TOSHIBA

Strata® DK Technical Bulletin

TBDK-0022
November 3, 1998

International PCBs I&M and Programming Updates Version D.2 to D.3

Print Version D.3 Updates

The pages included with this bulletin will update your *Strata DK Installation and Maintenance (I&M) and Programming Manuals* to documentation version D.3.

This bulletin provides installation instructions for the new PEPU2, PIOU2, PIOUS2 and IMDU2 Printed Circuit Boards (PCBs). These new PCBs do not provide any new features, other than the Mu Law/A Law jumper options.

Strata DK PCBs that use Pulse Code Modulation (PCM) coder/decoders (CODECs) will be gradually converted to easily accommodate either Mu Law or A Law PCM companding. Companding is a weighting process which limits the noise caused because an analog signal cannot be exactly replicated in digital form.

Mu Law is the companding standard for Pulse Code Modulation (PCM) in the U.S., Canada and Japan. Mexico, the United Kingdom and other parts of Europe and Asia use A Law as their standard. On the Strata DK PCM PCBs, all Mu Law/A Law jumper options are set for Mu Law as a default from the factory.

When the current inventory of PCBs with PCM CODECs is depleted, the new PCBs will be shipped. Some of the newer PCM PCBs have jumper straps added to replace soldering jumper wires.

The PEPU2, PIOU2, PIOUS2 and IMDU2 are the first new PCBs to be shipped. Other PCM PCBs are also expected to change. Information will be provided as it becomes available. Also, the *Strata DK I&M Manual* is being revised to include the new PCM PCBs.

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PEPU2
External Page Interface Unit

System: *DK424*

Circuits per PCB: *(see interfaces)*

Interfaces with: *built-in paging amplifier or page speaker*
door lock control
external amplifier control
external paging 600 ohm (duplex) interface (one zone)
MOH control
night relay control

Older Version(s): *PEPU*

The PEPU2 is similar to the PIOU2 and PIOUS2, but supports fewer peripherals than both PCBs. PEPU2 controls, indicators, and interface connectors are illustrated in Figure 7-5 and described in Table 7-3.

PEPU2 does not support the following PIOU2 and PIOUS2 options:

- Alarm sensor
- Four-zone page
- SMDR port
- Remote maintenance modem or ASCII terminal connector
- IMDU2 connection

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Note Refer to Chapter 10–Peripheral Installation and Chapter 8–DK40/DK424 Universal Slot PCB Wiring for installation of external options.

PEPU2 Installation

1. Make sure P15 is in the Mu Law position for U.S. and Canada.
2. Ensure the PEPU2 has been configured for the appropriate hardware options. (Refer to Chapter 10–Peripheral Installation.)
3. Insert the PEPU2 (component side facing right) into the last slot (S16) of the Base KSU/cabinet if the system has only a Base KSU/cabinet and no Expansion KSUs/cabinets. If there are Expansion KSU/cabinets, install the PEPU2 in the highest slot number of the highest numbered KSU/cabinet. Apply firm, even pressure to ensure proper mating of connectors.
4. After installing the PEPU2, gently pull the PCB outward. If the connectors are properly mated, a slight resistance is felt.

PEPU2 Programming

Program 03: Specify Code 41 for the slot that will support a PEPU2.

Program 10-2: Activates External Page with All Call Page (with access code **#39** only, not with **All Call Page** button).

Program 77-1: Assigns relay control options.

Program 78: Sets Night Ringing over External Page.

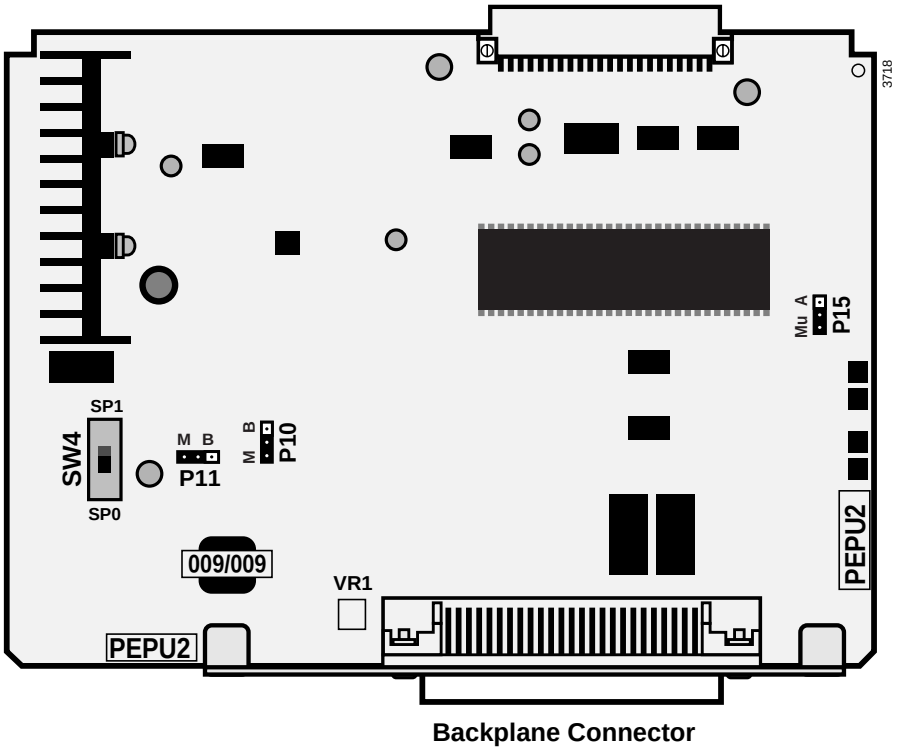

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Figure 7-5 PEPU2 PCB

Table 7-3 PEPU2 Controls, Indicators, and Connectors

Control/Indicator/Connector	Type of Component	Description
M/B make/break jumper plug P10	3-terminal jumper plug	External page/door lock control relay make or break jumper plug.
M/B make/break jumper plug P11		Night/hold relay make or break jumper plug.
SP1/SPO internal/external amplifier switch SW4	2-position slide switch	Selects built-in 3-watt amplifier (SPI) or 600-ohm output (SPO) for external page/BGM operation.
Volume control VR1	Trim potentiometer	Adjusts volume of built-in 3-watt amplifier.
PCM A Law/Mu Law option P15	3-terminal jumper plug	Default set for Mu Law standard (applies to the U.S., Canada and Japan). A Law is used in Mexico, the United Kingdom, and other parts of Europe and Asia.

PIOU2, PIOUS2
Option Interface Units

System: *DK40 Expansion KSU, DK424*

Circuits per PCB: *(see interfaces)*

Interfaces with:
night transfer/music hold control relay
door lock/external amplifier control relay
remote maintenance (IMDU2)
TTY port–terminal, modem, SMDI, ACD/MIS (DK424 only)
SMDR output
alarm sensor
zone page interface–four zones (PIOU2 only)
built-in paging amplifier (PIOU2 only)
unamplified page output

Older Version(s): *PIOU, PIOUS*

The PIOU2 and PIOUS2 both provide a circuit interface with the system peripheral options. A maximum of three PIOU2 or PIOUS2 PCBs can be installed in the system. (See "PIOU2, PIOUS2 Installation" on Page -18).

DK40 General Information: On the DK40, the Base KSU provides the 600 ohm page output; the 600 ohm page and amplified page output on the PIOU2, PIOUS2 are not used on the DK40. However, the TTY, IMDU2, SMDR and zone page relay options are available on the DK40.

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PIOU2 controls, indicators, and interface connectors are shown in Figure 6-12 and described in Table 6-4. PIOUS2 information is provided in Figure 6-13 and Table 6-5.

IMDU Compatibility with PIOU and PIOUS

The compatibility of the IMDU1 and IMDU2A PCBs are shown in Table 6-3.

Table 6-3 IMDU and PIOU/PIOUS Compatibility

PIOU/PIOUS	IMDU1	IMDU2A
PIOU1A/PIOUS1A	Available	Available
PIOU2A/PIOUS2A	N/A	Available

IMDU2 Installation onto a PIOU2 or PIOUS2 (Internal Option)

1. Make sure IMDU2 P3 is set for PCM Mu Law operation in the U.S and Canada.
2. Make sure IMDU2 P1, modem transmit gain is set on L in the U.S and Canada.
3. Make sure IMDU2 P2, modem receive gain is set on L in the U.S and Canada.
4. On the PIOU2 or PIOUS2, set the SW3 switch to the "MODEM" position for IMDU2 operation.

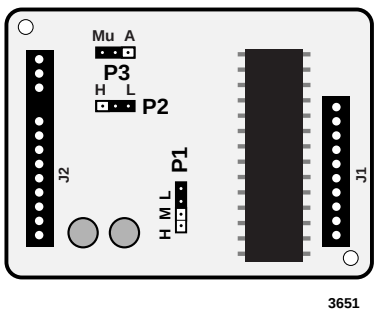

Figure 6-11 Remote Maintenance Modem (IMDU2) Installation

5. Set the P13 jumper plug on the PIOU2 or PIOUS2 to the "BELL."
6. Mate IMDU2 connector J1 with with PIOU2 or PIOUS2 connector P1 and IMDU2 J2 with P2 and P3 (see Figure 6-11).

Note PIOU2 or PIOUS2 connectors P1, P2, and P3 are positioned to allow installation of the IMDU2 only in the proper position.

7. Refer to the *Strata DK Programming Manual* and turn LED 14 on in Program 77-1 to enable IMDU2 operation.

Note The IMDU2 default station intercom or [DN] is #19.

8. Apply firm, even pressure to the IMDU2 to ensure proper mating of connectors.
9. Set the SW2 baud rate switch on the front panel to 300 or 1200, as appropriate, after the PCB has been installed in the KSU/cabinet (in for 300 bps, out for 1200 bps).

Note Refer to Chapter 10–Peripheral Installation for external option installation procedures.

PIOU2, PIOUS2 Installation

1. Make sure that P15 is in the Mu Law position for USA and Canada.
2. Ensure that the PIOU2 or PIOUS2 has been configured for the appropriate hardware options. (Refer to Chapter 10–Peripheral Installation for more details.)
3. Insert the PIOU2 or PIOUS2 (component side facing right) into the last slot ("S16") of the Base KSU/cabinet if the system only has a Base KSU/cabinet and no Expansion KSUs/cabinets. If there are Expansion KSUs/cabinets, install the PIOU2 or PIOUS2 in the highest slot number in any KSU/cabinet. Apply firm, even pressure to ensure proper mating of connectors.

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Note In DK40, PIOU2 or PIOUS2 can be installed in any available Expansion KSU.

4. After installing the PIOU2 or PIOUS2, gently pull the PCB outward. If the connectors are properly mated, a slight resistance is felt.

PIOU2, PIOUS2 Programming

Program 03: Specify Code 41, 42, or 43 for the slot that will support a PIOU2 or PIOUS2. (See "Multiple PIOU, PIOUS, RSSU Installation" on Page 10-83)

Note Program 76 assignments for RSIU, RSIS, RMDS will override Program 03 assignments (41, 42, and 43) for SMDI, SMDR, TTY, and maintenance modem.

Program 10-2: Activates External Page with All Call Page (with access code #39 only, not with **All Call Page** button).

Program 60: Assigns SMDR options.

Program 77-1: Assigns relay control and IMDU2 options.

Program 78: Sets Night Ringing over External Page

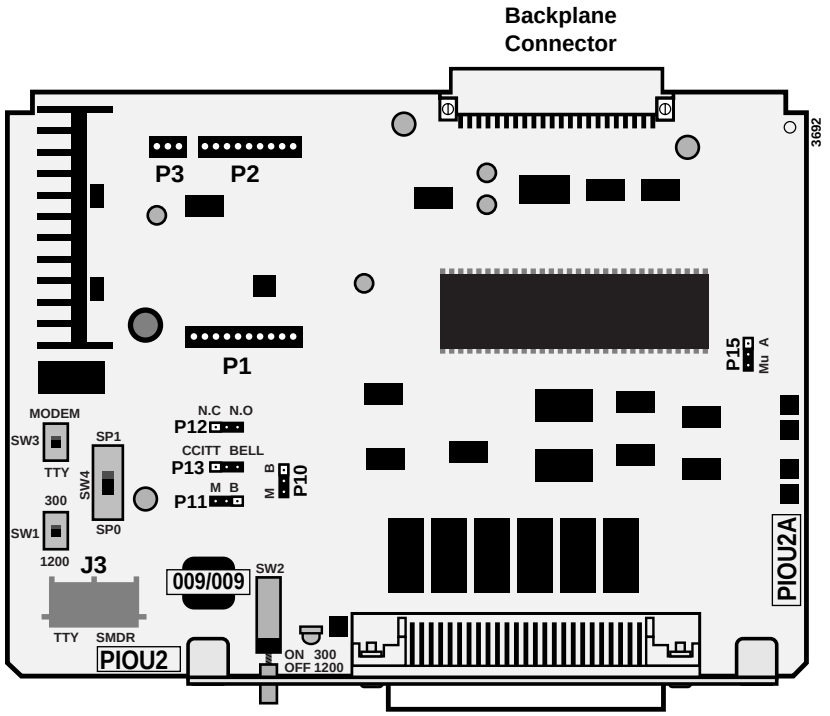

Figure 6-12 PIOU2 PCB

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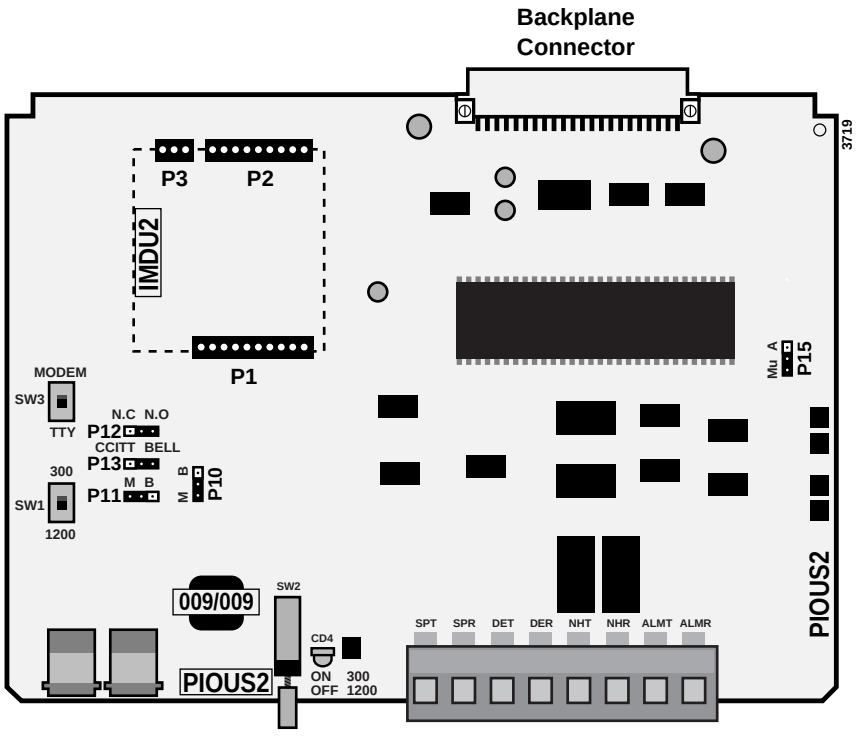

Figure 6-13 PIOUS2 PCB

Table 6-4 PIOU2 Controls, Indicators, and Connectors

Control/Indicator/Connector	Type of Component	Description
SMDR/TTY interface connector J3	Dual modular connector	Interface connector for SMDR printer/call accounting device and maintenance terminal/ modem.
IMDU2 connector P1	10-pin connector	Interface connector for remote maintenance modem piggy-back module.
IMDU2 connector P2	9-pin connector	
IMDU2 connector P3	3-pin connector	
M/B make/break jumper plug P10	Plastic jumper	External Page/Door Lock Control Relay Make or Break jumper plug.
M/B make/break jumper plug P11		Night/Hold Relay Make or Break jumper.
Alarm sensor N.O./N.C. jumper plug P12		Alarm sensor normally open or closed jumper.
CCITT/BELL plug P13		IMDU2 or external modem operating specification jumper plug.
SMDR baud rate switch SW1	2-position slide switch	Selects baud rate (300 or 1200 bps) for SMDR printer or call accounting device.
TTY baud rate switch SW2	2-position locking push-button switch	Selects baud rate (300 or 1200 bps) for Remote Maintenance Modem piggy-back module (IMDU2) or external TTY jack.
Modem/TTY switch SW3	2-position slide switch	Enables PIOU2 for operation with IMDU2 modem or TTY jack.
SPO/SP1 internal/external amplifier switch SW4		Selects built-in 3-watt amplifier (SPI) or 600-ohm output (SPO) for external page/BGM operation.
Volume control VR1	Trim potentiometer	Adjusts volume of built-in 3-watt amplifier.
PCM A Law/Mu Law option P15	3-terminal jumper plug	Default set for Mu Law standard (applies to the U.S., Canada and Japan). A Law is used in Mexico, the United Kingdom, and other parts of Europe and Asia.
*Most modems in USA require BELL specification. **Top modular is TTY and Bottom modular is SMDR.		

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Table 6-5 PIOUS2 Controls, Indicators, and Connectors

Control/Indicator/Connector	Type of Component	Description
SMDR/TTY interface connector J3	Dual modular connector (top modular is TTY, bottom is SMDR)	Interface connector for SMDR printer/call accounting device and maintenance terminal/ modem.**
IMDU2 connector P1	10-pin connector	Interface connector for remote maintenance modem piggy-back module.
IMDU2 connector P2	9-pin connector	
IMDU2 connector P3	3-pin connector	
M/B make/break jumper plug P10	3-terminal jumper plug	External Page/Door Lock Control Relay Make or Break jumper plug.
M/B make/break jumper plug P11		Night/Hold relay make or break jumper plug.
Alarm sensor N.O./N.C. jumper plug P12		Alarm sensor normally open or normally closed jumper plug.
CCITT/BELL jumper plug P13		IMDU2 or external modem operating specification jumper plug.
SMDR baud rate switch SW1	2-position slide switch	Selects baud rate (300 or 1200 bps) for SMDR printer or call accounting device.
TTY baud rate switch SW2	2-position locking push-button switch	Selects baud rate (300 or 1200 bps) for Remote Maintenance Modem piggy-back module (IMDU) or external TTY jack.
Modem/TTY switch SW3	2-position slide switch	Enables PIOUS2 for operation with IMDU2 modem or TTY jack.
PCM A Law/Mu Law option P15	3-terminal jumper plug	Default set for Mu Law standard (applies to the U.S., Canada and Japan). A Law is used in Mexico, the United Kingdom, and other parts of Europe and Asia.
*Most modems in USA require BELL specification. **Top modular is TTY and Bottom modular is SMDR.		

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RATU
Attendant Console Interface Unit

System: *DK424*
Circuits per PCB: *four attendant console circuits*
Interfaces with: *up to four conventional and/or PC attendant consoles*
Older Version(s): *none*

RATU controls and indicators are illustrated in Figure 6-14 and described in Table 6-6.

RATU Installation

1. Insert the RATU (component side facing right) into the slot following the last station PCB. Apply firm, even pressure to ensure proper mating of connectors (consoles will assume the next four station port numbers). (See Worksheets in Chapter 4–DK424 Configuration for RATU slot assignment recommendations.
2. After installing the RATU, gently pull the PCB outward. If the connectors are properly mated, a slight resistance is felt.

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Table 6-6 RATU Controls, Indicators, and Connectors

Control/Indicator/Connector	Type of Component	Description
Console 1 indicator CD3	Red LED	Lights when a PC or conventional console is not operating. The LED will turn off when the console is operational. The LED temporarily flashes when the console is first installed and the DK424 RCTU processor and attendant console or RATI initialize.
Console 2 indicator CD4		
Console 3 indicator CD5		
Console 4 indicator CD6		

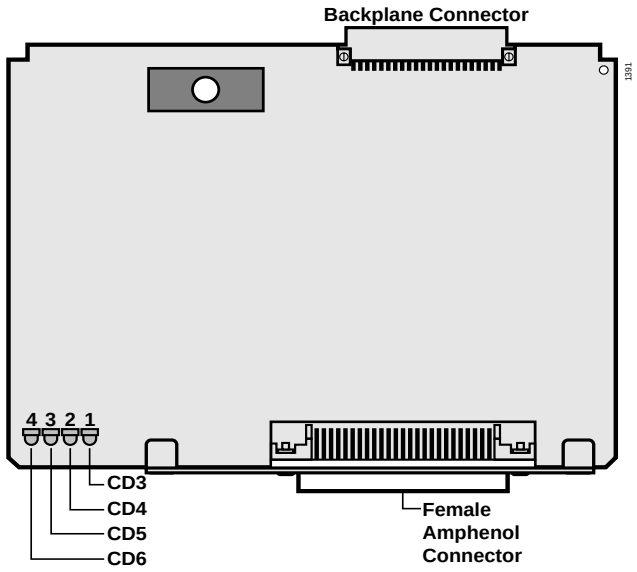

Figure 6-14 RATU PCB