



**LIMITED ENERGY
TESTING LAB**

Mecho iQ2-DC Core Node Test

Ecosystem Integration Test (EIT)

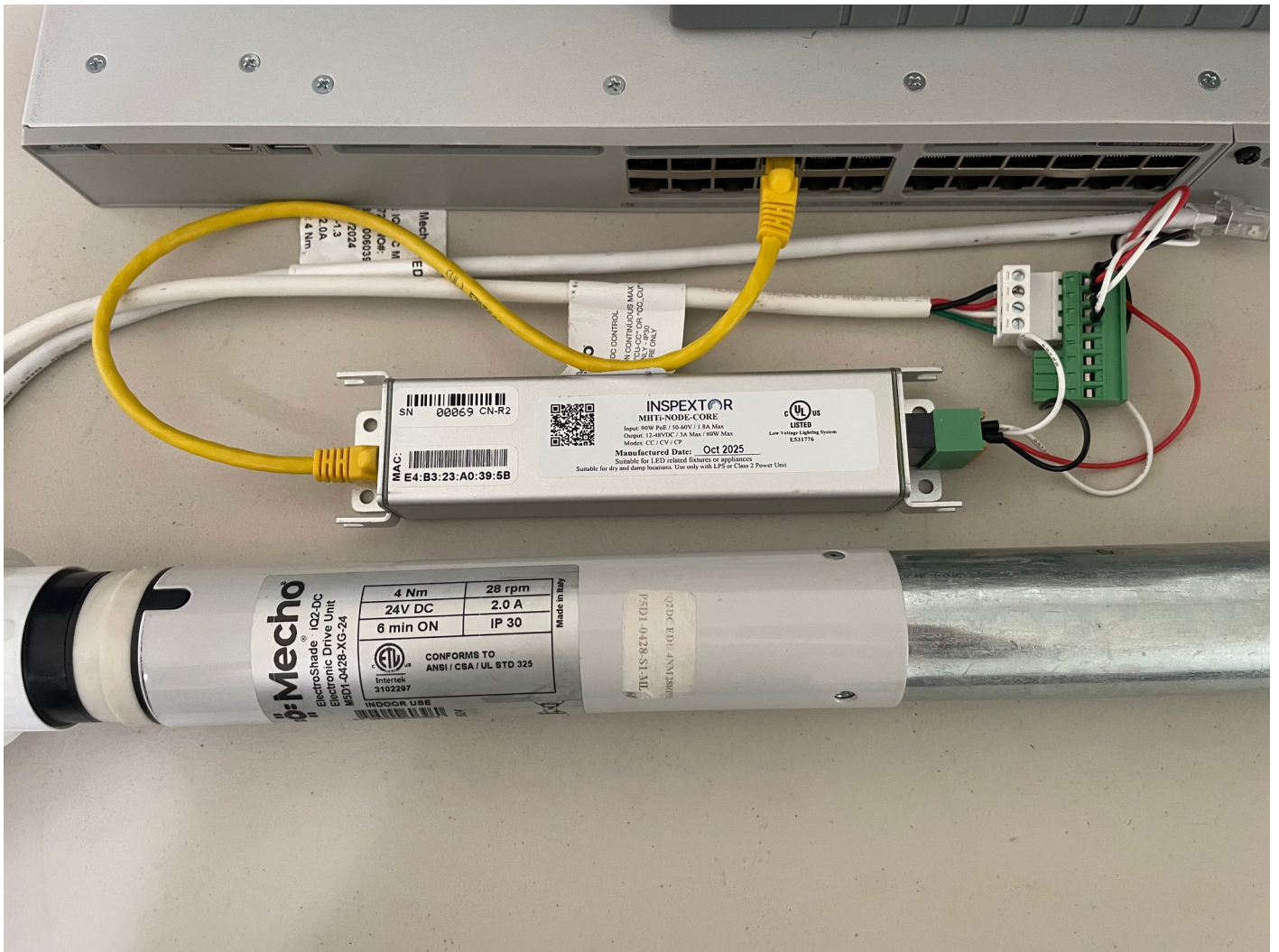
- Date: 2026-03-16
- Objective: Demonstrate compatibility between Cisco 9300, MHT Core Node, and Mecho iQ2-DC shade motor

Device Under Test

- Model: IQ2-DC
- Voltage: 26.7V
- Current: 2A
- Power: 53.4W
- Id: 3729

Supporting Equipment

- PoE Node: MHT Inspextor Core Node
- Hostname: inx-a0395b
- Firmware: 2.29.0 (Gateway) 2.18.0 (Driver)
- PoE Switch: Cisco Catalyst 9300 24H



Node Configuration

- Use the shade resource to configure a Mecho RS-485 shade
- Use the actuator to power the shade 26.7V 2A
- Configure the actuator pwm_mode ALWAYS_ON so that dimming is disabled
- Note that the shade should be disconnected from the node during actuator configuration to avoid accidental overvoltage.

Wiring

- Connect
 - Mecho - to Gnd on Node
 - Mecho + to Out on Node
 - Mecho A to A+ on Node

- Mecho B to B- on Node

Results

- [x] Verify Firmware Version: "version":"2.29.0" gateway, "version":"2.18.0" driver

```
curl -k -X GET \  
https://inx-a0395b.local/inx/version
```

```
{  
  "name": "mini_node_gateway",  
  "hw_rev": "4",  
  "version": "2.29.0",  
  "date": "Mar 16 2026",  
  "time": "12:28:52",  
  "idf_version": "v5.2.5-dirty",  
  "chip_model": "ESP32-C6",  
  "chip_features": "/802.11bgn/BLE/802.15.4/External-Flash:4 MB\r\n",  
  "chip_revision_number": "1"  
}
```

```
curl -k -X GET \  
https://inx-a0395b.local/inx/drivers/0/version
```

```
{  
  "name": "mini_node_driver_48V",  
  "version": "2.18.0",  
  "date": "Mar_16_2026",  
  "time": "12:07:19",  
  "idf": "v5.2.5-dirty",  
  "chip": "ESP32-C6",  
  "features": "/802.11bgn/BLE/802.15.4/External-Flash:4MB",  
  "rev": "0"  
}
```

- [x] Configure node actuator - shade disconnected

Make sure the shade is not connected to the node until it is properly configured. Since the node actuator output is programmable it might be initially set to a higher voltage like 40V. This could damage the shade motor. So, verify the voltage output before connecting the shade.

```
curl -k -X POST \  
  -H "Content-Type: application/json" \  
  -d '{"cv": 26700, "cc": 2000, "cp": 540, "pwm_mode": "ALWAYS_ON"}' \  
  https://inx-a0395b.local/inx/actuators/actuator1
```

- [x] Verify node actuator configuration: "pwm_mode": "ALWAYS_ON", "voltage": 26112

A 0.5V voltage is typical. Increase the cv value if this is critical.

```
curl -k -X GET \  
  https://inx-a0395b.local/inx/actuators/actuator1
```

```
{  
  "prphtag": "0",  
  "cluster": "group1",  
  "fadetime": 2000,  
  "pwm_mode": "ALWAYS_ON",  
  "motion_enable": "false",  
  "motdsbl": "3",  
  "open_circuit_detect_enable": "false",  
  "short_circuit_detect_enable": "false",  
  "dim": 50,  
  "pp": 50,  
  "dim_min": 2,  
  "cc": 2000,  
  "cv": 26700,  
  "cp": 540,  
  "rgbw": 4294967295,  
  "at": 3000,  
  "em_mode": "false",  
  "em_time": 10,  
  "battery_enable": "false",  
  "010V_enable": "false",  
  "current": 0,
```

```
"voltage": 26112,  
"power": 0  
}
```

- [x] Configure shade resource: "type": "mecho_rs485", "mecho_coaphost": "192.168.1.168"

Simply set the shade type to "mecho_rs485". And set the mecho coaphost to the Mecho server as required.

```
curl -k -X POST \  
-H "Content-Type: application/json" \  
-d '{"type": "mecho_rs485", "mecho_coaphost": "192.168.1.168"}' \  
https://inx-a0395b.local/inx/shades/0
```

- [x] Verify node actuator configuration: "type": "mecho_rs485", "mecho_coaphost": "192.168.1.168"

```
curl -k -X GET \  
https://inx-a0395b.local/inx/shades/0
```

```
{  
  "name": "shade0",  
  "channel": 1,  
  "type": "mecho_rs485",  
  "cluster": "group1",  
  "position": 0,  
  "position_duration_minutes": -1,  
  "position_duration_seconds": 0,  
  "position_final": 0,  
  "somfy_hostname": "none",  
  "somfy_pin_code": "none",  
  "somfy_cookie": "none",  
  "somfy_id": 1,  
  "somfy_position": 0,  
  "somfy_found": "false",  
  "mecho_coaphost": "192.168.1.168",  
  "mecho_uid": 0,  
  "mecho_position": 0,  
}
```

```
"mecho_found": "false",
"somfy_rs485_id": 0,
"somfy_rs485_position": 0,
"somfy_rs485_found": "false"
}
```

- [x] Verify Mecho Shade Discovery - "mecho_uid": 3729, "mecho_found": "true"

Be sure to power off, connect shade, then power on. Do not hot plug or unplug the shade motor to avoid damage.

```
curl -k -X GET \
https://inx-a0395b.local/inx/shades/0
```

```
{
  "name": "shade0",
  "channel": 1,
  "type": "mecho_rs485",
  "cluster": "group1",
  "position": 0,
  "position_duration_minutes": -1,
  "position_duration_seconds": 0,
  "position_final": 0,
  "somfy_hostname": "none",
  "somfy_pin_code": "none",
  "somfy_cookie": "none",
  "somfy_id": 1,
  "somfy_position": 0,
  "somfy_found": "false",
  "mecho_coaphost": "192.168.1.168",
  "mecho_uid": 3729,
  "mecho_position": 0,
  "mecho_found": "true",
  "somfy_rs485_id": 0,
  "somfy_rs485_position": 0,
  "somfy_rs485_found": "false"
}
```

- [x] Move shade position: "position": 50

The set point shade position is a value between 0-100%. For demonstration set it at half travel at 50%.

```
curl -k -X POST \  
  -H "Content-Type: application/json" \  
  -d '{"position": 50}' \  
  https://inx-a0395b.local/inx/shades/0
```

- [x] Verify shade position: "mecho_position": 49

Note that a +/-1% error reading back the Mecho position appears to be typical.

```
curl -k -X GET \  
  https://inx-a0395b.local/inx/shades/0
```

```
{  
  "name": "shade0",  
  "channel": 1,  
  "type": "mecho_rs485",  
  "cluster": "group1",  
  "position": 50,  
  "position_duration_minutes": -1,  
  "position_duration_seconds": 0,  
  "position_final": 0,  
  "somfy_hostname": "none",  
  "somfy_pin_code": "none",  
  "somfy_cookie": "none",  
  "somfy_id": 1,  
  "somfy_position": 0,  
  "somfy_found": "false",  
  "mecho_coaphost": "192.168.1.168",  
  "mecho_uid": 3729,  
  "mecho_position": 49,  
  "mecho_found": "true",  
  "somfy_rs485_id": 0,  
  "somfy_rs485_position": 0,
```

```
"somfy_rs485_found": "false"  
}
```

Conclusion

The compatibility test between the Cisco Catalyst 9300 24H PoE switch, MHT Inspextor Core Node, and Mecho iQ2-DC shade motor (26.7V, 2A, ID: 3729) was **successful**. All test objectives were completed and verified:

Configuration Verification: - Node firmware version 2.29.0 was confirmed on the MHT Inspextor Core Node (inx-a0395b) - The actuator was successfully configured for 26.7V, 2A current limit, and `pwm_mode: ALWAYS_ON` (dimming disabled) with the shade disconnected, avoiding overvoltage risk - Output voltage was verified at approximately 26.1V (within expected range for 26.7V nominal; ~0.5V drop is typical)

Shade Resource & Discovery: - The shade resource was configured as `mecho_rs485` with `mecho_coaphost` set to the Mecho server (192.168.1.168) - Mecho shade discovery successfully identified the motor (UID: 3729, `mecho_found: true`) after power cycle and proper wiring

Motor Control: - Position control was confirmed: shade commanded to 50% position; reported `mecho_position: 49` (a $\pm 1\%$ readback error is typical for Mecho)

Result: The system demonstrates full compatibility and is ready for deployment. The MHT Inspextor Core Node successfully integrates with the Mecho iQ2-DC motor over the Cisco 9300 PoE infrastructure, providing reliable RS-485 shade control when powered and configured per the test procedure (including safe actuator configuration before connecting the shade).