and DF0OSC is adjustment to the time of a setup and initial tuning automatically by the most suitable value

Interface LPT: 0378h Init\_EM

### • [DEMO] tab

LC01707 Controller Vx.00 (LPT-IIC)

Tuning | Register | Setting | Radio cont | CBANK | **DEMO** | ☒ debug

DEMO 1 → DLL demodulator loop gain setting  
0 (smaller gain) ~ 3 (bigger gain) (Recommended setting is 1)

MONOC 7 → Mono multi-center setting (Delay initial value of the DLL wave detector)  
0 ~ 15 (Recommended setting is 7)

Device address  
☒ 0xE0 ☐ 0xE2 → Device address setting (choice is possible)

Interface LPT: 0378h Init\_EM

## 7. About an image detection change

The function of the image detection Upper/Lower change ON/OFF check box of Screen 1 is as follows.

When you checked it . . .

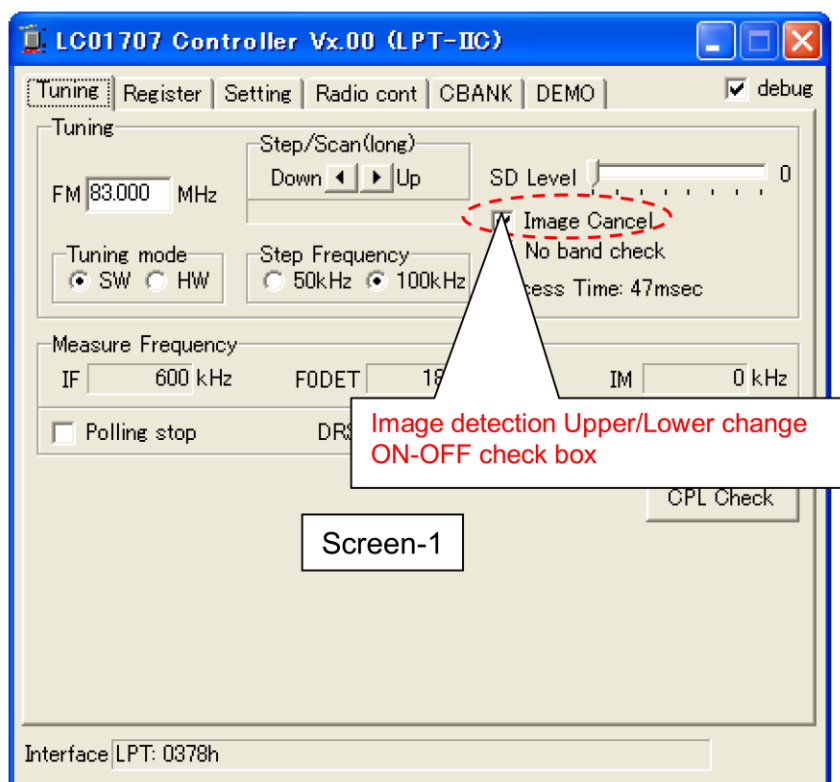
When an image detection function is ON, a Local oscillation changes to Upper or Lower automatically according to an image disturbance situation.

When there is no check . . .

An image detection function is turned off, and is not concerned with the existence of image disturbance, but usually becomes Upper reception.

When changing to Lower reception compulsorily, if the I/Q change check box of Screen 2 is turned on and it changes to the Tuning screen of Screen 1, it will not be concerned with the existence of image disturbance, but will become Lower reception.

If the I/Q change check box of Screen 2 is unchecked and it changes to the Tuning screen of Screen 1 also when changing from Lower reception to Upper reception, it will not be concerned with the existence of image disturbance, but will become Upper reception.





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