



Date: July 16, 2008

Ref: NMEA 2000 unused characters in fixed strings (DF63)

National Marine Electronics Association
Technical Corrigendum
Number 1-2008

There are a number of parameter groups that include fixed length string fields. Unused characters within these fields should be filled with the hex value of FF. This erratum clarifies the text within for the DF63 in Appendix B and incorporates validates implementation through certification test(s) in Appendix C.

Documents Effected:

- Appendix B version 1.210 and earlier
- Appendix C Version 1.200 October 1, 2004 and earlier

Change to the NMEA 2000 Appendix C Certification Criteria and Test Methods

Replace the text in section C.3.18.2.1 with the following (changes are highlighted in yellow).

Begin replacement of C.3.18.2.1

C.3.18.2.1 Example text:

The text in this section shows two of many possible outcomes. The first example text shows the results when the DUT passes the test. The second example shows that the DUT failed the test by not properly detecting a non-matching NMEA version request parameter value. Other results may be possible and should be similarly documented.

Test 3.18 Product Information [8.3.2.1] - Mandatory – PASSED

Method 3.18.1: PGN 059904 ISO Request requesting PGN 126996 sent.

PGN 126996 received.

Field 1 (NMEA 2000 Database Version) = 1000 => Requires Verification

Field 2 (NMEA Manufacturer's Product Code) = 127

Field 3 (Manufacturer's Model ID) = "4D6F64656C2031FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF" = "Model 1" => **Requires Verification** that unused characters set to "FF".

Field 4 (Manufacturer's Software Version Code) = "342E33372E3441FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF" = "4.37.4A" => **Requires Verification** that unused characters set to "FF".

Field 5 (Manufacturer's Software Version Code) = "342E33372E3441FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF" = "4.37.4A" => **Requires Verification** that unused characters set to "FF".

Field 7 (Certification Level) = 0

Field 8 (Load Equivalency) = 1 => **Requires Verification**

PGN 126208 Request destination addressed containing the following parameters sent

Field 1 - Complex Request Group Function Code = 0 (Request group function)

Field 2 - Requested PGN = 126996

Field 3 - Transmission Interval = 4294967295 (FFFFFFFF₁₆)

Field 4 - Transmission interval offset = 65535 (FFFF₁₆)

Field 5 - Number of Pairs of Request Parameters to follow = 1

Field 6 - Field number of first parameter = 1 (field 1 from 126464)

Field 7 - Value of first parameter = ##### (NMEA 2000 Version + 1 from 126996 returned above)

PGN 126208 acknowledgment received

PGN error code = 0 (Value from field 2 of response)
PGN of message being acknowledged = 126996
Priority error code = 0 (Value from field 4 of response)
Parameter error code = 3 (Value from field 6 of response)
PGN 126208 Request destination addressed containing the following parameters sent
Field 1 - Complex Request Group Function Code = 0 (Request group function)
Field 2 - Requested PGN = 126996
Field 3 - Transmission Interval = 4294967295 (FFFFFFFF₁₆)
Field 4 - Transmission interval offset = 65535 (FFFF₁₆)
Field 5 - Number of Pairs of Request Parameters to follow = 1
Field 6 - Field number of first parameter = 1 (field 1 from 126464)
Field 7 - Value of first parameter = ##### (NMEA 2000 Version from 126996 returned above)
PGN 126996 received.

Or

Test 3.18 Product Information [8.3.2.1] - Mandatory – FAILED*

Method 3.18.1: PGN 059904 ISO Request requesting PGN 126996 sent.

PGN 126996 received.

Field 1 (NMEA 2000 Database Version) = 1000 => **Requires**

Verification

Field 2 (NMEA Manufacturer's Product Code) = 127

Field 3 (Manufacturer's Model ID) = "4D6F64656C2031FF" = "Model 1" => **Requires Verification** that unused characters set to "FF".

Field 4 (Manufacturer's Software Version Code) = "342E33372E3441FF" = "4.37.4A" => **Requires Verification** that unused characters set to "FF".

Field 5 (Manufacturer's Software Version Code) = "342E33372E3441FF" = "4.37.4A" => **Requires Verification** that unused characters set to "FF".

Field 7 (Certification Level) = 0

Field 8 (Load Equivalency) = 1 => **Requires Verification**

PGN 126208 Request destination addressed containing the following parameters sent

Field 1 - Complex Request Group Function Code = 0 (Request group function)

Field 2 - Requested PGN = 126996

Field 3 - Transmission Interval = 4294967295 (FFFFFFFF₁₆)

Field 4 - Transmission interval offset = 65535 (FFFF₁₆)

Field 5 - Number of Pairs of Request Parameters to follow = 1

Field 6 - Field number of first parameter = 1 (field 1 from 126464)

Field 7 - Value of first parameter = ##### (NMEA 2000 Version + 1 from 126996 returned above)
PGN 126996 received*
PGN 126208 Request destination addressed containing the following parameters sent
Field 1 - Complex Request Group Function Code = 0 (Request group function)
Field 2 - Requested PGN = 126996
Field 3 - Transmission Interval = 4294967295 (FFFFFFFF₁₆)
Field 4 - Transmission interval offset = 65535 (FFFF₁₆)
Field 5 - Number of Pairs of Request Parameters to follow = 1
Field 6 - Field number of first parameter = 1 (field 1 from 126464)
Field 7 - Value of first parameter = ##### (NMEA 2000 Version from 126996 returned above)
PGN 126996 received.

End replacement C.3.18.2.1

Replace the text in section C.6.17.2.1 with the following (changes are highlighted in yellow).

Begin replacement of C.6.17.2.1

C.1.1.1.1 Example text:

The text in this section shows two of many possible outcomes. The first example text shows the results when the DUT passes the test. The second example shows that the DUT failed the test by not properly detecting a non-matching NMEA version request parameter value. Other results may be possible and should be similarly documented.

Test 6.17 Product Information [8.3.2.1] - Mandatory – PASSED

Method 6.17.1: PGN 059904 ISO Request requesting PGN 126996 sent bus 1
PGN 059904 ISO Request requesting PGN 126996 sent bus 2
PGN 126996 received bus 1 DLC 15
PGN 126996 received bus 2 DLC 15
Field 1 (NMEA 2000 Database Version) = 1000 => **Requires Verification**
Field 2 (NMEA Manufacturer's Product Code) = 127
Field 3 (Manufacturer's Model ID) = "4D6F64656C2031FF" =
"Model 1" => **Requires Verification** that unused characters set to "FF".

Field 4(Manufacturer's Software Version Code) = "342E33372E3441FF" = "4.37.4A" => **Requires Verification** that unused characters set to "FF".

Field 5(Manufacturer's Software Version Code) = "342E33372E3441FF" = "4.37.4A" => **Requires Verification** that unused characters set to "FF".

Field 7 (Certification Level) = 2

Field 8 (Load Equivalency) = 1 => **Requires Verification**

PGN 126208 Request destination addressed containing the following parameters sent bus 2

PGN 126208 Request destination addressed containing the following parameters sent bus 1

Field 1 - Complex Request Group Function Code = 0 (Request group function)

Field 2 - Requested PGN = 126996

Field 3 - Transmission Interval = 4294967295 (FFFFFFFF₁₆)

Field 4 - Transmission interval offset = 65535 (FFFF₁₆)

Field 5 - Number of Pairs of Request Parameters to follow = 1

Field 6 - Field number of first parameter = 1 (field 1 from 126464)

Field 7 - Value of first parameter = ##### (NMEA 2000 Version + 1 from 126996 returned above)

PGN 126208 acknowledgment received bus 1 DLC 12

PGN 126208 acknowledgment received bus 2 DLC 12

PGN error code = 0 (Value from field 2 of response)

PGN of message being acknowledged = 126996

Priority error code = 0 (Value from field 4 of response)

Parameter error code = 3 (Value from field 6 of response)

PGN 126208 Request destination addressed containing the following parameters sent bus 1

PGN 126208 Request destination addressed containing the following parameters sent bus 2

Field 1 - Complex Request Group Function Code = 0 (Request group function)

Field 2 - Requested PGN = 126996

Field 3 - Transmission Interval = 4294967295 (FFFFFFFF₁₆)

Field 4 - Transmission interval offset = 65535 (FFFF₁₆)

Field 5 - Number of Pairs of Request Parameters to follow = 1

Field 6 - Field number of first parameter = 1 (field 1 from 126464)

Field 7 - Value of first parameter = ##### (NMEA 2000 Version from 126996 returned above)

PGN 126996 received bus 2 DLC 9

PGN 126996 received bus 1 DLC 9

Or

Test 6.17 Product Information [8.3.2.1] - Mandatory – FAILED*

Method 6.17.1: PGN 059904 ISO Request requesting PGN 126996 sent bus 1
 PGN 059904 ISO Request requesting PGN 126996 sent bus 2
 PGN 126996 received bus 1 DLC 15
 PGN 126996 received bus 2 DLC 15
 Field 1 (NMEA 2000 Database Version) = 1000 => **Requires Verification**
 Field 2 (NMEA Manufacturer's Product Code) = 127
 Field 3 (Manufacturer's Model ID) = "4D6F64656C2031FF" = "Model 1" => **Requires Verification** that unused characters set to "FF".
 Field 4 (Manufacturer's Software Version Code) = "342E33372E3441FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF" = "4.37.4A" => **Requires Verification** that unused characters set to "FF".
 Field 5 (Manufacturer's Software Version Code) = "342E33372E3441FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF" = "4.37.4A" => **Requires Verification** that unused characters set to "FF".
 Field 7 (Certification Level) = 2
 Field 8 (Load Equivalency) = 1 => **Requires Verification**
 PGN 126208 Request destination addressed containing the following parameters sent bus 2
 PGN 126208 Request destination addressed containing the following parameters sent bus 1
 Field 1 - Complex Request Group Function Code = 0 (Request group function)
 Field 2 - Requested PGN = 126996
 Field 3 - Transmission Interval = 4294967295 (FFFFFFFF₁₆)
 Field 4 - Transmission interval offset = 65535 (FFFF₁₆)
 Field 5 - Number of Pairs of Request Parameters to follow = 1
 Field 6 - Field number of first parameter = 1 (field 1 from 126464)
 Field 7 - Value of first parameter = ##### (NMEA 2000 Version + 1 from 126996 returned above)
 PGN 126996 received bus 1 DLC 9*
 PGN 126996 received bus 2 DLC 9*
 PGN 126208 Request destination addressed containing the following parameters sent bus 1
 PGN 126208 Request destination addressed containing the following parameters sent bus 2
 Field 1 - Complex Request Group Function Code = 0 (Request group function)
 Field 2 - Requested PGN = 126996
 Field 3 - Transmission Interval = 4294967295 (FFFFFFFF₁₆)
 Field 4 - Transmission interval offset = 65535 (FFFF₁₆)
 Field 5 - Number of Pairs of Request Parameters to follow = 1
 Field 6 - Field number of first parameter = 1 (field 1 from 126464)
 Field 7 - Value of first parameter = ##### (NMEA 2000 Version from 126996 returned above)

PGN 126996 received bus 2 DLC 10
PGN 126996 received bus 1 DLC 10

End replacement C.6.17.2.1

Change to the NMEA 2000 Appendix B

Replace the Data Format Notes as follows (New text is highlighted):

<i>DF #</i>	<i>DF Description</i>	<i>Range</i>	<i>Resolution</i>	<i>Type</i>	<i>Data Format Notes</i>
DF63	String, fixed	0 to 1,785 characters	1 char	char8(n)	0 to 1,785 bytes. Character count not included, length is specified by application in Data Dictionary. Unused characters shall be treated as “not available”, and filled with [0xFF] = Data not available.”