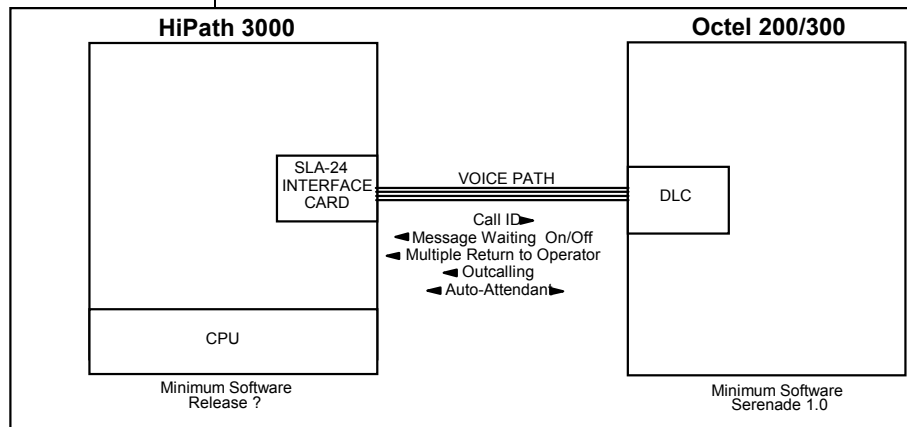


## Siemens Hipath 3000 Enhanced DTMF In-Band (EMEA)



**With in-band integration, one pathway between the PBX and the Octel System transmits both call information and voice communications**

### 1.0 METHOD OF INTEGRATION

With in-band integration, one pathway between the PBX and the Octel 200/300 message server™ transmits both call information and voice communications. The pathway is provided by 2-wire analog single-line circuits that connect to DLC 16 cards in the Octel System. The DLC-16 simulates 2-wire analog lines. Calls to an Octel port are preceded by the called party information from the PBX in DTMF format. The Octel System answers and plays the appropriate greeting. Message-waiting indication is set and canceled using DTMF commands over the same pathway.

### Octel requirements

### 2.0 OCTEL ORDERING INFORMATION

- Serenade software 1.0 (refer to the PRM for earlier software releases)
- DLC 16 (16 ports per DLC-16)
- DSP Port licenses – 1 per PBX port
- 25 pair cables with female end amphenol, one per line card, long enough to connect the Serenade line card to the PBX mainframe which then connects to PBX ports in the switch.
- Adaptive Integration Software (FP X0031)

**PBX hardware requirements****3.0 PBX HARDWARE REQUIREMENTS**

- SLA24 interface card - 24 port analogue card, one channel per Octel port required.
- CR8(Additional DTMF receivers as required).

**PBX software requirements****3.1 PBX SOFTWARE REQUIREMENTS**

- Supported Releases: Versions 1.0 and above.

**Supported Integration Features****4.0 SUPPORTED FEATURES**

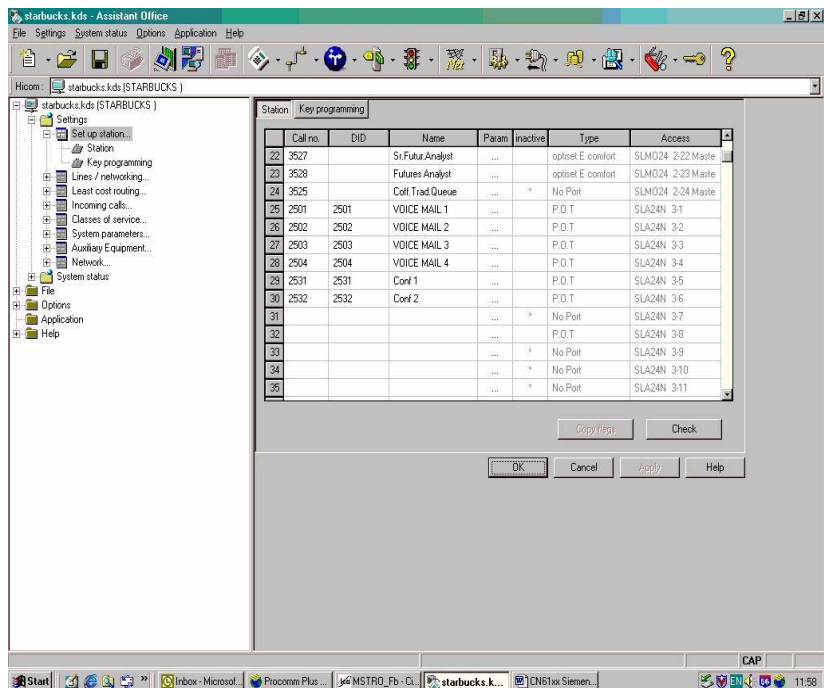
- System forwarding to personal greeting
  - busy
  - ring-no-answer
  - busy/ring-no-answer
  - all calls
- Station forwarding to personal greeting
  - busy
  - ring-no-answer
  - busy/ring-no-answer
  - all calls
- Message-Waiting Indicator
  - lights on digital handsets
  - audio “You Have a Message” on analog handsets
- Automated Attendant
- Outcalling
- Original Greeting on Double and Triple Call Forward
- Multiple return-to-operator
- Direct Call
- Call Sender

## Configuring the HiPath 3000 to Integrate

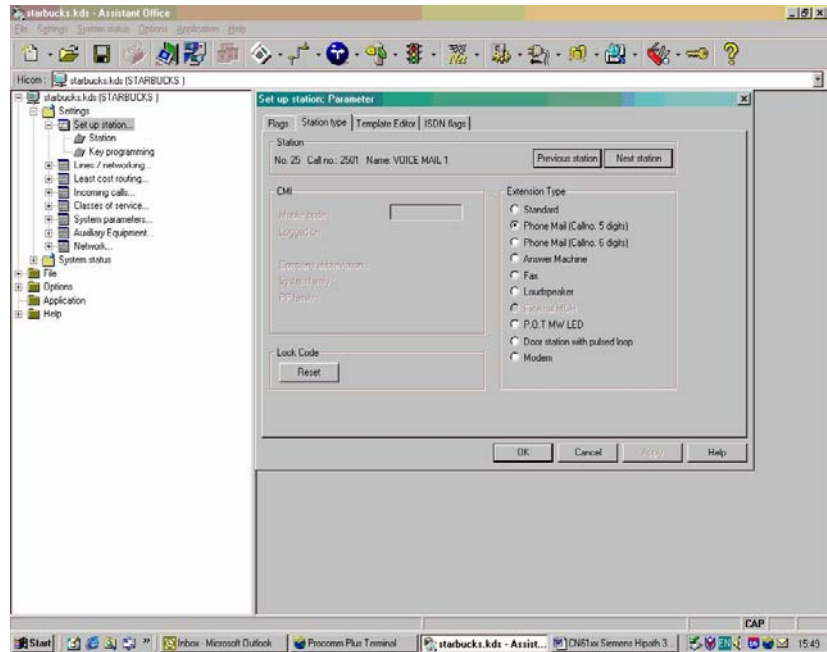
### 5.0 CONFIGURING THE HIPATH 3000 TO INTEGRATE

The following programming steps must be completed to configure the HiPath 3000 to integrate with the Overture 200/300. Use the Hicom Assistant E software to set-up the PBX. The steps involved are shown below, along with screen captures from an installation: -

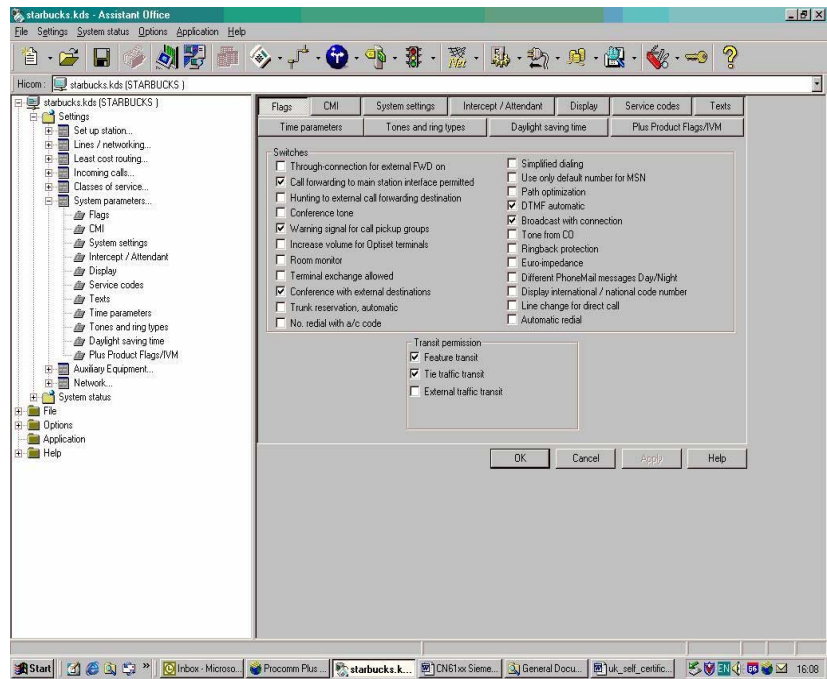
- Go to Settings/Set up station/Station, and enter the relevant station numbers, DID numbers etc for the ports that will connect to the Serenade. The screen capture below shows four ports used with extensions 2501 through 2504: -



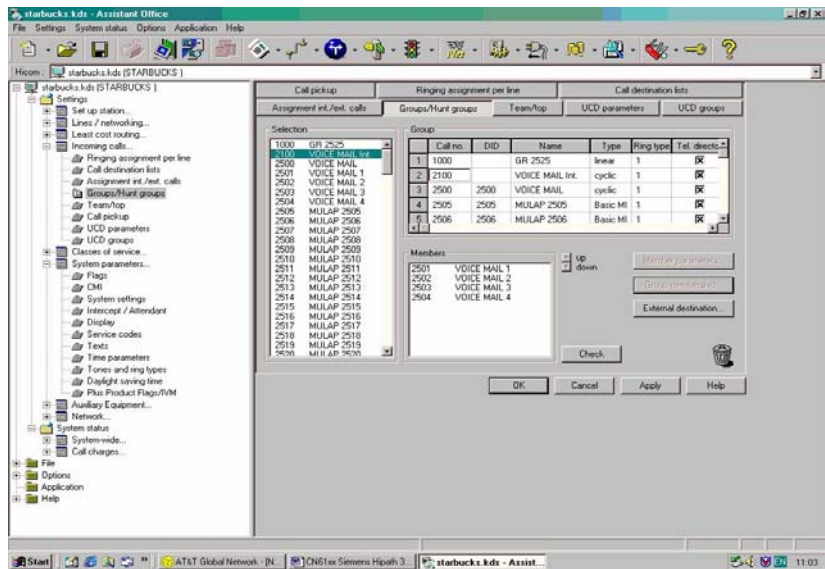
- Double click on the voice mail extension “param” columns from the above screen and click on the “Station Type” tab. Check the extension type listed as “Phone Mail (Callno. 5-digits)”. Ensure this is repeated for all voice mail ports. The screen is shown on the next page: -



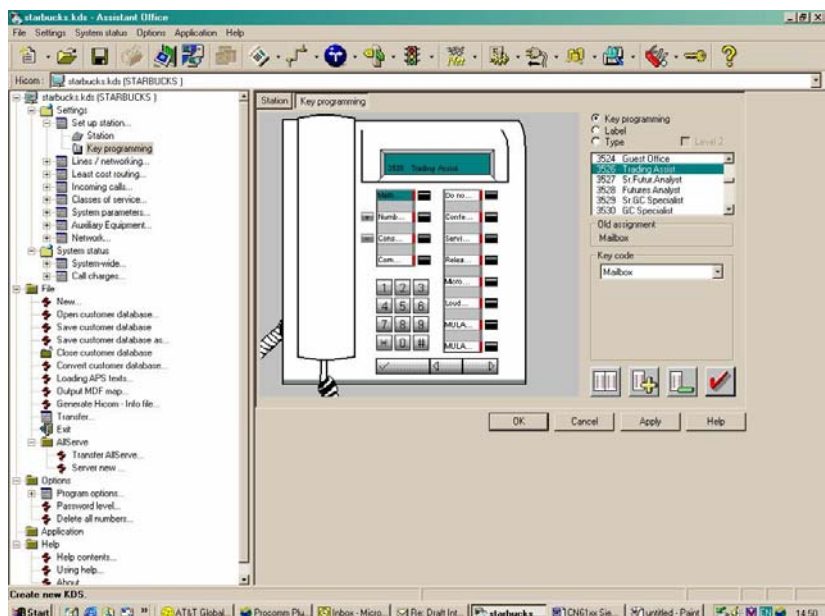
- Go to Settings/System parameter/flags and ensure the box labelled “activate DTMF automatically” is ticked as shown below: -



- Go to Settings/Incoming/Groups/Hunt groups. Create the internal direct dial hunt group number. The example screen capture below illustrate the hunt group set-up: -
  - Add voice mail ports as members to both hunt groups
  - Set hunting to “cyclic” for both groups
  - Configure call forwarding on no answer, forwarding on busy, etc.



- Go to Settings/Set up station/Key programming to program each user station with a Mailbox key. Make sure that this key is programmed and that the position of the key is known by the Octel Engineer. The screen capture below illustrates the Mailbox Key set-up: -



Note: The MULAP (Multi-Line Appearance) button can be used if the customer wishes on this PBX. Normally, the user has only one line on their phone so that callers go to voice mail if the user is on their phone, away from their desk or out of the office. For example, if they have 2 lines, they get a second MULAP on each extension. So when the first MULAP (which is printed on the business cards, etc.) is busy, the call goes to the second MULAP. So the user can see and hear the second call. Now he can choose to take the call or let the call ring. After a few rings (2 or 3) the call will be transferred to the voicemail. This is a special requirement not normally used. If required, the MULAP set-up must be programmed by the PBX Engineer. The MULAP must be programmed correctly on the PBX, otherwise it can result in the wrong number being sent to the Voice Mail.

The normal diverts of busy, ring-no-answer and immediate can be programmed by the user if allowed by the COS of their particular extension. It is recommended that all Serenade users be given a COS that allows them to set-up the busy, immediate and ring-no-answer diverts for everyday voice mail use using the Optiset menu. The busy divert should be enabled at all times to cover periods when the user is on the phone. The ring-no-answer divert will cover periods when they are away from their desk for a short period of time. The immediate divert should be used when they are away from the office outside normal business hours or in a meeting etc.

## 6.0 CONFIGURING THE OCTEL SYSTEM

Refer to the PRM Integration Volume, DTMF In-band for further instructions.

### □ SYSTEM TABLE

- Set System Index 3 to Siemens HICOM 200; select option 20 to Siemens for PBX Type, then option 3 to HICOM 200 (GER) for PBX Model.
- Set System Index 9 to 100ms (check PBX Flash timer).
- Set System Index 13 to: -  
Transfer initiate code: FED  
All reconnect codes: FEFD  
Transfer complete code: None
- Set System Index 26 to NO - Double Interrupted Ringback. Only set this to Yes in the UK.
- Set System Index 28 to 1000 - "D" Char Delay Time. (MSEC.)
- Set System Index 33 to E - PBX initialize code
- Set System Index 79 - \*68 - Message waiting "ON" (Enter the access code needed to activate the message waiting lamp)
- Set System Index 80 - D - Lamp MW: "ON" Post-Extension Digits.
- Set System Index 81 - #68 - Message waiting "OFF" (Enter the access code needed to deactivate the message waiting lamp)
- Set System Index 82 - D - Lamp MW: "OFF" Post-Extension Digits.
- Set System Index 85 to F - Reconnect code after 3rd party hung up
- Set System Index 106 to contain the port number that will perform MWI only. Set this up for small integrations with only several ports.
- Set System Index 116 to Y - Integration active
- Set System Index 117 to 0 - Ringbacks Before Answering AX Port
- Set System Index 176 to 5 - Fixed Length for DTMF Source field
- Set System Index 177 to 4 - Fixed Length for DTMF DEST field
- Set System Index 178 to 3 - Fixed Length for DTMF TRUNK field
- Set System Index 179 to 3 - Fixed Length for DTMF UNUSED field

**NOTE:** Verify the transfer sequences, message waiting codes and digit lengths for the DTMF fields in system parameters 176 – 179 for your PBX.

## □ SLOTS TABLE

Configure the SLOTS table as required.

Ensure that the COS assigned to the ports has attribute 68 assigned.

All integrated ports should be configured in AX mode.

An example of the Slots table is shown below for a 6 port system. Here the first 5 ports are in a cyclic hunt group and have COS 511 with attribute 68 assigned. Port 6 is not in the hunt group but performs the sole task of MWI only and is in COS 510.

SLOT	CARD TYPE	PORT	EXTENSION#	COS	MODE	OUTCALL	TEST	SYS
1	DLC16	1	1	511	AX	NO	NO	1
		2	1	511	AX	NO	NO	2
		3	1	511	AX	NO	NO	3
		4	1	511	AX	NO	NO	4
		5	1	511	AX	YES	NO	5
		6	1	510	AX	YES	NO	6

LSP table: DL16NTH

## □ DTMFINT TABLE

The general format for the CPI string is as follows: -

**\*\*\*TSSSS(S)DDD\*I**

- **T** is the type of call:
  - 1 Direct Internal Call
  - 2 Direct External Call
  - 3 Call Forwarded (all calls)
  - 4 Call Forwarded (No Answer)
  - 7 Call Forwarded (busy)
  - 8 Recall (no answer)
  - 9 Recall (busy)
- **SSSS(S)** is the source of the call, variable between 5 and 6 digits depending on the setting of the port station type. This is always 02222(2) for a trunk. If the source is an extension which is shorter than 5 digits it will be padded out with the character \* e.g. extension 123 becomes \*\*123.
- **DDD** is the destination extension number. This will be padded out with the character \* if shorter than 3 digits.



- **I** is the source information:
  - 1 Normal extension.
  - 2 'Attendant' (The intercept extension as programmed in 'Intercept / Attendant' in the 'System Parameters' object).
  - 3 Analogue trunk.
  - 4 Digital trunk.

Examples of CPI strings with extension 444 calling extension 555 using 5 digit voice mail working are as follows:

Extension 444 dialing direct to voice mail	***1**444*1
Call forward (all calls)	***3**444555*1
Call forward on no answer	***4**444555*1
Call forward on busy	***7**444555*1
Call forward on DND	***7**444555*1
External ISDN call direct to voice mail	***20222*4
External analogue call direct to voice mail	***20222*3

Here is an example from a HiPath 3000 installation. The Serenade DTMFINT table was set-up as shown below. The following Call Record Formats to the DTMFINT Table:

#### DTMF TABLE:

Format 1 Call Type: 2 (Direct Internal)

```
1 : ***1
2 : SOURCE(SYSP,*,L)
3 : MISC(FIX,2,*,L)
```

Format 2 Call Type: 5 (FwdRNA External)

```
1 : ***40
2 : TRUNK(FIX,4,0,L)
3 : DEST(VAR)
4 : *4
```

Format 3 Call Type: 7 (Fwd External)

```
1 : ***30
2 : TRUNK(FIX,4,0,L)
3 : DEST(VAR)
4 : *4
```

Format 4 Call Type: 8 (Fwd Internal)

```
1 : ***3*
2 : SOURCE(VAR)
3 : DEST(VAR,*)
4 : MISC(VAR,1)
```

**Format 6 Call Type: 6 (FwdRNA Internal)**

1 : \*\*\*4\*  
2 : SOURCE(VAR)  
3 : DEST(VAR)  
4 : \*1

**Format 8 Call Type: 8 (Fwd Internal)**

1 : \*\*\*80  
2 : SOURCE(SYSP,\*,T)  
3 : DEST(VAR)  
4 : \*3

**Format 9 Call Type: 8 (Fwd Internal)**

1 : \*\*\*7\*  
2 : SOURCE(VAR)  
3 : DEST(VAR)  
4 : \*1

**Format 10 Call Type: 7 (Fwd External)**

1 : \*\*\*70  
2 : TRUNK(FIX,4,0,L)  
3 : DEST(VAR)  
4 : \*4

Note: SSS = Source                    1 = Indicates an Internal Call  
      DDD = Destination            3 = Indicates an External Call  
      TTT = Trunk Number

In order to maintain the internal Name Header when calling station to station, all calls must be handled as Internal calls. In most cases, the forwarding code is the same for internal and external calls. The \*1 or \*3 indicates whether the call is internal or external, but the Octel system doesn't do anything about them. By stripping the \*1 and \*3 using the miscellaneous field on the DTMFINT Table the Octel assumes an internal call and plays the Name Header if there is one. Please also note there are duplicated entries for the internal calls as a problem was noted with the call record sent to the Octel.

The Octel system misses the first digit of the call record on an intermittent basis, e.g. \*\*\*1326 sometimes arrives as \*\*1 326 which means we have missed the first \*. To accommodate this an extra entry has been added for each internal call type.

**❑ COS TABLE**

- Add attribute 9 to COS for sets with message waiting lamps.
- Add attribute 68 to all ports COS for members of the hunt group. (This port is DTMF integrated for all ports receiving DTMF inband calls.)

**❑ USER TABLE**

All extension numbers configured for in-band integration must match the mailbox number; therefore shared extensions with different greetings are not allowed.

**❑ APPLICATION DELAY TABLE**

Set Application delays for a system with single interrupted ringback to the following values prior to testing, please bear in mind they may require adjustment: -

Set 49 to 1200ms

Set 50 to 400ms

Set 51 to 4400ms

Set 52 to 400ms

Set 53 to 1200ms

Set 54 to 800ms

Set 55 to 4200ms

Set 56 to 3800ms

Set 69 to 540ms

Set 70 to 440ms

Set 71 to 540ms

Set 72 to 440ms

Set Application delay table 110 to: 2000 ms

Set Application delay table 111 to: 500 ms

**7.0 INSTALLING THE LINE INTERFACE CARDS**

Each DLC-16 supports sixteen set appearances. Each DLC-16 connects to the PBX via the 25 pair connector at the rear of the Octel System. Connect each equipped port to the PBX. Ensure that all yellow LED's on the DLC-16 cards are extinguished.

### Testing the Integration when Installation is Complete

#### 7.1 TESTING THE INSTALLATION

- Create two mailboxes associated with two test extensions. Record a name and personal greeting for each mailbox.
- System forward one test extension to the Octel 200/300 message server System Access Number.
- Using one test extension, call the Direct Pilot Number. You should hear “to enter your mailbox, press #, Press #,#”. You should hear “please enter your security code”. Enter the security code and verify that the correct mailbox has been accessed.
- Using one test extension, call the other test extension. You should hear the personal greeting.
- Leave a message. Verify that the message waiting indicator turns on.
- Review the message in the mailbox.
- Delete the message. Verify that message waiting indication turns off.
- Verify that return-to-operator works properly.
- Set up all ports busy situation. Place a forwarded call and a direct call to the Octel system. Verify that the call is handled correctly.
- Refer to the PRM for further testing instructions.

Important Notes regarding this integration

## 8.0 CONSIDERATIONS

- 8.1 **The direct call feature is supported when subscribers access the Octel 200/300 message server using the callback feature.**
- 8.2 **While on soft hold, callers may hear one of the following:** Music on hold, silence, ringback, waiting tone.
- 8.3 **Integration may fail on an intermittent basis when using the DLC-16 card instead of the LIC card.** It has been found that the Octel 200/300 message server misses the first digit of the initial call record when using the DLC-16 line card. As the DLC-16 card is the preferred line card type Octel recommend that an extra DTMFINT format entry be added for each call type. The example DTMFINT table shown in this Configuration Note illustrates the way the problem can be overcome.
- 8.4 **Please ensure you obtain all the PBX settings for cadences, flash times, phone forwarding activation/deactivation codes, message waiting on/off codes and transfer sequences.** These will vary from PBX to PBX. The Octel 200/300 should be tuned to match.
- 8.5 **Extension numbers for the slots table are not important for this integration.** Enter any number in the extension field, e.g. 1.
- 8.6 **Message waiting indication should be assigned to one port in the slots table for installations with less than approx several ports.** Ensure this designated port is not in the hunt group and that it is assigned in system parameter 106. Allow it to outcall like all the other ports.
- 8.7 **Please note that full integration of Cenralised voice mail using CorNet-N is not supported at present.** It is however possible to call a voice mail group on another system but it is not possible to set a message across the network.
- 8.8 **It is advised that voice mail ports on the PBX are consecutive on the same PBX line card.**
- 8.9 **When a mailbox extension calls back the Voice Mail by pressing the lit mailbox key or using the OptiGuide keys in response to the MWI display, this would then call the individual Voice Mail port.** This is not desirable as the port may be busy. Therefore, the Voice Mail ports should have their own call destination list with the first target being the Voice Mail hunt group pilot number. The same list should be used for Day, Night and internal calls.

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PN 001-7-6125

**Version A**