



LOCOMOTIVE DECODER QUESTIONNAIRE

By Ken West
NMRA Command Control Working Group

Introduction

The purpose of this questionnaire is to gather essential information about a DCC locomotive decoder as part of the conformance process. This questionnaire will be kept on file by the NMRA as part of the conformance test submission.

All applications for a decoder conformance seal must be accompanied by the following:

- A. A decoder for which conformance is to be tested.
- B. A complete set of user documentation.
- C. Any special instructions for connecting the decoder to the test jig as described in NMRA DCC Decoder Test User Manual.
- D. Certification that the attached test procedures have been successfully completed by the manufacture prior to submission for formal conformance testing.
- E. The manufacture must provide evidence that the decoder complies with the FCC Part 15 rules. Please attach a copy of the FCC report.
- F. A completed LOCOMOTIVE DECODER QUESTIONNAIRE for the decoder to be tested.

Basic Information

Please fill in the following information on the decoder manufacturer.

Company Name: _____
 Address1: _____
 Address2: _____
 City: _____
 State/Province: _____
 Country: _____
 Postal Code: _____
 Voice Phone: _____
 FAX Phone: _____
 E-MAIL Address: _____
 WEB Page: _____
 Manufacturer ID Code: _____

Please fill in the name of the person to contact concerning conformance matters.

Last Name: _____
 First Name: _____
 Middle Initial: _____

Please fill in the following information about the decoder submitted for testing.

Model Number: _____
 Serial Number: _____
 Hardware Revision: _____
 Firmware Revision: _____
 Manufacturer Date: _____
 Minimum Peak To Peak Operating Voltage: _____
 Maximum Peak To Peak Operating Voltage: _____
 Maximum Motor Current: _____
 Special Considerations For Motor Output: _____
 Number Of Function Outputs: _____
 Special Consideration For Function Outputs: _____

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Standards

This section gives any special information that relates to the DCC standards. A decoder must meet all aspects of these standards to receive the conformance seal.

S9.1

Are there any special considerations for part A: Technique For Encoding Bits?

Four horizontal lines for handwritten input.

Are there any special considerations for part B: Command Control Signal Shape?

Four horizontal lines for handwritten input.

Does the decoder meet the applicable United States Federal Communications Commission electro-magnetic interference requirements described in part B: Command Control Signal Shape? If so, please attach a copy of the relevant certification.

Four horizontal lines for handwritten input.

Are there any special considerations for part C: Power Transmission and Voltage Limits For Transmitting Power Through the Rails?

Four horizontal lines for handwritten input.

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S9.2

Are there any special considerations for packet sequences? For example, will the decoder reject an immediate change of direction without an intermediate stop packet?

Are there any special considerations for part **A: General Packet Format**?

Are there any special considerations for part **B: Baseline Packets**?

Are there any special considerations for part **C: Frequency Of Packet Transmission**?

Recommended Practices

This section gives any special information that relates to the DCC recommended practices. Implementation of the features described in the following recommended practices is optional. However, the decoder must implement these optional features in conformance with the recommended practice in order to receive the conformance seal.

RP9.1.1

Does the decoder support the color code described in part **B: Color Code of Wiring**?

If so, please list any additional wires, their color, and function.

If not, please list all wires, their color, and function.

Does the decoder support the connector described in part **C: Interface Electromechanical Specifications**.

If so, which size of connector (Small, Medium, Large) does the decoder support?

If so, are there any special considerations for part **C: Interface Electromechanical Specifications**.

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RP9.2.1

This section deals with special information dealing with the optional extended packet formats. Please indicate if you support each format and, if so, any special considerations for the format.

Are there any special considerations for part **A: Address Partitions**?

Does the decoder support 14 bit addresses as well as 7 bit addresses?

Does the decoder support part **B: Broadcast Command For Multi-function Digital Decoders**?
If so, are there any special considerations?

RP9.2.1 Commands Supported

The following table lists the possible RP9.2.1 extended packet commands. Please check the "Supported?" box for all RP9.2.1 commands supported by the decoder. Use the "Notes?" box for any special considerations associated with the command.

Table 1: RP9.2.1 Commands Supported

Command	Description	Supported?	Notes?
0000CCCD	Decoder Control		
0001CCCC	Consist Control		
00111111	128 Speed Step Mode		
010DDDDD 011DDDDD	28 Speed Step Mode		
100DDDDD	Function Group 1		
1011DDDD	Function Group 2		
11110010	Short Form Acceleration		
11110011	Short Form Deceleration		
111001AA	Long Form Verify		
111011AA	Long Form Write		
111010AA	Long Form Bit Manipulation		

Nonstandard Commands Supported

The following table lists the possible nonstandard extended packet commands. Please describe the

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command in the "Description" box. Use the "Notes?" box for any special considerations associated with the command.

Table 2: Nonstandard Commands Supported

Command	Description	Notes?

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RP9.2.2

This section deals with special information dealing with the optional configuration variables.

RP9.2.2 Configuration Variables Supported

The following table lists the possible RP9.2.2 configuration variables. Please check the “Supported?” box for all RP9.2.2 configuration variables supported by the decoder. Use the “Notes?” box for any special considerations associated with the configuration variable.

Table 3: RP9.2.2 Configuration Variables Supported

CV	Bit	Description	Supported?	Notes?
1	-	Primary Address		
2	-	Vstart		
3	-	Acceleration Rate		
4	-	Deceleration Rate		
5	-	Vhigh		
6	-	Vmid		
7	-	Manuf. Version No.		
8	-	Manuf. ID		
9	-	Total PWM Period		
10	-	EMF Feedback Cutout		
11	-	Packet Time-Out Value		
12	-	Power Source Conversion		
13	-	Analog Mode Function Status		
17+18	-	Extended Address		
19	-	Consist Address		
21	-	Consist Addr. Active for F1-F8		
22	-	Consist Addr. Active for FL		
23	-	Acceleration Adjustment		
24	-	Deceleration Adjustment		
25	-	Cab Speed Step		
29	0	Locomotive Direction		
29	1	FL Location		
29	2	Power Source Conversion		
29	3	Advanced Acknowledgment		
29	4	Speed Table		

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CV	Bit	Description	Supported?	Notes?
29	5	Extended Addressing		
29	7	Accessory Decoder		
30	-	Error Information		
33-42	-	Function Output Locations		
65	-	Kick Start		
66	-	Forward Trim		
67-94	-	Speed Table		
95	-	Reverse Trim		
105	-	User Identifier #1		
106	-	User Identifier #2		

Manufacturer Specific Configuration Variables Supported

The following table lists the possible manufacturer specific configuration variables. Please describe the configuration variable in the "Description" box. Use the "Notes?" box for any special considerations associated with the configuration variable.

Table 4: Manufacturer Specific Configuration Variables Supported

CV	Bit	Description	Notes?

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RP9.2.3

This section deals with special information dealing with the optional service mode commands. Please indicate if you support each format and, if so, any special considerations for the format.

Are there any special considerations for part **B: Service Mode Environment**?

Are there any special considerations for part **C: Entry to and Exit from Service Mode**?

Does the decoder support the **Basic Acknowledgment Mechanism** of part **D**? If so, are there any special considerations?

Does the decoder support the **Advanced Acknowledgment Mechanism** of part **D**? If so, are there any special considerations?

Does the decoder support part **E: Service Mode Instruction Packets for Direct Mode**? If so, are there any special considerations?

Does the decoder support part **E: Service Mode Instructions for Address-Only Mode**? If so, are there any special considerations?

Does the decoder support part **E: Service Mode Instruction Packets for Physical Register Addressing**? If so, are there any special considerations?

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If **Physical Register Addressing** is supported, which of the fundamental 8 registers can be accessed?

Does the decoder support part **E: Service Mode Instruction Packets for Paged CV Addressing?** If so, are there any special considerations?

Does the decoder support **Appendix A: Address Query Instruction?** If so, are there any special considerations?

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RP9.2.4

This section deals with special information dealing with the optional fail-safe characteristics. Please indicate if you support each characteristic and, if so, any special considerations for the format.

Does the decoder support part **A: Initialization of the DCC system?** If so, are there any special considerations?

Does the decoder support part **B: Converting Between Different Power Modes?** If so, are there any special considerations?

Does the decoder support part **C: Occurrence of Error Conditions?** If so, are there any special considerations?
