# Dynamic Message Sign (DMS) – Site Test

This test will confirm that the equipment at the site is fully operational, per manufacturer’s specifications, prior to network connectivity.

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| **DMS: General Information** | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | |
| Project Number: | | | | |  | Project Name: | | | | | |  | |
| Project Stationing: | | | | |  | Date of Test: | | | |  | | | |
| Device Name: | | |  | | | Manufacturer: | | | | |  | | |
| Serial #: |  | | | | | Model #: |  | | | | | | |
| Username (If Required): | |  | | | | Password (If Required): | | | | | | |  |
| Communication Method: | | | |  | | IP Address: | |  | | | | | |
| Subnet Mask: | |  | | | | Inspector: | | |  | | | | |

## DMS: General Information

## DMS: General Requirements

| **DMS: General Requirements** | | |
| --- | --- | --- |
| **Requirement** | **Pass Fail** | **Notes** |
| Verify location of DMS installation is as per the plans.  Structure offset from edge of travel lane: \_\_\_\_\_\_\_\_\_\_\_  Latitude:\_\_\_\_\_\_\_\_\_\_\_\_\_ Longitude:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |  |
| **For overhead signs:** Verify that overhead sign installation provides vertical clearance of not less than 18’-0” over the entire width of the pavement and shoulders. |  | DMS Clearance: |

## DMS: Sign Cabinet

| **DMS: Sign Cabinet** | | |
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| **Requirement** | **Pass Fail** | **Notes** |
| Verify voltage from the panel board main breaker input lugs to neutral and record values for L1 to Neutral. Value should be between 105 VAC and 125 VAC. Enter Value:\_\_\_\_\_\_\_\_\_\_ |  |  |
| Verify voltage from the panel board main breaker input lugs to neutral and record values for L2 to Neutral. Value should be between 105 and 125 VAC. Enter Value:\_\_\_\_\_\_\_\_\_\_ |  |  |
| Verify voltage from the panel board main breaker input lugs to neutral and record values for Neutral to Ground. Value should be less than 10 VAC. Enter Value:\_\_\_\_\_\_\_\_\_\_ |  |  |
| Verify DC voltage on the breaker input in the sign display; value should be 24 VDC +/- 5%. |  |  |

## DMS: Electrical

| **DMS: AC Power – Device Specific** | | |
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| **Requirement** | **Pass Fail** | **Notes** |
| Verify voltage in sign load center is within +/- 5% of 120/240 VAC. |  |  |
| Verify that the manufacturer’s recommended power/communication cable is being used and is of adequate length. |  |  |
| **For overhead signs:** For documentation purposes, record the wattage when the following circuits are operational and fully loaded:   * LED display pixel matrix, with 100% of the pixels operating at their maximum possible drive current. * DMS environmental control system. * Utility outlet circuit. * DMS controller. * Device server (if included). * Media converter (if included). | *Not a pass / fail test* | Record wattage: |
| **For overhead signs:** For documentation purposes, record the wattage when the following circuits are operational and fully loaded:   * LED display pixel matrix, with 25% of the pixels operating at their maximum possible drive current. * DMS controller. | *Not a pass / fail test* | Record wattage: |

## DMS: Operations

| **DMS: Operations** | | |
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| **Requirement** | **Pass Fail** | **Notes** |
| Verify the DMS controller can be powered on/off. |  |  |
| Verify that controller can be connected to laptop and vendor software can access the DMS. |  |  |
| Verify that the controller correctly identifies the address of the controller, its ID, current time, and date. |  |  |
| Verify operation of every pixel, including uniform brightness at all brightness levels and proper electrical current consumption. (There shall be zero pixel outages.) |  |  |
| Verify that display modules are properly wired by displaying a text message that identifies the module’s correct row and column position. |  |  |
| Verify proper installation and aiming of display modules. |  |  |
| Verify proper display of all test messages, patterns, and graphics in controller memory. |  |  |
| Verify that a new local message can be created, stored in memory, and recalled for display. |  |  |
| Verify that sign can be blanked out. |  |  |
| Verify that brightness can be manually adjusted from controller. |  |  |
| Verify that brightness can be set to “Auto” in controller and test operation of photo sensors. |  |  |
| Verify correct wiring of alarms and sensors to the controller’s input. |  |  |
| Verify that all diagnostic routines can be successfully performed. |  |  |
| Verify operation of sign monitoring through the controller. |  |  |

Overall DMS Site Test: 🞏 Pass 🞏 Fail

Inspector Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Organization: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_

Witness Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Organization: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_

Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

# Dynamic Message Sign (DMS) – Communication & Systems Test

This test will confirm that the equipment at the site is fully operational utilizing New Hampshire’s Advanced Transportation Management System (ATMS) at the NHDOT TMC.

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| **DMS: General Information** | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | |
| Project Number: | | | | |  | Project Name: | | | | | |  | |
| Project Stationing: | | | | |  | Date of Test: | | | |  | | | |
| Device Name: | | |  | | | Manufacturer: | | | | |  | | |
| Serial #: |  | | | | | Model #: |  | | | | | | |
| Username (If Required): | |  | | | | Password (If Required): | | | | | | |  |
| Communication Method: | | | |  | | IP Address: | |  | | | | | |
| Subnet Mask: | |  | | | | Inspector: | | |  | | | | |

| **DMS: Prerequisites\*** | | |
| --- | --- | --- |
| **Requirement** | **Pass Fail** | **Notes** |
| Contractor has coordinated with the TMC, and has established connectivity to the DMS and DMS Controller from the TMC. |  |  |
| Contractor has verified all device components are configured with supplied IP's, VLANs, configurations, and interface login credentials, and has properly labeled all ports in device web interfaces. |  |  |
| Contractor must be ready, with all necessary parties and preparation, to start the testing at the designated start time. |  |  |

## DMS: Prerequisites

\*-Failure to meet any of the prerequisite requirements shall be grounds for immediate testing termination.

## DMS: Communications

| **DMS: Communications** | | |
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| **Requirement** | **Pass Fail** | **Notes** |
| If wireless communications is utilized, document the signal strength. \_\_\_\_\_\_\_\_\_\_\_\_dB |  |  |
| Verify communications to the sign (Ping). |  |  |
| Verify sign status appears on New Hampshire’s ATMS. |  |  |
| Generate a manual communications failure at the DMS controller, and verify both ATMS and manufacturer software display the error. Verify the appropriate message appears once communications have been restored. |  |  |

## DMS: Central Control

| **DMS: Central Control** | | |
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| **Requirement** | **Pass Fail** | **Notes** |
| Perform a full diagnostic scan in ATMS and manufacturer software, and confirm no errors shown. |  |  |
| Disconnect power to the device, and verify a power supply error is displayed in ATMS and/or manufacturer software. Verify the error no longer exists after power is restored. |  |  |
| Disconnect a pixel module and verify a pixel error is displayed in ATMS and/or manufacturer software. |  |  |
| Disconnect the photocell and verify a photocell error is displayed in ATMS and/or manufacturer software. |  |  |
| Open the cabinet door and verify an intrusion alarm is displayed in ATMS and/or manufacturer software. |  |  |
| Send a static test message (graphics and text) to the DMS. Once properly displayed, terminate the message. |  |  |
| Send a multi-phase test message to the DMS. Once properly displayed, terminate the message. |  |  |
| Send a scheduled, multi-phase test message to the DMS. Once properly displayed, terminate the message. |  |  |
| Send a low-priority test message to the DMS. Send a higher priority test message and verify the higher priority message is displayed. Once properly displayed, terminate the higher priority message and verify the lower priority message is displayed. Terminate both messages. |  |  |
| Send a static test message to the DMS. Terminate power to the controller and DMS for 5 minutes. Verify that the previous message is displayed after power is restored. Terminate the message. |  |  |
| Set the controller to the local setting. Send a static test message from ATMS to the DMS. Verify that the message does not display. |  |  |
| Log into all site device component web interfaces. Verify no errors reported in the software or in web interfaces. Verify web interfaces display all information needed for remote monitoring of device status. Verify all ports are properly addressed and labeled in interfaces. |  |  |

Overall DMS System Test: 🞏 Pass 🞏 Fail

Inspector Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Organization: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_

Witness Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Organization: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_

Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_