TBDK-0011
May 30, 1998

4031041

Upgrading Strata DK Systems to DK424 Release 4.0

This bulletin provides instructions for replacing a Strata DK14, DK16e, or DK40 system with a DK424 system, Release 4.0. It also explains how to upgrade a DK280 or DK424 system, Release 1~3 to a DK424 system, Release 4.0. The following important items must be considered when performing the above changes and/or upgrades.

A new feature added in DK424 Release 4.0 is increased station capacity in systems containing Tie and Direct Inward Dialing (DID) lines. In Release 4.0, the station capacity of systems that contain Tie/DID lines increases due to Release 4.0 eliminating automatic assignment of station ports to DID and Tie lines. Tie and DID lines provided by RDDU, RDTU, RPTU, REMU, and PEMU PCBs do not use station ports.

This bulletin also provides instructions and examples of how DKAdmin/DKBackup, Release 4.0 adjusts for station port shifting caused by Tie and/or DID lines when upgrading to DK424, Release 4.0 software and above. This phenomenon occurs only when upgrading to DK424 Release 4.0 processors in systems that have station PCBs installed in higher numbered slots than Tie/DID line PCBs.

Table 1 shows the different Strata DK upgrade possibilities using the Release 4.0 version of DKAdmin/DKBackup. For example, you can upgrade from an RCTUA, R3 to an RCTUBB, R4; however, you cannot upgrade an RCTUA, R3 to an RCTUD, R1/R2.

Table 1 DKAdmin or DKBackup, Release 4.0, Upgrade Configurations

Upgrade To→		DK14	DK16e	DK40	RCTUA			RCTUB	RCTUBB		RCTUD			RCTUF	
Upgrade From↓		R1	R1	R1	R1	R3	R4	R1/R2	R3	R4	R1/R2	R3	R4	R3	R4
DK16e	R1			X		X	X		X	X		X	X	X	X
DK40	R1					X	X		X	X		X	X	X	X
RCTUA	R1					X	X	X	X	X	X	X	X	X	X
	R3						X		X	X		X	X	X	X
	R4									X			X		X
RCTUB	R1/R2								X	X	X	X	X	X	X
RCTUBB	R3									X		X	X	X	X
	R4												X		X
RCTUD	R1/R2											X	X	X	X
	R3												X	X	X
	R4														X
RCTUF	R3														X

X = an upgrade is available.

For additional information, refer to bulletin TBDK-0009.

DK424 Release 4.0 Upgrade Procedure

Important! *After you install Release 4.0 software on an RCTU PCB, you must initialize the RCTU and re-program the customer database. (See following procedures.)*

1. Using DKAdmin or DKBackup Release 4.0, download the customer data from the currently installed processor. Save this "Customer" data as a backup in case you must re-install the current processor and/or processor ROM/flash memory release level.

Note You must use DKAdmin or DKBackup Release 4.0 for this procedure. Prior releases of these programs do not provide Strata DK Release 4.0 Upload/Download/Upgrade capabilities.

2. Using DKAdmin or DKBackup, create a new customer for the upgrade.

Important! *When creating the new customer, select the currently installed processor type and release level—not the R4.0 Release level.*

3. Using DKAdmin or DKBackup, select the customer created in Step 2 (not Step 1).
4. Use the **`Upgrade`** (**`F5`**) function from the **`Backup/Restore Data`** menu to start the upgrade procedure.
5. Choose "**`Yes`**" when prompted to **`Backup From DK First`**.
6. After the current data is downloaded, follow the DKAdmin/DKBackup screen instructions to change the processor and/or ROMs or flash memory and reinitialize. The procedure for changing ROMs and flash memory is provided in figures on the following pages of this bulletin.

Important! *When changing the processor and ROM or flash memory for the "Upgrade to" processor, you can add one RSIU to complete the upgrade at 9600 bps. However:*

- *Do not add new station or Tie/DID line PCBs.*
- *Do not change the order in which the PCBs are installed in the slots.*
- *Be sure to reinitialize the "Upgrade to" processor twice and set the DK TTY port with Programs 76 and 03.*

7. Continue with the upgrade procedure as prompted by the DKAdmin or DKBackup screens until complete.

Note An upgrade example at the end of this bulletin describes what changes take place in the customer data during the DKAdmin/DKBackup upgrade procedure to make the upgrade transparent to the end user.

Upgrading Strata DK Systems to DK424 Release 4.0

1. Power down the system before removing and installing the PCB(s).

   Figure 1 shows the slot placement of the processor cards. Remove only the RCTUA, RCTUBB, RCTUD, or RCTUF.

2. Remove the MOH connection, if required.

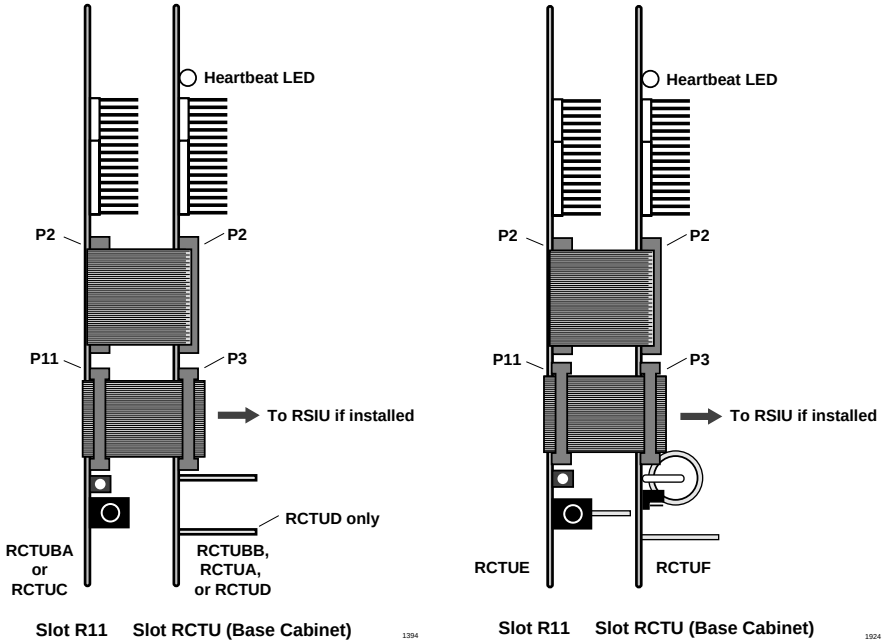


Figure 1 RRCU PCB Removal and Component Placement

3. Remove the RRCS DTMF PCB on the RCTU card, if equipped (see Figures 2~5).

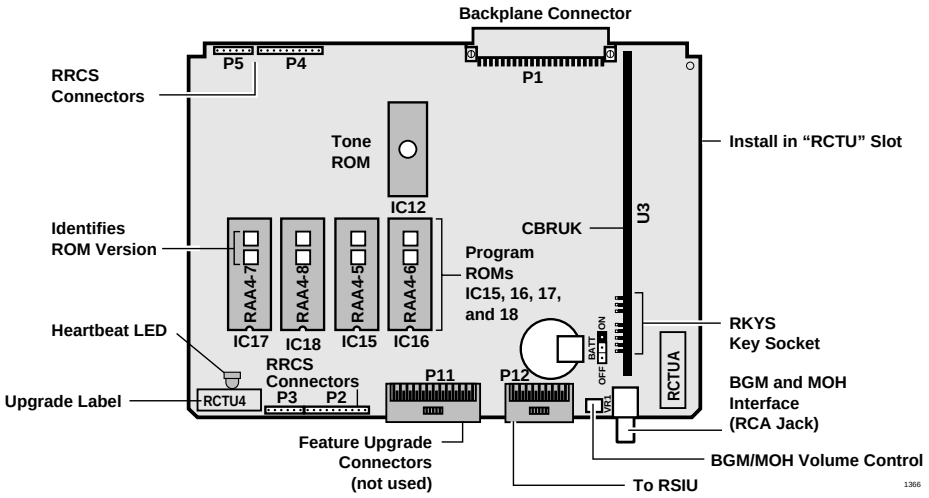


Figure 2 RCTUA PCB

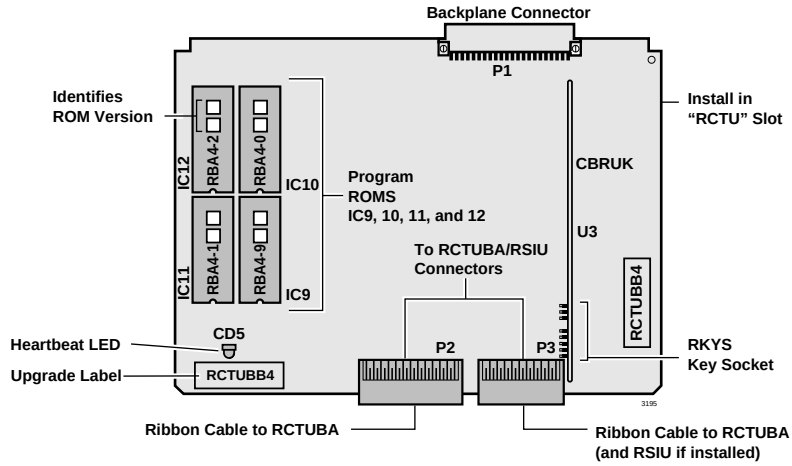


Figure 3 RCTUBB4 PCB

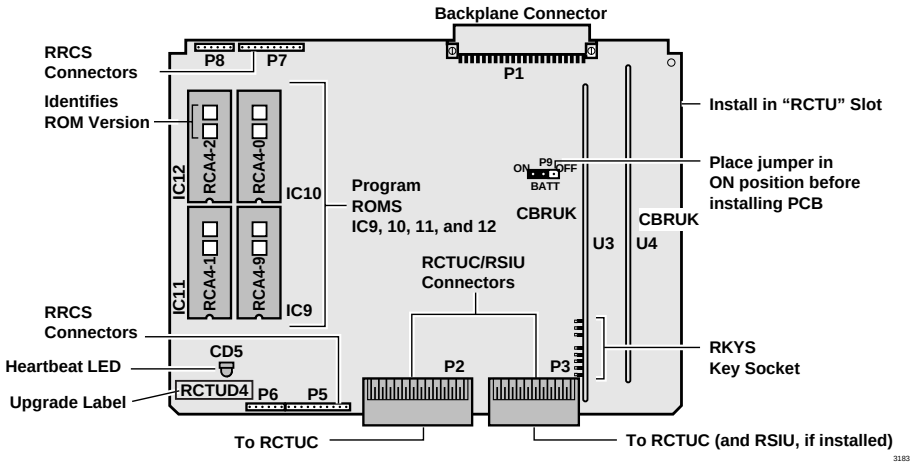
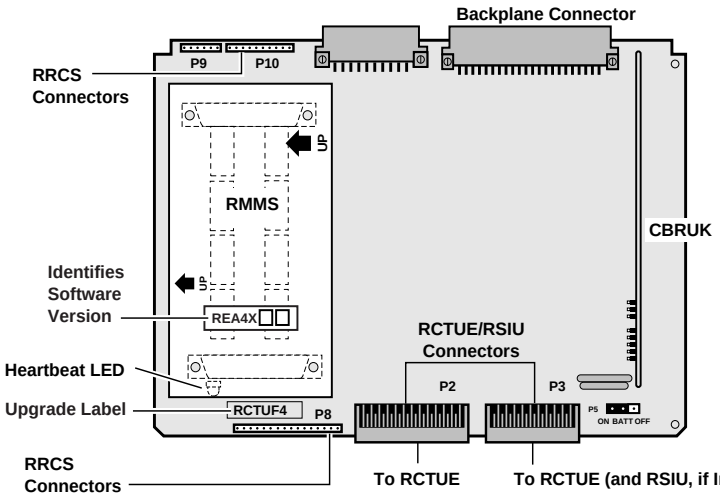


Figure 4 RCTUD4 PCB



CAUTION! **When removing the RMMS from RCTUF, take off the RMMS slowly, rocking back and forth in the direction of the arrows in the diagram.**

Figure 5 RCTUF4 PCB with RMMS

4. Using a small screwdriver to carefully remove the four ROMs (see Figure 6) or use your fingers to gently remove the flash memory. Replace with the equivalent ROMs or flash memory in the upgrade kit. Peel the labels (two locations) off the card.

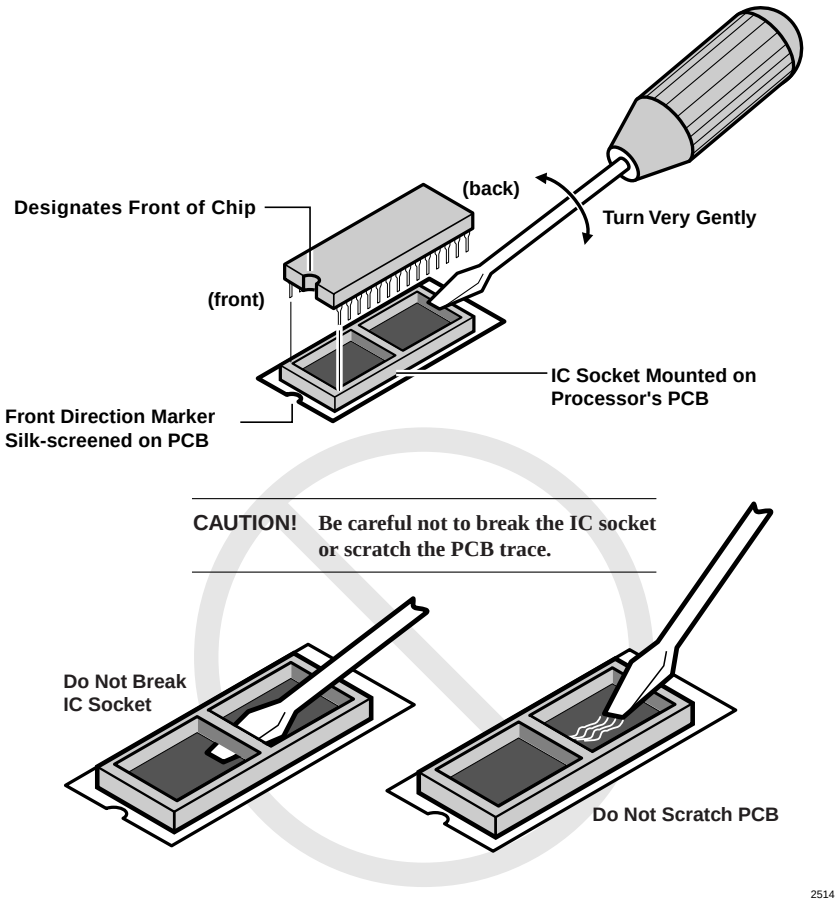


Figure 6 ROM Removal

5. Re-install the RRCS DTMF PCB, if required.

Note If there are battery straps on the PCB, make sure that they are placed in the “on” position for the processor card(s) to avoid losing your data.

6. Re-insert the processor card(s), reconnect the ribbon cables and MOH connection if necessary. If an RSIU card is being added, shift the card positions accordingly, add the RSIU PCB in slot 11 and change the ribbon cable to connect the RCTU PCB(s) to the RSIU.

   Note any changes needed to accommodate the displaced card if necessary. If this creates extensive changes, it may be better to upgrade without adding the RSIU, get the system working, and then adjust the card positions to add the RSIU card.

7. Turn the Strata DK system back on and follow the DKAdmin/DKBackup instruction screens for completing the upgrade.

DK424 Release 4.0 Upgrade Programming Example

Important! *When upgrading to DK424 Release 4.0 from a lower release, it is highly recommended to use the DKAdmin or DKBackup Release 4.0 PC software program. The DKAdmin and DKBackup Release 4.0 upgrade process performs all the necessary program port and code changes automatically. Trying to upgrade to Release 4.0 manually from the programming telephone could take many hours.*

The following Release 3 to Release 4.0 upgrade example shows basic programming changes automatically made by DKAdmin/DKBackup due to station port shifting. Station port shifting only occurs when station PCBs are in higher numbered slots than Tie and/or DID lines.

This example doesn't provide every program change required, nor does it attempt to instruct you on how to re-program a system upgraded to Release 4.0 via the programming telephone. This is a simple system upgrade; actual installed system upgrades can be much more complex.

Cabinet Station Port Counting Before/After Release 4.0 Upgrade

Figure 7 shows the DKAdmin cabinet drawing of a DK424 system with an:

- RCTUE3/F3 processor
- RSIU interface
- 16 digital telephones
- 4 analog DID lines

Notice that the RDDU PCB increments the station ports by four ports.

PCB Placement per Program 03								
Cabinet 1	R11	RCTU	S11	S12	S13	S14	S15	S16
PCB Type	RCTUE3	RCTUF3	RSIU	PDKU2	RDDU	PDKU2		
Port Nos.				000~007	008~011	012~019		
Line Nos.					001~004			
Option/Note								

Figure 7 Cabinet Drawing for RCTUE3/F3 Before Release 4.0 Upgrade

Figure 8 shows the same DKAdmin cabinet drawing after upgrading to an RCTUE3/F4 with DKAdmin.

Notice that the telephones connected to the PDKU2 in slot 14 were on ports 012~019 but are now on ports 008~015, respectively. This phenomenon requires many programming changes to enable the Strata DK system to operate the same as it did prior to the upgrade. DKAdmin/DKBackup Release 4.0 is designed to make all programming changes automatically to enable the upgrade to be transparent to the system operation.

PCB Placement per Program 03								
Cabinet 1	R11	RCTU	S11	S12	S13	S14	S15	S16
PCB Type	RCTUE3	RCTUF4	RSIU	PDKU2	RDDU	PDKU2		
Port Nos.				000~007		008~015		
Line Nos.					001~004			
Option/Note								

Figure 8 Cabinet Drawing for RCTUE3/F3 After Release 4.0 Upgrade

System/Station Administration Screen Before/After Release 4.0 Upgrade

Figure 9 shows the DKAdmin System/Station Administration Screen of the same DK424 Release 3 system shown in Figure 7.

System/Station Administration								
CSN (Cabinet Slot No.)	Phy. Port No.	PT	Telephone Location	Log Port No.	Int/ PDN No.	Telephone LCD User Name	VM CF Id Code	VM MW Id Code
12	000	DT	LOBBY	000	100	ATTENDANT NO:100	91100	92100
12	001	DT		001	101	NO:101	91101	92101
12	002	DT		002	102	NO:102	91102	92102
12	003	DT		003	103	NO:103	91103	92103
12	004	DT		004	104	NO:104	91104	92104
12	005	DT	TELEPHONE ROOM	005	105	PHONE RM NO:105	91105	92105
12	006	DT		006	106	NO:106	91106	92106
12	007	DT	KITCHEN	007	107	COOK NO:107	91107	92107
13	008	DL		008	108	NO:108	91108	92108
13	009	DL		009	109	NO:109	91109	92109
13	010	DL		010	110	NO:110	91110	92110
13	011	DL		011	111	NO:111	91111	92111
14	012	DT	FRONT OFFICE	012	112	BOSS NO:112	91112	92112
14	013	DT	PLAY ROOM	017	117	PLAY RM NO:117	91117	92117
14	014	DT		014	114	NO:114	91114	92114
14	015	DT		015	115	NO:115	91115	92115
14	016	DT		016	116	NO:116	91116	92116
14	017	DT		013	113	NO:113	91113	92113
14	018	DT		018	118	NO:118	91118	92118
14	019	DT	BACK ROOM	019	119	BACK RM NO:119	91119	92119

Figure 9 System/Station Administration Screen for RCTUE3/F4 Before Release 4.0 Upgrade

Figure 10 shows the same system after upgrading to RCTUE3/F4 with DKAdmin.

System/Station Administration								
CSN (Cabinet Slot No.)	Phy. Port No.	PT	Telephone Location	Log Port No.	Int/ PDN No.	Telephone LCD User Name	VM CF Id Code	VM MW Id Code
12	000	DT	LOBBY	000	100	ATTENDANT NO:100	91100	92100
12	001	DT		001	101	NO:101	91101	92101
12	002	DT		002	102	NO:102	91102	92102
12	003	DT		003	103	NO:103	91103	92103
12	004	DT		004	104	NO:104	91104	92104
12	005	DT	TELEPHONE ROOM	005	105	PHONE RM NO:105	91105	92105
12	006	DT		006	106	NO:106	91106	92106
12	007	DT	KITCHEN	007	107	COOK NO:107	91107	92107
14	008	DT	FRONT OFFICE	008	112	BOSS NO:112	91112	92112
14	009	DT	PLAY ROOM	013	117	PLAY RM NO:117	91117	92117
14	010	DT		010	114	NO:114	91114	92114
14	011	DT		011	115	NO:115	91115	92115
14	012	DT		012	116	NO:116	91116	92116
14	013	DT		009	113	NO:113	91113	92113
14	014	DT		014	118	NO:118	91118	92118
14	015	DT	BACK ROOM	015	119	BACK RM NO:119	91119	92119

Figure 10 System/Station Administration Screen for RCTUE3/F4 After Release 4.0 Upgrade

The following summarizes the changes (from Figure 9 to 10) after the upgrade.

	Before the Upgrade	After the Upgrade
RDDU in Slot 13	Ports 008~011 as DL (or DID) ports	Deleted
Port Range of PDKU2 in Slot 14	Ports 012~019	Ports 008~015
Slot 14 User Names, PDNs, DID numbers, etc.	Ports 012~019	Ports 008~015
Swapped Logical Ports in Slot 14	Ports 013 and 017	Ports 009 and 013

This type of phenomenon must occur on allStrata DK Programs that contain port numbers to provide a transparent upgrade.

Program Changes Before/After Release 4.0 Upgrade

The following examples show the type of programs and data that must change when upgrading from DK14/DK16e/DK40 Release 1 and DK280/DK424 Release 1~Release 3 to DK424 Release 4.0. These program changes are required to make theStrata DK operate the same after the upgrade as it did before; thus making the upgrade transparent to the end user. The changes apply to all DK424 Release 4, RCTU processors: RCTUA, RCTUB, RCTUBA/BB, RCTUC/D, and RCTUE/F.

Basically, any program that has station ports as data needs to change if the station port numbers are higher than the pre-upgrade DID/Tie line port numbers. The examples shown here represent the *types* of Strata DK programs that require changes when upgrading to Release 4.0. They are not meant to show all programs since the principles of program changes are the same for each program type.

When upgrading to a DK424 Release 4.0 (and above), the programming changes can be complex when a system has DID and Tie lines. The following examples show the program changes required when upgrading RCTUE3/F3 to RCTUE3/F4. The DKAdmin Cabinet Drawing and System/Station Administration Screen for this example are provided in Figures 7~10.

Programs 01 and 02

These programs show the relationship between physical and logical ports. When upgrading to Release 4.0, these relationships remain the same unless ports have been swapped prior to the upgrade. If the swapped port numbers shift during the upgrade, they must be renumbered in programs 01 and 02. If the swapped ports do not shift during the upgrade, they remain the same after the upgrade.

In this system configuration, ports 013 and 017 are swapped prior to the upgrade (see Figure 8). After the upgrade, port 013 shifts to 009 and 017 shifts to 013 (see Figure 9, therefore after the upgrade port 009 is swapped with port 013. Notice that before and after the upgrade, the Play Room telephone is on the second PDKU circuit in slot 14 and to call the Play Room Telephone you must dial 117 - making the upgrade transparent to the end user.

Program 03

There is no change to the data in this program when upgrading to Release 4.0; however the RDDU DID lines are not allocated ports after the upgrade (see Figure 8 and 10).

Program 04

Data in this program must be changed to adjust for port shifting caused by the RDDU DID line PCB in slot 13 (see Figures 9 and 10):

Before the Upgrade	After the Upgrade
Port 000-007; Data 100-107	Port 000-007; Data 100-107
Port 008-015; Data 108-115	Port 008-015; Data 112-119
Port 016-019; Data 116-119	Port 016-019; Data Blank

Programs ⋆04, 05, 09

There is no change to the data in these programs when upgrading to Release 4.0. Note that DID/Tie ports do not cause Phantom DN ports to shift in Strata DK Release 1~Release 3 systems, so they do not shift in Program ⋆04 when upgrading to Release 4.0. Also, the data in Program 09 is DN numbers and not port numbers, so data in Program 09 does not change when upgrading to Release 4.0.

Program ⋆09

Data in this program must be changed to adjust for port shifting caused by the RDDU DID line PCB in slot 13 (see Figures 9 and 10):

Before the Upgrade	After the Upgrade
Port 000-007; Data 100-107	Port 000-007; Data 100-107
Port 008-015; Data 108-115	Port 008-015; Data 112-119
Port 016-019; Data 116-119	Port 016-019; Data Blank

Programs 10-1 through 10-4

There is no change to the data in these system programs when upgrading to Release 4.0. Port numbers are not assigned to system programs so no adjustments are necessary.

Program 13

If the Message Center is the Front Office Telephone (PDN 112), data in this program must be changed to adjust for port shifting caused by the RDDU DID line PCB in slot 13 (see Figures 9 and 10):

- Data for Program 13 before the upgrade = 012
- Data for Program 13 after the upgrade = 008

If the Message Center is the Lobby Telephone (PDN 100), data in this program must not be changed to adjust for port shifting caused by the RDDU DID line PCB in slot 13. This is because Port 000 did not shift after the upgrade (see Figures 9 and 10):

- Data for Program 13 before the upgrade = 000
- Data for Program 13 after the upgrade = 000

Programs 15, 16, and 17

There is no change to the data in these programs when upgrading to Release 4.0. These are CO line programs and port numbers are not assigned in them so no adjustments are necessary.

Program ⋆17

If the DID Intercept Destination is the Back Room Telephone (PDN 119), data in this program must be changed to adjust for port shifting caused by the RDDU DID line PCB in slot 13 (see Figures 9 and 10):

- Program ⋆17 data for DID lines 001~004 before the upgrade = 019
- Program ⋆17 data for DID lines 001~004 after the upgrade = 015

If the DID Intercept Destination is the Kitchen Telephone (PDN 107), data in this program must not be changed to adjust for port shifting caused by the RDDU DID line PCB in slot 13. This is because Port 007 did not shift after the upgrade (see Figures 9 and 10):

- Program ⋆17 data for DID lines 001~004 before the upgrade = 007
- Program ⋆17 data for DID lines 001~004 after the upgrade = 007

Program 20

If the Front Office Telephone (PDN 112) is equipped with an RPCI-DI to display DNIS and Caller ID on a PC running a TAPI application, the data in Program 20 must shift. This enables the Front Office Telephone and RPCI to operate the same way after the upgrade as it did before. Notice that all Program 20 data for port 012 moves port to 008.

	Before the Upgrade	After the Upgrade
Port 008	LED17 on, all others off (Program 20 default)	LED 01,02,10, 11, and 17 on, all others off
Port 012	LED 01,02,10, 11, and 17 on, all others off	LED17 on, all others off

Program 30

If the Back Room Telephone (PDN 119) is programmed to dial forced and verified Account codes when making outside calls, the data in Program 30 must shift. This enables the Back Room Telephone to operate the same way after the upgrade as it did before. Notice that all Program 30 data for port 019 moves to port 015.

	Before the Upgrade	After the Upgrade
Port 015	LED 01, 05, and 07 ON, all others off (Program 30 default)	LED 01, 05, 07, 08, and 14 ON, all others off
Port 019	LED 01, 05, 07, 08, and14 on, all others off	LED 01, 05, and 07 on, all others off (Program 30 default)

Program 33

If the Front Office telephone (DN 112) is programmed to hunt to the Back Room Telephone (PDN 119), the data in Program 33 must shift:

Before the Upgrade	After the Upgrade
Hunt-From Port 012 to Port 019	Hunt-From Port 008 to Port 015

If the Front Office telephone (PDN112) is programmed to hunt to the Lobby Telephone (PDN 100), the data in Program 33 must shift:

Before the Upgrade	After the Upgrade
Hunt-From Port 012 to Port 000	Hunt-From Port 008 to Port 000

Program *33

If the Back Room telephone (PDN 119) is programmed as the Owner of PhDN 500, the data in Program *33 must shift:

Before the Upgrade	After the Upgrade
PhDN Port 500 is owned by Port 019	PhDN Port 500 is owned by Port 015

Programs 39, 29, *29, and 59

When a port number shifts from XXX to YYY during an Release 4.0 upgrade, the following Program changes must be made:

- In Program 39, the data set for port XXX must be copied over the data set for port YYY.
- In all Telephone/Console button programs, the appearances of the XXX port PDN/SDN Button (##XXX) and DSS Button (#XXX) must be changed to ##YYY and #YYY, respectively, on all keystrips.

Example: The Front Office Telephone changes from port 012 to port 008 during the Release 4.0 upgrade, (see Figures 9 and 10).

As shown below, all the button functions of the Front Office Telephone do not change after the upgrade but the Program 39 codes for PDN, SDN and DSS buttons change if the associated PDN/SDN or DSS port shifts. Also PhDN, Speed Dial, and Feature button codes do not change when ports shift.

10-Button Keystrip for Front Office Telephone on Port 012 -Before Upgrade				10-Button Keystrip for Front Office Telephone on Port 008 -After Upgrade		
Key No.	**Code**	**Name**		**Key No.**	**Code**	**Name**
K10	497	SDS		K10	497	SDS
K09	498	DND		K09	498	DND
K08	*103	SD103		K08	*103	SD103
K07	*102	SD102		K07	*102	SD102
K06	*101	SD101		K06	*101	SD101
K05	#017	DSS117		K05	#013	DSS117
K04	##500	PhDN 500		K04	##500	PhDN 500
K03	##019	SDN 119		K03	##015	SDN 119
K02	#000	DSS100		K02	#000	DSS100
K01	##012	PDN 112		K01	##008	PDN 112

Programs *42-1 and *42-2

Although this example does not include an RDTU (T1) PCB, it should be noted that these programs require an RDTU slot number entry with Strata DK Release 4.0 and above software. A slot number is not required in these programs prior to Release 4.0. DKAdmin/DKBackup automatically inserts the correct slot number for these programs during the upgrade process.