Integrated Control Corp.
Troubleshooting Guide for:
** Prince Castle Timer Bars/Kitchen Minder communication**

When to use this guide:
If a Kitchen Minder *Product Location Test* fails after performing a Kitchen Minder installation with Prince Castle PHU/Timer bars using the Kitchen Minder Installation Pictorial part# 896510-I

Overview:

1. Product Location Test review
2. System power recycle
3. Check PHU model compatibility
4. Check Timer Bar software version compatibility
5. Check Timer Bar addresses
6. Check PHU Bin addresses
7. Verify Cabling and required Prince Castle Translation Boxes/Level Shifters
8. Isolate PHU's to identify problem unit(s)
9. Identify suspect PHU component(s)
10. Replace suspect PHU(s) or component(s)

1. Product Location Test

This test ensures proper electrical connection and communication between the Timer Bars and the Kitchen Minder. It also provides the PHU number assigned to the Kitchen Minder for the Manager to program products to the proper pans.

---

a. Press the Menu button on the Kitchen Minder
b. Arrow down to Product Location then press the Select button.
c. Press the Continue button (left soft key). All Red Timer Bar LED's should go out except where the KM is attempting to "ping" the proper PHU Pan LED.
d. PHU1 is displayed on the Kitchen Minder. The top left pan is highlighted.
e. The top left pan on the PHU hooked up to PHU1 should have a Red LED and all the product names on the KM must match the product names on the Timer Bars (1st 4 letters).
f. Use the tables below for Duke and Prince Castle to help determine where a Red LED should be expected.
g. As you identify the KM PHU number, record this information and communicate this to the manager to assist in product set-up on the PC Minder program.
h. Press the Next button (right soft key) to advance to each of the nine possible PHUs.
i. When done press the Product Status button
j. If the Product Location test is not successful (ALL product names and LED "pinging" must pass the test), continue to #2

Integrated Control Corp.
Troubleshooting Guide for:
Prince Castle Timer Bars/Kitchen Minder communication

DUKE PHU'S			Prince Castle PHU'S		
KM COM#	**Box Warmer#**	**KM PHU#**	**KM COM#**	**Bar Address#**	**KM PHU#**
1	1	1	1	2	1
1	2	2	1	3	2
1	3	3	1	4	3
2	1	4	2	2	4
2	2	5	2	3	5
2	3	6	2	4	6
3	1	7	3	2	7
3	2	8	3	3	8
3	3	9	3	4	9

2. **System power recycle**

    a. Power OFF all Prince Castle PHU's
    b. Power OFF the Kitchen Minder
    c. Power ON all Prince Castle PHU's
    d. Power ON the Kitchen Minder
    e. The Kitchen Minder will display the following messages while booting up:
        i. "Sending Data Box 1" if a Translator Box is attached to COM1
        ii. "Sending Data Box 2" if a Translator Box is attached to COM2
        iii. "Sending Data Box 3" if a Translator Box is attached to COM3.
        iv. This will repeated 3 times, 1 for each Dayparts 1-3
        v. As the data is sent the Timer Bars should change to the product names programmed in the Kitchen Minder.
    f. The Kitchen Minder will display "Updating 1-5"
    g. Perform the Product Location Test

3. **Check PHU model compatibility**

In some rare instances the PHU's in the restaurant may have been purchased prior to Mar. 2002 and are NOT Kitchen Minder compatible regardless of the Timer bar model or software version. Please check the model and serial numbers below agains the silver label on the rearof the PHU for incompatible PHU's. If they match your PHU, it will need to be replaced.

	Prince Castle bin model numbers: DHB-BK1B DHB-BK3B DHB-BK5B DHB-BK7B will not be compatible with the ICC Kitchen Minder system.	Serial numbers that start with: LVxxxxxxx Nov 2001 MVxxxxxxx Dec 2001 AWxxxxxxx Jan 2002 BWxxxxxxx Feb 2002 will not be compatible with the ICC Kitchen Minder system.

Integrated Control Corp.
Troubleshooting Guide for:
 Prince Castle Timer Bars/Kitchen Minder communication

4. **Check Timer Bar software version compatibility**

Prince Castle Timer version/Kitchen Minder compatibility Chart

The following Timer bar software versions are Kitchen Minder compatible.
To check the version on the Timer Bar, press the Prince Castle and Down Arrow buttons simultaneously, the Version will appear in one of the Timer bar displays.

2x4	8 Channel	4.49, 4.59, **4.5B**
2x3	6 Channel	1.73, 1.83, 1.05, 1.15, **1.75**
2x2, 4x2	4 Channel	1.46, 1.56, 1.05, 1.15, **1.48**
3x4	Top Bar 4 Channel	**9.B1**
	Bottom Bar 8 Channel	**4.5B**

If the version number does not match, the Timer Bar must be flashed using the software shown in the chart. The latest software released in July 2010 is **in bold** and when used with Prince Castle Translator Box v 3.10 also released in July 2010 will provide the most optimal functionality. Refer to document # 896276 for instructions on updating Timer Bars and Translator boxes (special tools required from ICC).

5. **Check Timer Bar addresses**
   a. Each FRONT Timer bar (maximum of 3 Front bars including bars on vertical 4high x 2wide PHU's) on the same Translator Box must have a different Bar Address 2,3,or 4. Bar Addresses 1 or 5 and greater are not valid.
   b. Check the Bar address of each front Timer Bar by simultaneously pressing the Prince Castle and down arrow buttons on the bar while the PHU is powered on.
   c. If the any of the 3 Front Bars on the same Translator Box has the same address re-address the Bar(s) as detailed below.

6. **Re-addressing the Timer Bars:**
   a. Power off the PHU,
   b. Power on the PHU, immediately press the Prince Castle Button and Down Arrow button simultaneously for 5 seconds
   c. The far right display will show "Bar2", "2" will be blinking. The Version# will be displayed in the 6th display from the left.
   d. Use the Arrow Up or Down keys to program the proper address.
       i. The bars must have different addresses .It is not mandatory to address the bars as detailed below, but for consistency use the following scheme:
       ii. Address the 1st PHU off the Translator box to Bar2
       iii. Address the 2nd PHU to Bar3
       iv. Address the 3rd PHU to Bar4
   e. When the proper address is displayed, Press ENTER button on Timer Bar
   f. Recycle Power on PHU
   g. Repeat for all FRONT Timer Bars, the rear timers bars do not get addressed

7. <u>**Check PHU Bin addresses**</u>
    a. **Check the "Bin" # on each PHU** – ALL Bin#'s must be 2
    b. With the PHU powered ON, press the Actual Temp and Set Point keys on the PHU control simultaneously**.**
    c. The current Bin# setting will display
        i. If Bin2 is displayed, move on to the next PHU and go to Section 8 for each PHU to change the Bin# to Bin2.

8. <u>**Changing the PHU Bin addresses**</u>
    a. Power OFF the PHU
    b. Hold down the Actual Temp and Set Point keys simultaneously while powering ON the PHU until the small PROG led is illuminated (5 seconds
    c. Press the Up or Down arrow until Bin2 is displayed
    d. Press the Prince Castle button on the PHU control to save the selection.
    e. Press the Actual Temp and Set Point keys on the PHU control simultaneously to double check that Bin2 is assigned

9. <u>**Verify Cabling and required Prince Castle Translation Boxes/Level Shifters**</u>
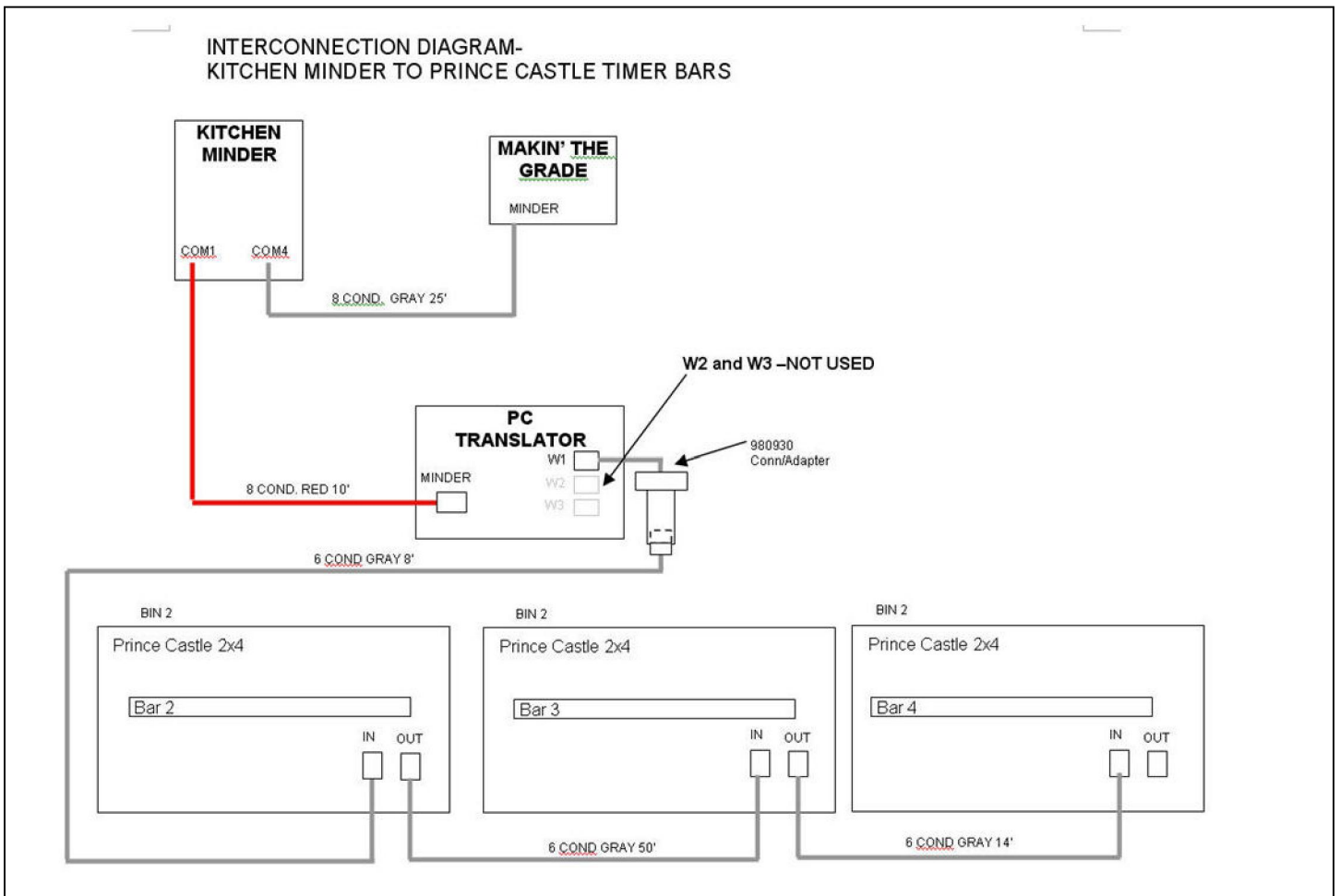
INTERCONNECTION DIAGRAM-
KITCHEN MINDER TO PRINCE CASTLE TIMER BARS

a. Refer to the wiring diagram above to check the cable configuration.
b. While checking connections, inspect the female ports on the PHU for grease and blue corrosion.
   i. Clean with alcohol and swab where needed.
   ii. If pins are bent and shorted or missing, PHU needs service.
c. Only the WARMER1 port is used on the PC Translator Box
d. WARMER2 and WARMER3 ports are inactive.
e. The Prince Castle Timer PHU's are daisy chained as follows:
   i. PC Translator Box WARMER1 port → Level shifter
   ii. Level shifter → 1st PHU IN port
   iii. 1st PHU OUT port → 2nd PHU IN port
   iv. 2nd PHU OUT port → 3rd PHU IN port
f. Repeat the same configuration for each COM port of the Kitchen Minder
   i. Each COM port uses it's own PC Translator Box
   ii. Each Box can have a maximum of 3 PHU's
   iii. 4x2 PHU's count as 2 PHU's since there are separate timer bars for the top on bottom.
   iv. If you use a 4x2 PHU, you can only attach one 2x4 PHU to it.
   v. Each PHU on it's own box uses Bar addresses 2, 3 & 4 ONLY
   vi. Each PHU Bin address on the PHU control MUST be Bin2

10. **Isolate PHU's to identify problem unit(s) on each Km COM Port**
   a. If one or more PHU's fail the Product Location Test, isolate each PHU to determine the suspect PHU. This assumes a KNOWN WORKING Translator Box/Dongle/Data Cable is being used and BIN/Timer Bar addresses have been verified.
      i. Identify cable routing and Translator Box/Dongle location
      ii. With the Dongle connected to the IN Port of the first PHU on the line, isolate by unplugging the cable on the OUT Port
      iii. Power cycle PHU and KM and do a Product Location Test, note results of PASS/FAIL.
      iv. Perform same function on 2nd and 3rd PHU independently.
      v. If an isolated PHU will not communicate with the KM the PHU needs service.
      vi. If 2 PHUs PASSED, connect a KNOWN WORKING data cable from OUT port of PHU1 to IN Port of PHU 2.
      vii. Recycle power on PHUs and KM. If PHU 2 FAILS, the OUT Port, internal wiring or Motherboard of PHU 1 is suspect.
      viii. Continue this process by using PASSed PHU's and identify where the connections are broken and which PHU is failing so the manager can have the PHU serviced or replaced.