Dear customer

LAPIS Semiconductor Co., Ltd. ("LAPIS Semiconductor"), on the 1st day of October, 2020, implemented the incorporation-type company split (shinsetsu-bunkatsu) in which LAPIS established a new company, LAPIS Technology Co., Ltd. ("LAPIS Technology") and LAPIS Technology succeeded LAPIS Semiconductor's LSI business.
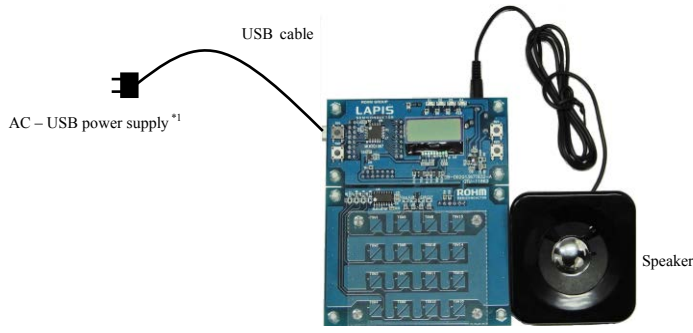
Therefore, all references to "LAPIS Semiconductor Co., Ltd.", "LAPIS Semiconductor" and/or "LAPIS" in this document shall be replaced with "LAPIS Technology Co., Ltd."

Furthermore, there are no changes to the documents relating to our products other than the company name, the company trademark, logo, etc.

Thank you for your understanding.

LAPIS Technology Co., Ltd.
October 1, 2020

memory at the time of shipment.

The following description applies to use in a stand-alone.

USB cable

AC – USB power supply *1

Speaker

ML62Q1367 Capacitive Switch Application Board

Figure 2   Use in a stand-alone configuration

- **AC – USB power supply are to be supplied by our customers.**
  If you connect the ML62Q1367 Capacitive Switch Application Board to your PC by the USB cable, power is supplied to it.

1.   Connection and launch of the DTMF Sample Program

1-1.   As shown in figure 1 and figure 2, connect the speaker and the USB cable to the ML62Q1367 Capacitive Switch Application Board.

1-2.   Connect the USB cable to power supply.
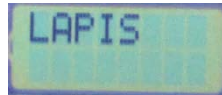The DTMF Sample Program will start, display "LAPIS" on the LCD and sound a beep.

Figure 3   Display of the LCD after starting

1-3.   Touch a capacitive switch key of the ML62Q1367 Capacitive Switch Application Board.
The DTMF Sample Program sounds a DTMF tone corresponding to a touched capacitive switch key and displays a character to on the LCD.
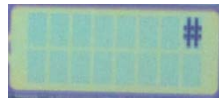

Figure 4   Display example of the LCD after touching capacitive switch key [TSW12]
of the ML62Q1367 Capacitive Switch Application Board.

2.   Shut down

2-1.   Disconnect the USB cable from power supply.

Figure 5   Use with

3.   Copy of ML62Q1000 Capacitive Switch Starter

3-1.   Insert the "ML62Q1000 Capacitive Switch Start

3-2.   Copy the "ML62Q1000_CAP_Switch_StarterKi

- **Please copy the "ML62Q1000_CAP_Switch**
  characters except space if you do not copy i

3-3.   Eject the DVD from the DVD drive of your PC.

4.   Installing of U8/U16 Development Tools

This section will take you through the process of
the Device Information Files and the EASE1000

- **Please use Release 2.2.0 or later as the versi**
- **Operating environment: Windows 7*, Wind**
- **Please log on as an administrator account.**
- **When U8/U16 Development Tools existing i**
  For uninstallation, refer to Step #15.

4-1.   Extract the archives of the U8DevTool_*Rx_xx_x*
Step #3.

*" *R*

4-2.   Double-click the U8DevInstaller.exe file in the "
When this file is executed, the InstallShield Wiza
Writer, the Device Information File and the EAS

- **Follow the instructions of the InstallShield**
- **Agree to "SOFTWARE LICENSE AGREE**
- **Do not change option settings.**
- **Select "Standard" as "Setup Type"**

When the InstallShield Wizard displays the "Inst
After that, installation has finished.

5.   Connecting

5-1.   As shown in figure 1 and figure 5, connect the M
Emulator (hereinafter "EASE1000").

5-2.   Connect the EASE1000 to PC using the USB cab

5-3.   Connect the speaker to the ML62Q1367 Capacit

5-4.   Connect the ML62Q1367 Capacitive Switch App

6.   Installing the DTMF Sample Program

6-1.   Extract the archives of the CAP_Switch_Sample
you copied in Step #3.ML62Q1000 Capacitive S
Generator Sample Program will be extracted into
"ML62Q1000_CAP_Switch_StarterKit\CAP_Sw

*" *Vxxx*" depends on the ve

• When you specify a folder other than the above as the folder specified in the [Workspace] field, specify a folder that complies with the "Restrictions on Input Value" described in the "LEXIDE-U16 User's Manual".

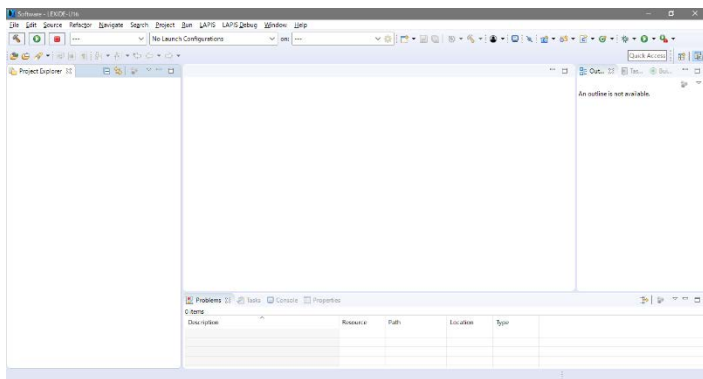A little while, the LEXIDE-U16 will launch.

Figure 7   The LEXIDE-U16 immediately after startup (screen when maximized).

8.   Importing the ML62Q1367 DTMF Tone Generator Sample Program project

This section will take you through the process of importing the DTMF Sample Program project to the LEXIDE-U16.

8-1.   Select the [File] menu > [Import…] menu command of the LEXIDE-U16.
The [Import] dialog box will be opened.

8-2.   Select [General] > [Existing Projects into Workspace] in the [Import] dialog box and click [Next].
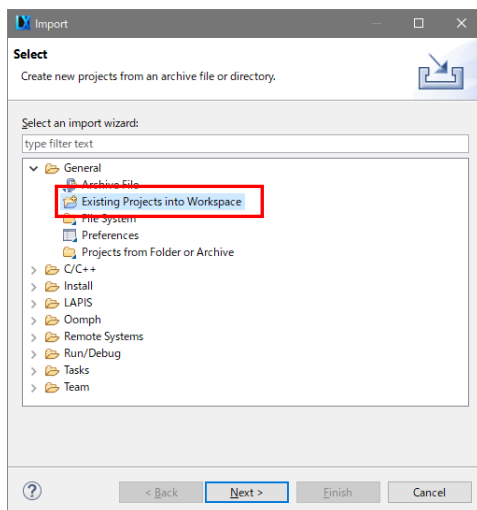

Figure 8   Select [General] > [Existing Projects into Workspace] in the [Import] dialog box.

The [Import] dialog box will be opened.

8-3.   Select
"ML62Q1000_CAP_Switch_StarterKit\CAP_Switch_SampleProgram_*Vxxx*\Software\01_Dtmf_*Vyyy*\Software_LEXIDE\DtmfS ample" folder in the [Select root directory] field of the [Import] dialog box.
The selected folder contains the DTMF Sample Program project file (".cproject", ".project").

*" *Vxxx*" depends on the version of the ML62Q1000 Capacitive Switch Starter Kit Sample Program Package.
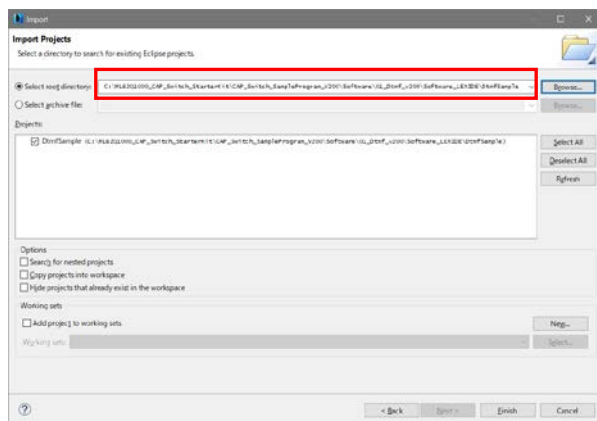*"*Vyyy*" depends on the version of the DTMF Sample Program.

Figure 9   Select "root directory" in the [Project path] of the [Import] dialog box.

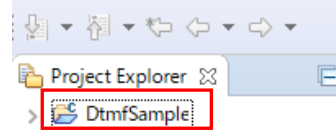The DTMF Sample Program project will be displayed in the [Import] dialog box (Fig 10).

Figure 11   The LEXIDE-U16 after lo

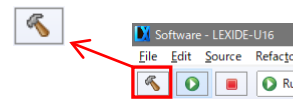## 9.   Building the ML62Q1367 DTMF Tone Generate

This section will take you through the process of

9-1.   Confirm that " DtmfSample debug" is displayed

Figure 12   The "L

9-2.   Click the [Build] button on the toolbar of the LE

You will be able to see the message "Build Finis

10.   Start debugging

Load the DTMF Sample Program into the ML62 start debugging.

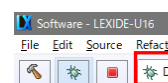10-1.   Select "Debug" in the [Launch Mode] field on th

Figure 13   Select "Deb

10-2.   Click the [Launch in 'Debug' mode] button on th

The LEXIDE-U16 will load the DTMF Sample break at the beginning of the main function.

[Supplementary explanation]
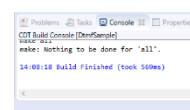During the above processing, the LEXIDE-U16

Figure 14   Displa

After that, LEXIDE-U16 will display the dialog shown in Fig. 15.
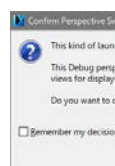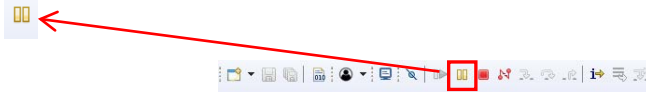
10-3.   Click the [Yes] button in the [Confirm Perspectiv

Figure 15   T

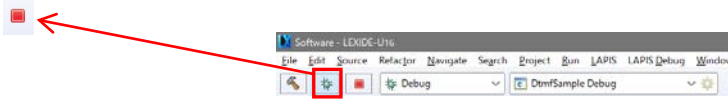**12. Stopping the ML62Q1367 DTMF Tone Generator Sample Program**

12-1.   Click the [Suspend] button on the toolbar of the LEXIDE-U16.

Execution of the DTMF Sample Program will stop.

13. Terminating Debug

13-1.   Click the [Stop] button on the toolbar of the LEXIDE-U16 to terminate debug.

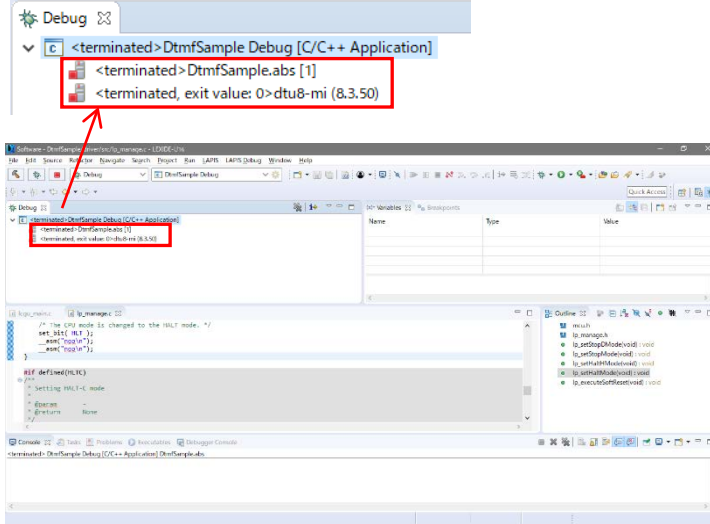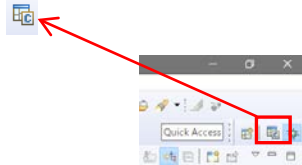<Terminated> will be displayed in the [Debug] tab of the LEXIDE-U16.

Figure 17   LEXIDE-U16 immediately after terminating Debug (screen when maximized)

[Supplementary explanation]

To return to the layout before debugging, click the [C/C++] perspective button on the right side of the toolbar

14. Shut down

<LEXIDE-U16 >

14-1.   Select the [File] menu > [Exit] menu command of the LEXIDE-U16
         The LEXIDE-U16will shut down.

<Hardware >

14-2.   Disconnect the USB cable which is connected to the ML62Q1367 Capacitive Switch Application Board from your PC.

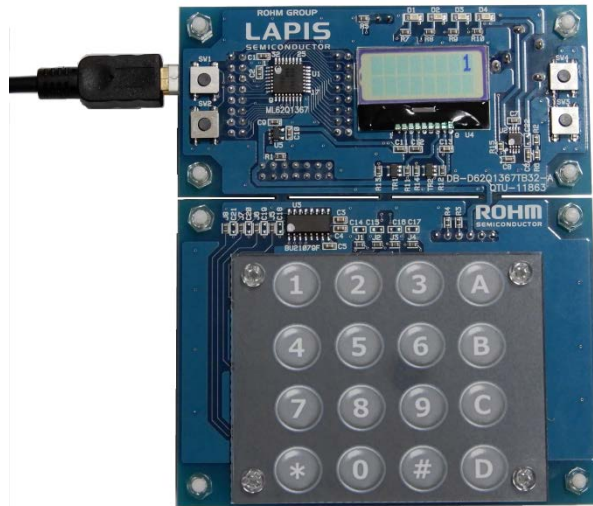14-3.   Disconnect the USB cable which is connected to the EASE1000 from your PC.

Appendices Figure 1
The ML62Q1367 Capacitive Switch Application Board
which is inserted the DTMF Sample Program key's sheet.

Appendices Figure 2. DTMF Sample Program key's sheet
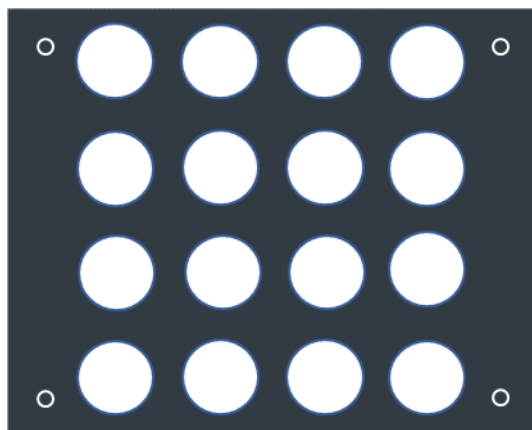
Appendices Figure 3. Blank sheet

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