2. System Identification

This section should be used to help define and identify each of the four configurations of the 3300 Monitoring System Bently Nevada LLC supports. The configurations are defined by the rack (backplane version), Power Supply, System Monitor, and firmware installed in individual monitors. The four possible 3300 configurations are explained below.

Use **Table 2** on the next page to clarify exactly which 3300 configuration you may have.

2.1 Configuration Definitions

2.1.1 Original System

This is the first generation 3300 System. This system **may** have serial communication capability, but it predates and is **not** compatible with the internal data interfaces (TDe or SDI/DDI) and most recent external communication processors (SDIX/DDIX, TDIX and TDXnet™ CPs). The Original System can, however, communicate with a Digital Control System (DCS) or with DM2000 Software through a DDM, PDM, or TDM CP.

These systems can be upgraded to the Mixed System, TDe or SDI/DDI System configuration, depending on your interface requirements.

2.1.2 Mixed System

This is the Original System with a 3300/03-01 System Monitor that does **not** have internal SDI/DDI capabilities but can interface to a DDM, TDM, PDM CP. In order to interface to an SDIX/DDIX, TDIX or TDXnet™ CP, the firmware in each monitor **must** be SDI/DDI compatible.

NOTE: The System Monitor must be configured correctly with jumpers depending upon the external Communication Processor that is being used. The DDM, TDM, and PDM use a different static interface than the SDIX/DDIX, TDIX, and TDXnet™ CPs. Refer to the System Monitor Manual (BN Document 89604, table 1) for specific jumper configurations.

Table 3 in Section 2.4 lists the SDI/DDI compatible monitor firmware part numbers.

The Mixed System can be upgraded to an SDI/DDI System, by changing the backplane, power supply, and the firmware in each of the monitors.

2.1.3 SDI/DDI System

This generation of the 3300 System uses 3300/03 System Monitor. The System Monitor, Power Supply, and Backplane are all SDI/DDI-compatible, with the System Monitor configured with or without internal SDI/DDI communications and the firmware in each of the monitors is SDI/DDI compatible.

NOTE: The System Monitor must be configured correctly with jumpers depending upon the external Communication Processor that is being used. The DDM, TDM, and PDM use a different static interface than the SDIX/DDIX, TDIX, and TDXnet™ communication processors. Refer to the System Monitor Manual (BN Document 89604, table 1) for specific jumper configurations.

The SDI/DDI System is compatible with the following Bently Nevada Communications Processors and monitoring software packages: DDM CP, TDM CP, SDIX/DDIX CP, TDIX CP, TDXnet™ CP, DDM/TDM Software, DDM2/TDM2 Software, System 64 Software, and DM2000 Software.

2.1.4 TDe System

This generation of the 3300 System uses 3300/02 System Monitor. The Power Supply, Backplane and firmware in each of the monitors must be SDI/DDI compatible.

The TDe System is not compatible with any external Communications Processors as they are not required for TDe to directly interface to System 1® Software.

Table 2
Possible 3300 System Configurations

Configuration	System Monitor	Rack (Backplane)[2]	Power Supply[2]	Monitor Firmware[1]
Original (old) System	3300/01-01 or 3300/01-02	3300/05 Option AA = 01 thru 17	3300/10 or /11 or /14[3]	Original firmware or SDI/DDI firmware
Mixed System	3300/03-01	3300/05 Option AA = 01 thru 17	3300/10 or /11 or /14[3]	Original firmware or SDI/DDI firmware
SDI/DDI system	3300/03-01, or 3300/03-02, or 3300/03-03	3300/05 Option AA = 21 thru 37	3300/12 or /14	SDI/DDI firmware
TDe system	3300/02	3300/05 Option AA = 21 thru 37	3300/12 or /14	SDI/DDI firmware

NOTES:

1. See **Table 3** in Section 2.4 for a list of SDI/DDI compatible firmware for each monitor. Some monitors were originally shipped with SDI/DDI compatible firmware.
2. It is not possible to use the old backplane with the new power supplies or to use the new backplane with the old power supplies.
3. If the 3300/14 DC Power Supply is to be used with the Original backplane, the original PIM MUST be used. 3300/14 is not compatible with 3300/01-02 System Monitors.

2.2 System Identification

The following sections discuss how to determine the configuration of your 3300 System. You may use the following steps as a guideline to identify your monitoring system.

- Examine the front panels of the System Monitor and Power Supply and check the Power Input Module on the back of the rack. Use the information in Sections 2.2.1, 2.2.2 and 2.2.3 to determine your system configuration.
- If there is any question as to the system configuration after completing step 1, use Section 2.3 to identify the backplane. The backplane determines whether the rack is an SDI/DDI System rack or an Original System rack.
  Note: The new backplane cannot be used with the old power supplies and the old backplane
  cannot be used with the new power supplies. They BOTH must be updated at the same time.
- Use Section 2.4 to determine the firmware identity on individual 3300 monitors. The firmware in some early 3300 monitors is not compatible with newer generation data interfaces (SDIX/DDIX, TDIX, TDXnet™ communication processors or TDe). Similarly, some new multi-channel monitors are not compatible with older external Communications Processors. See Section 3 for compatibility information.

2.4 Monitor Firmware Identification

Part numbers for SDI/DDI monitor firmware are shown in **Table 3** below. Firmware resides in either an EPROM or in the microprocessor ROM.

- The 3300/90 Diagnostic Instrument and the 3300/60 Vector Monitor are not supported by SDI/DDI.

- The original firmware in the 3300/17, 3300/36, 3300/39, 3300/40, 3300/52, 3300/53, 3300/54, 3300/75, 3300/80, 3300/81, 3300/85, and 3300/95 monitors is SDI/DDI compatible.

Table 3

Firmware Part Numbers for Individual Monitors[2]

Monitor Number	SDI/DDI Compatible EPROM Part Number	SDI/DDI Compatible Single-chip Microprocessor Part Number
3300/15	N/A	104044-01
3300/16	N/A	00800119 or 143972-01
3300/20	N/A	00800120 or 161667-01
3300/25	N/A	104044-02
3300/26	N/A	104044-03
3300/30[1]	89809-01	142591-01
3300/35[1]	89818-01	142592-01
3300/45[1]	89836-01	142783-01
3300/46[1]	89845-01	142784-01
3300/47[1]	89854-01	142785-01
3300/48[1]	89863-01	142786-01
3300/50-XX	89872-01	104046-XX
3300/55	N/A	104044-04
3300/61	89890-01	N/A
3300/65[1]	89899-01	142637-01
3300/70	N/A	104044-05

ALL revisions of above mentioned EPROM and microprocessor numbers are SDI/DDI compatible.

N/A = SDI/DDI compatible firmware not available in specified format.

NOTE:

1. These monitors were changed from EPROM to single-chip microprocessor formats. There were NO changes to the firmware in these monitors – only hardware changes. Either the EPROM or microprocessor listed are SDI/DDI compatible.
2. See Appendix B for the list of firmware upgrade kit part numbers for the individual monitors.

Use the following steps to check the firmware part number for the monitors in Table 3.

1. Disassemble the monitor by following the steps in the appropriate monitor manual. The microprocessor is located on the main circuit board that slides into the rack card guides. The EPROM is either on a small board, which plugs into the main board or is on the main board. The part number is marked on the EPROM or microprocessor.
2. Locate the EPROM or microprocessor on the circuit board by referring to the following sketches:

Firmware on the plug-in Memory Board

The following monitors have firmware installed in the EPROM located on a small plug in board (as shown in **Figure 9**):

3300/50-01
3300/50-02
3300/50-03

Only the part numbers in **Table 3** are SDI/DDI compatible. See Appendix B for a list of firmware upgrade kit Part Numbers.

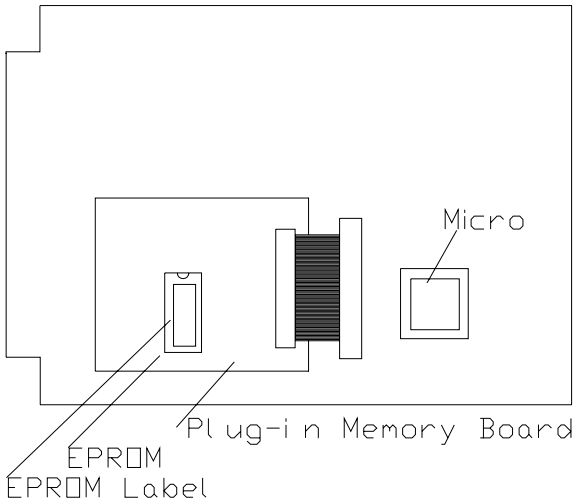
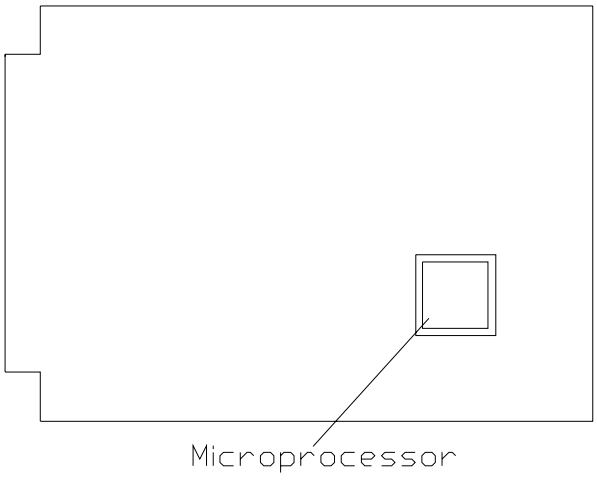


Figure 9
Expander Board Location

Firmware in the Microprocessor

These monitors have firmware installed in either the microprocessor ROM (a shown in **Figure 10**) or in the EPROM located on a small plug in board (as shown in **Figure 9**):

3300/15	3300/45
3300/16	3300/46
3300/20	3300/47
3300/25	3300/48
3300/26	3300/55
3300/30	3300/65
3300/35	3300/70



Only the part numbers in **Table 3** are SDI/DDI compatible. See Appendix B for a list of firmware upgrade kit Part Numbers.

Figure 10
Microprocessor Location

3. System Compatibility

Use this section to determine which components will or will not work in your system. Refer to Section 2 and/or **Table 2** to determine which system configuration you have.

See **Table 4** for compatibility between each System Monitor and the different Communications Processors and Software.

See **Appendix A** for the list of hardware upgrade kit part numbers.

See **Appendix B** for a list of firmware upgrade kit part numbers for the different monitors.

3.1 Mixed System Compatibility Issues

- If a Mixed System is being used with a DDM, TDM or PDM CP, the firmware in the individual monitors does **not** need to be SDI/DDI compatible.

- In order for the Mixed System to be compatible with the external communication processors (SDIX/DDIX, TDIX or TDXnet™ CP) and DM2000 software, the firmware in all of the monitors must be SDI/DDI compatible. See **Table 3** for SDI/DDI compatible firmware.

3.2 Additional Compatibility Issues

3.2.1 Monitors

- The original firmware in the 3300/17, 3300/36, 3300/39, 3300/40, 3300/52, 3300/53, 3300/54, 3300/75, 3300/80, 3300/81, 3300/85, and 3300/95 monitors is SDI/DDI compatible.

- The 3300/75, /80 and /81 monitors support SDI(X)/DDI(X), TDIX, and TDXnet™ CPs only.

- The 3300/75, /80 and /81 monitors are compatible with only the 3300/01-01, 3300/02 and 3300/03-XX System Monitors.

- The 3300/90 Diagnostic Instrument and the 3300/60 Vector Monitor are not supported by SDI/DDI.

3.2.2 Communications Processors

If a TDM communications processor is on the same communications chain with a TDIX or TDXnet™ communication processor, and the TDM firmware is Rev C or earlier, the TDM firmware will need to be upgraded. Contact your Bently Nevada representative to order a firmware upgrade kit for your TDM communications processor.

3.3 Communication Processor and Software Compatibility

Table 4
Communication Processor and Monitoring Software Compatibility

Communications Processor or Software	System Monitor					
	3300/01 -01	3300/01 -02[5]	3300/02 (TDe)	3300/03 -01	3300/03-02[7] (Internal SDI)	3300/03-03[7] (Internal DDI)
DDM CP	C	C	NC	C	NC	NC
TDM CP	C	C	NC	C	NC	NC
PDM CP	C	C	NC	C	NC	NC
SDIX/DDIX CP	NC	NC	NC	C	NC	NC
TDIX CP	NC	NC	NC	C[8]	NC[8]	NC[8]
TDXnet™ CP	NC	NC	NC	C[8]	NC[8]	NC[8]
DDM/TDM Software	C[1]	C[1]	NC	C[1]	NC	NC
DDM2/TDM2 Software[4]	C[1]	C[1]	NC	C[3]	C[3]	C
DM2000 Software	C[1]	C[1]	NC	C[6]	C[8]	C[4, 8]
System 1® Software	NC	NC	C	NC	NC	NC
Host System using Allen-Bradley® or Modicon Modbus® Comm Protocol	C[1]	C	NC	C[2]	C	C

NOTES

C = compatible NC = not compatible

1. A DDM or TDM CP must be installed.
2. Use with a TDIX, TDXnet™ CP or upgrade to a 3300/03-02 SDI.
3. Use with a TDM, TDIX CP or upgrade to a 3300/03-03 DDI.
4. DDI can be daisy-chained with DDI, DDM, TDM, PDM and TDIX CPs. Refer to the Serial Data Interface/Dynamic Data Interface Manual, Bently Nevada part number 89541-01, for details on daisy chaining 3300 racks and cabling requirements.
5. Host software developed for the 3300/01-02 Serial Interface System Monitor will work with the SDI but the additional features of the SDI will not be available to the host unless the software is updated.
6. Use with a DDM, TDM, TDIX, TDXnet™ CP or upgrade to 3300/03-03 DDI.
7. The internal SDI/DDI communication protocols MUST be disabled (configured as a 3300/03-01) in order to connect to an external CP.
8. In order to communicate with a TDIX CP, TDXnet™ CP or TDe, the firmware in EACH monitor MUST be SDI/DDI compatible.

5. Appendix B

5.1 Firmware Upgrade Kit Part Numbers

To upgrade to an SDI/DDI compatible monitor

Monitor or Communication Processor Part Number	**Firmware Upgrade Kit Part Number**
3300/15 Dual Vibration Monitor	104535-01
3300/16 Dual Vibration w/Gap Monitor	104535-02
3300/20 Dual Thrust Position Monitor	104535-03
3300/25 Dual Accelerometer Monitor	104535-04
3300/26 Dual Accelerometer RMS Monitor	104535-05
3300/30 Six-channel Thermocouple Input Temperature Monitor	104535-06
3300/35 Six-channel RTD Input Temperature Monitor	104535-07
3300/45 Dual Differential Expansion Monitor	104535-08
3300/46 Ramp Differential Expansion Monitor	104535-09
3300/47 Complementary Input Differential Expansion Monitor	104535-10
3300/48 Case Expansion Monitor	104535-11
3300/50-01 Dual Setpoint Tachometer	104535-12
3300/50-02 Zero Speed Tachometer	104535-17
3300/50-03 Rotor Acceleration Tachometer	104535-18
3300/55 Dual Velocity Monitor	104535-13
3300/61 Dual Vector Monitor	104535-14
3300/65 Dual Probe Monitor	104535-15
3300/70 Dual Valve Position Indicator	104535-16

Note: The original firmware in the 3300/17, 3300/36, 3300/39, 3300/40, 3300/52, 3300/53, 3300/54, 3300/75, 3300/80, 3300/81, 3300/85, and 3300/95 monitors is SDI/DDI compatible.