

# Kurzweil KORE 64

*ROM Expansion Board for the PC3 and PC3K*

*Installation Instructions*

*August 1, 2012*

# **KURZWEIL®**

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**Part Number: 910540-001 Rev.B**

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## **Introduction**

Thank you for purchasing the KORE 64™ ROM Expansion Kit. This guide explains how to install the hardware (one small circuit board) and software (operating system and Kurzweil soundware objects) that constitute the expansion kit.

### **PC3 or PC3K?**

The PC3 and PC3K are very similar instruments; the primary difference is that the PC3K enables you to import samples from .AIFF and .WAV files (as well as certain Kurzweil files), and the PC3 does not. The circuit board included in this expansion kit works for both models. Depending on your model, you may have to make one small modification to the board. The only other difference in the hardware installation is the location of the expansion board on the main circuit board of your instrument.

Please read all of the introductory information in this document (through *Preparing for Hardware Installation* on page 4) before proceeding with the installation.

When you've finished the introductory material, turn to the section appropriate for your model: *Hardware Installation: PC3* on page 7, or *Hardware Installation: PC3K* on page 8.

## **Contents of the Kit**

In addition to this installation guide, your KORE 64 Expansion Kit should contain the following items:

- Expansion board (dual inline memory module, or DIMM)
- deoxIT ® swab for cleaning the contacts of the circuit board

## **Safety Precautions**

To prevent risk of electrocution, make sure that your instrument is disconnected from its power supply before you begin disassembly.

Static electricity, even in small amounts, can cause damage to electronic components (especially memory). Before disassembling your instrument, touch a conductive metal surface to discharge any static electricity that you may have built up.

### **Save Your Data!**

After upgrading your instrument's software, you'll need to perform a hard reset. This deletes all your user-defined objects (programs, setups, effects), and completely reinitializes the instrument. Be sure to back up your instrument's memory before you begin the installation. PC3 owners need an xD memory card, and PC3K owners need a USB thumb drive.

### Tools and Materials Required

#### Software Upgrade

**IMPORTANT:** before you can install the hardware components of your expansion kit, you must upgrade your instrument's operating system software, and its soundware objects (program and setup information). See *Upgrading Your Software* below for upgrade instructions.

#### Hardware Installation

- #2 (small) cross-recess (Phillips head) screwdriver
- Two thick foam pads (to protect your instrument)

You'll need a flat work area large enough to accommodate the disassembled instrument. Most tabletops will work. Please be sure to use a surface wide enough to support your instrument from the ends. The foam pads will prevent damage to the keys and the components on the front panel.

### Upgrading Your Software

Before installing any hardware, you must upgrade your instrument's software and test it to make sure it's working correctly. The software upgrades are available at the following location on the Kurzweil website:

<http://kurzweil.com/downloads>

Click on the link that corresponds to your instrument. Scroll up or down until you find the link for the latest software version. Click on the link to download your new software.

Each link downloads a compressed file that expands to a set of files including the software upgrade files, and instructions for installing the upgrades. The compressed file may expand automatically when you download it. If it doesn't, you can use an application like ZipIt or WinZip to expand the file.

When you've completed the software upgrade, proceed to the hardware installation, starting with the preparations in the following section.

### Preparing for Hardware Installation

The first few steps of the hardware installation are identical for the PC3 and PC3K—disassembling the instrument and preparing the circuit board that you're going to install. This section shows you how to do this for both the PC3 and the PC3K. When you've finished, go to the appropriate section for your model.

#### Removing the Access Panel

1. Make sure your instrument is disconnected from its power supply, and that you've disconnected all other cables from the rear panel. Also be sure to discharge any residual static electricity by touching a conductive metal object (like the keyboard casing).

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## Preparing For Hardware Installation

2. Position the foam pads on your work surface so that they'll support the ends of the keyboard.
3. Place your instrument *face-down* on the foam pads, with the keyboard facing away from you, and the back of the instrument closer to you. Make sure that it's not resting on the Alpha Wheel or sliders.
4. Using a #2 (small) Phillips screwdriver, remove the seven screws that secure the access panel, as shown in Figure 1.

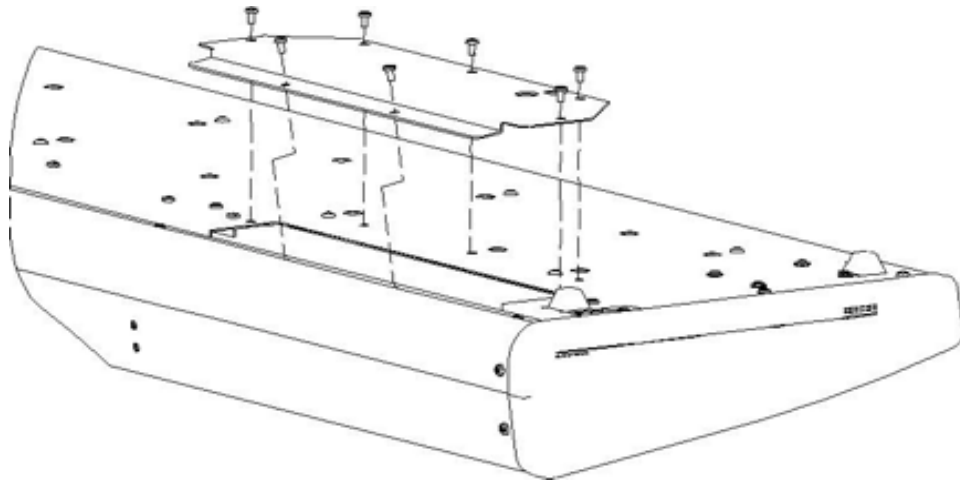


Figure 1: Removing the access panel

### Configuring the Circuit Board

The circuit board for the Expansion Kit works for both the PC3 and the PC3K. A three-pin header at the upper left corner of the board makes this possible. A jumper (a small plastic connector) connects two of the three pins, and configures the board for either the PC3 or the PC3K. Figure 2 shows the jumper connecting pins 1 and 2 (the two left-hand pins). This is the correct configuration for the PC3K.

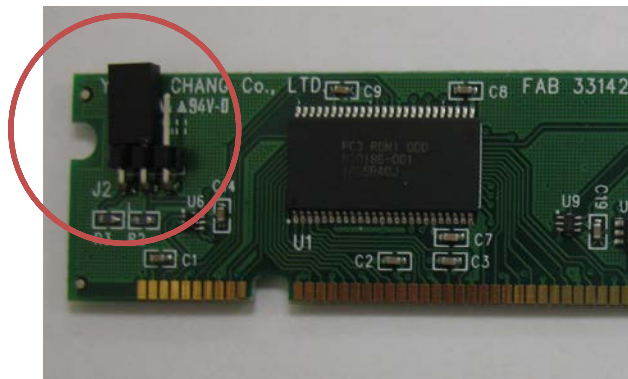
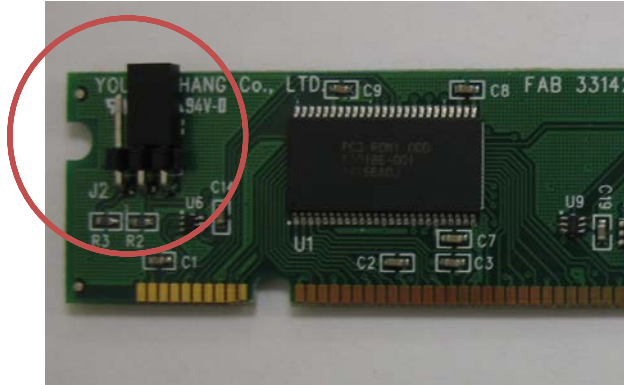


Figure 2: Jumper position for PC3K

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## Preparing For Hardware Installation

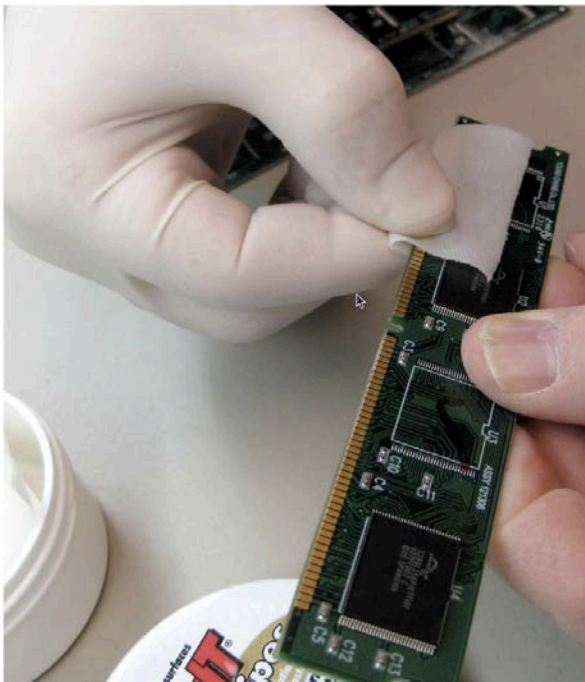
If you're installing the Expansion Kit into a PC3K, you can proceed to the next section, *Deoxidizing the Contacts*. If you're installing into a PC3, you'll need to move the jumper so that it connects pins 2 and 3 (the two right-hand pins).



**Figure 3: Jumper position for PC3**

1. Grasp the jumper firmly, and slide it off the pins. Be careful not to bend the pins.
2. Slide the jumper onto the two right-hand pins, and push it firmly into place.

### Deoxidizing the Contacts



**Figure 4: Deoxidizing the board**

During shipping and storage, the gold contacts on the circuit board may have become oxidized, which can prevent proper operation. To ensure the best performance, your expansion kit includes a small swab impregnated with deoxIT. Use the deoxIT to clean the contacts, as shown in Figure 4.

Be careful not to touch the contacts with your bare fingers; this will cause further oxidation.

You may want to use a plastic glove to make sure the contacts stay clean, and to avoid getting deoxIT on your hands.

Once you've deoxidized the contacts, you're ready to install the expansion board. We recommend saving the deoxIT cloth in its plastic bag, in case you need to clean the contacts again.

Please be sure to follow the hardware installation instructions for the appropriate model.

## Hardware Installation: PC3

1. Identify Bank 1 on the main circuit board. There are two slots on the main board. Bank 1 is the slot that is closer to you. If necessary, gently press the retaining clips at the edges of the slot into the open position.

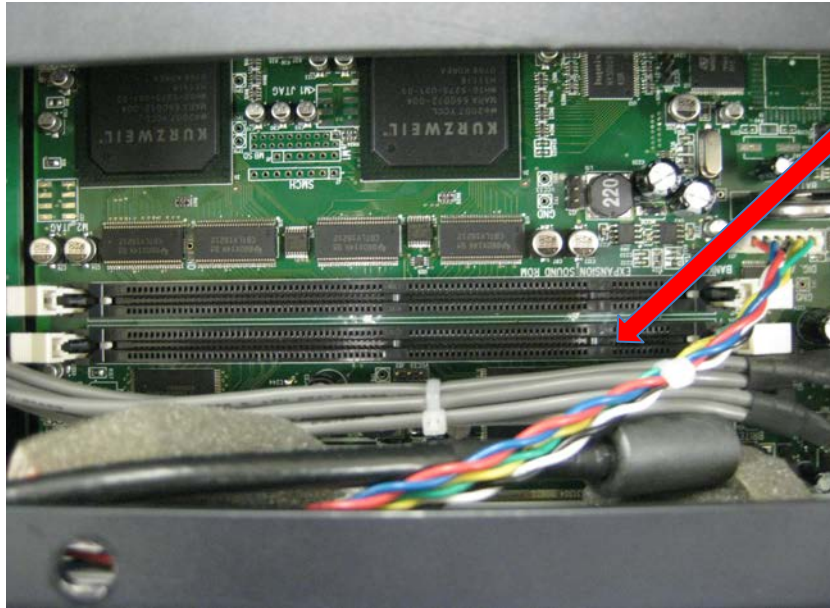


Figure 5: Identifying Bank 1

2. Grasp the expansion board at the top and center, with the chips facing away from you. The contacts should be at the bottom. Note the notches at the bottom and center of the expansion board. These notches help you align the board in the slot.
3. Holding the expansion board in a vertical position, insert it into the Bank 1, aligning the notches with the partitions in the socket.

**IMPORTANT NOTE: You may notice that Bank 0 is labeled EXPANSION SOUND ROM. This is NOT the correct slot, despite the labeling. Be sure to install the expansion board into Bank 1.**

4. Press the board firmly into the slot, then squeeze the two hinged clips at the ends of the slot until they snap into the closed position. This will require several pounds of pressure on the expansion board; make sure to apply the pressure vertically, to avoid putting stress on the expansion board or the slot. You may need to snap one clip first, then the other.
5. Verify that the expansion board is properly seated by gently pulling upward on the expansion board. If the expansion board moves at all, the clips are not properly closed. Make sure that the expansion board is properly seated and the clips are fully closed before proceeding.

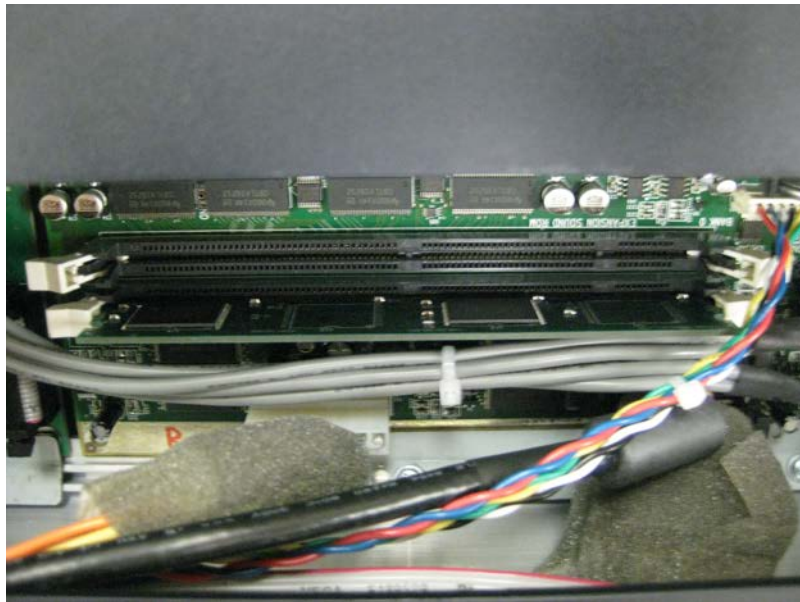


Figure 6: Expansion board installed in Bank 1

6. Replace the access panel.
7. Proceed to *Verifying the Installation: PC3* on page 9.

## Hardware Installation: PC3K

1. Identify Bank 0 on the main circuit board. There are two slots on the main board. Bank 1 already contains the 128 Mb PC3K flash memory board. Bank 0 is the empty slot.

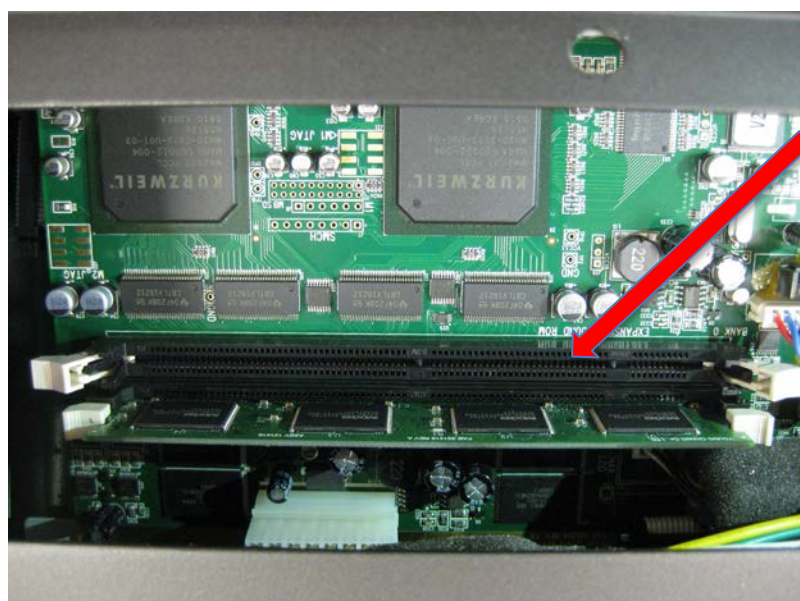
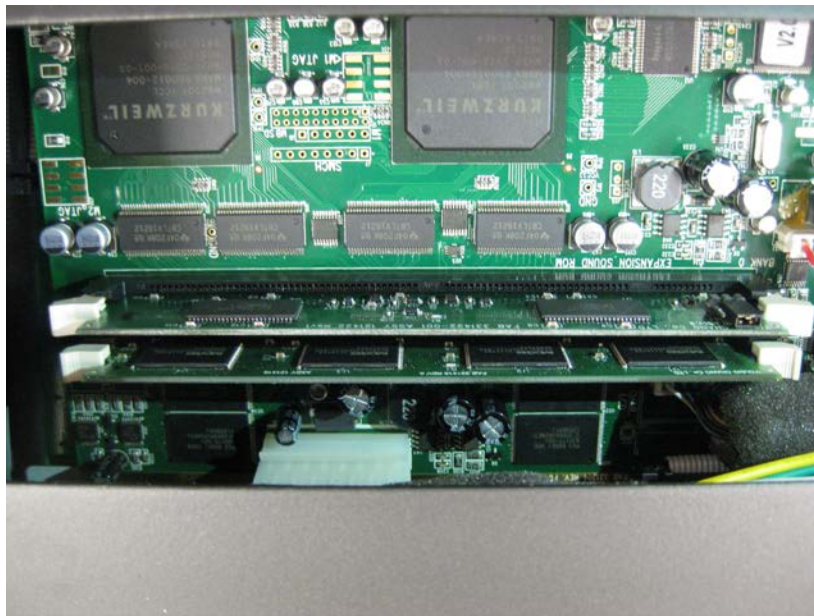


Figure 7: Identifying Bank 0



2. Grasp the expansion board at the top and center, with the chips facing away from you. The contacts should be at the bottom. Note the notches at the bottom and center of the expansion board. These notches help you align the expansion board in the slot on the main board.
3. Holding the expansion board in a vertical position, insert it into the Bank 0, aligning the notches with the partitions in the socket.
4. Press the board firmly into the slot, then squeeze the two hinged clips at the ends of the slot until they snap into the closed position. This will require several pounds of pressure on the expansion board; make sure to apply the pressure vertically, to avoid putting stress on the expansion board or the slot. You may need to snap one clip first, then the other.



**Figure 8: Expansion board installed in Bank 0**

5. Verify that the expansion board is properly seated by gently pulling upward on the expansion board. If the expansion board moves at all, the clips are not properly closed. Make sure that the expansion board is properly seated and the clips are fully closed before proceeding.
6. Replace the access panel.
7. Proceed to *Verifying the Installation: PC3K* on page 13.

## Verifying the Installation: PC3

You'll need to run a few diagnostic tests to make sure that your expansion board is properly installed and fully functional.

1. Reconnect the power supply and turn your instrument on.
2. Press the **MASTER** button to enter Master mode.

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## Verifying The Installation: PC3

3. Press SOFT Button 6 (**more**) three times; you'll see the following page, which includes the **EXPAND** option.

```
MasterMode:MAIN          Memory available:99%
Tune      : Oct          MasterLock: Off
Transpose: 0ST          DemoButton: On
FX Mode   : Performance Buttons : Off
DrumRemap: None        Display   : Lyr/Zone
Id Entry  : Global      SafeMode  : Off
SetupCtls: Instant     QACategory: Favorite
more MEMORY EXPAND PRVIEW JOIN more
```

4. Use SOFT Button 3 to select the **EXPAND** option. You should see the following page. If so, proceed to step 5. (Note: the diagnostic program refers to *Slots*, even though the main circuit board uses the term *Bank*. These terms mean the same thing.)

```
MasterMode:EXPANSION
Slot 0 : Empty DIMM slot.
Slot 1 : ROM expansion 1 installed.

TEST                                     Done
```

You'll see the following page if you've installed the expansion board in the wrong slot.

```
MasterMode:EXPANSION
Slot 0 : ROM expansion 1 is in WRONG slot.
Slot 1 : Empty DIMM slot.

TEST                                     Done
```

---

## Verifying The Installation: PC3

The following page appears if you've positioned the jumper on the expansion board incorrectly.

```
MasterMode:EXPANSION
Slot 0 : Empty DIMM slot.
Slot 1 : Jumper in wrong Position

TEST                               Done
```

Turn off your instrument, disconnect the power supply, open the access panel, remove the expansion board, and repeat the instructions in *Preparing for Hardware Installation* on page 4, making sure to position the jumper correctly.

If you've configured the expansion board correctly, but the PC3's display shows **Empty DIMM slot** for Bank 1, you may not have installed the expansion board properly. Turn off your instrument, disconnect the power supply, and repeat the instructions in *Hardware Installation: PC3* on page 7.

If you've configured the expansion board correctly, and have properly installed the board in Bank 1, but you still see **Empty DIMM slot** for Bank 1, there may be a problem with the board itself. The diagnostics in step 5 can help you determine if it's a problem with the installation, or with the board itself.

5. Use the UP/DOWN arrow keys to select Slot 1. Press SOFT button 1 (**TEST**) to run the diagnostic on the selected slot. The test should run for about a minute. If the test succeeds, you'll see the following:

```
MasterMode:Message
Test Passed.
Name : PC3ROM64MBRUS3
Version: 1.1
Copyright 2011 Young Chang Co. Ltd.

Ok
```

Congratulations! You're ready to start using your ROM expansion. If the test fails, it may be for any of the following reasons.

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## Verifying The Installation: PC3

If you've installed the expansion board in the wrong slot, you'll see the following:

```
MasterModeMessage
Please insert ROM in slot 1
Ok
```

In this case, turn off your instrument, disconnect the power supply, and repeat the instructions in *Hardware Installation: PC3* on page 7.

You may see any of the following results if there's an issue with the expansion board (either poor contact due to improper positioning or oxidation on the contacts, or a malfunction of the board itself).

An error in the address bus gives results like the following (it won't look exactly like this):

```
MasterModeMessage
Address Line error.
Addr bit 3 stuck.
Addr bit 25 stuck.
Ok
```

A data bus error results in a page that looks something like this:

```
MasterModeMessage
Data bus error.
0x0DFFFF80 - expected 0x0001, read 0x00F9
0x0DFFFF82 - expected 0x0002, read 0x00F9
0x0DFFFF84 - expected 0x0004, read 0x00F9
Ok
```

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## Verifying The Installation: PC3

You'll see the following if there's a checksum error, which may indicate a malfunction of the expansion board:

```
MasterModeMessage
Checksum error.
Expected: 0x3DEFAB45 Got: 0x3DE5689A
Ok
```

If you encounter any of these errors, you may be able to correct them by carefully reseating the expansion board in Bank 1. Another application of deoxIT to the contacts may also correct the problem. Both of these procedures may help if you encounter problems after using the ROM expansion successfully.

If you're unable to get a successful test after trying all of these procedures, please contact Kurzweil Customer Support. See page ii for contact information.

## Verifying the Installation: PC3K

You'll need to run a few diagnostic tests to make sure that your expansion board is properly installed and fully functional.

1. Reconnect the power supply and turn your instrument on.
2. Press the **MASTER** button to enter Master mode.
3. Press **SOFT** Button 6 (**more**) three times; you'll see the following page, which includes the **EXPAND** option.

```
MasterModeMAIN Memory available:99%
Tune      : Oct
Transpose: 0ST
FX Mode   : Performance
DrumRemap: None
Id Entry  : Global
SetupCtls: Instant
QA Category: Favorite
more MEMORY EXPAND PREVIEW JOIN more
```

---

## Verifying The Installation: PC3K

4. Use SOFT Button 3 to select the **EXPAND** option. You should see the following page. If so, proceed to step 5. (Note: the diagnostic program refers to *Slots*, even though the main circuit board uses the term *Bank*. These terms mean the same thing.) If so, proceed to step 5.

```
MasterMode:EXPANSION
Slot 0 : ROM Expansion 1 installed.
Slot 1 : 128 Mb Memory DIMM installed.

TEST                               Done
```

The following page appears if you've positioned the jumper on the expansion board incorrectly.

```
MasterMode:EXPANSION
Slot 0 : Jumper in wrong position
Slot 1 : 128 Mb Memory DIMM installed.

TEST                               Done
```

Turn off your instrument, disconnect the power supply, open the access panel, remove the expansion board, and repeat the instructions in *Preparing for Hardware Installation* on page 4, making sure to position the jumper correctly.

If you've configured the expansion board correctly, but the PC3's display shows **Empty DIMM slot** for Bank 0, you may not have installed the expansion board properly. Turn off your instrument, disconnect the power supply, and repeat the instructions in *Hardware Installation: PC3K* on page 8.

If you've configured the expansion board correctly, and have properly installed the board in Bank 0, but you still see **Empty DIMM slot** for Bank 0, there may be a problem with the board itself. The diagnostics in step 5 can help you determine if it's a problem with the installation, or with the board itself.

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## Verifying The Installation: PC3K

5. Use the UP/DOWN arrow keys to select Bank 0. Press SOFT button 1 (**TEST**) to run the diagnostic. The test should run for about a minute. If the test succeeds, you'll see the following:

```
MasterMode:Message
Test Passed.
Name : PC3ROM64MBRVS3
Version: 1.1
Copyright 2011 Young Chang Co. Ltd.
Ok
```

Congratulations! You're ready to start using your ROM expansion. If the test fails, it may be for any of the following reasons.

You may see any of the following results if there's an issue with the expansion board (either poor contact due to improper positioning or oxidation on the contacts, or a malfunction of the board itself).

An error in the address bus gives results like the following (it won't look exactly like this):

```
MasterMode:Message
Address Line error.
Addr bit 3 stuck.
Addr bit 25 stuck.
Ok
```

A data bus error results in a page that looks something like this:

```
MasterMode:Message
Data bus error.
0x0DFFFF80 - expected 0x0001, read 0x00F9
0x0DFFFF82 - expected 0x0002, read 0x00F9
0x0DFFFF84 - expected 0x0004, read 0x00F9
Ok
```

---

## Verifying The Installation: PC3K

You'll see the following if there's a checksum error, which may indicate a malfunction of the expansion board:

```
MasterMode:Message
Checksum error.
Expected: 0x3DEFAB45 Got: 0x3DE5689A
Ok
```

If you encounter any of these errors, you may be able to correct them by carefully reseating the expansion board in Bank 0. Another application of deoxIT to the contacts may also correct the problem. Both of these procedures may help if you encounter problems after using the ROM expansion successfully.

If you're unable to get a successful test after trying all of these procedures, please contact Kurzweil Customer Support. See page ii for contact information.