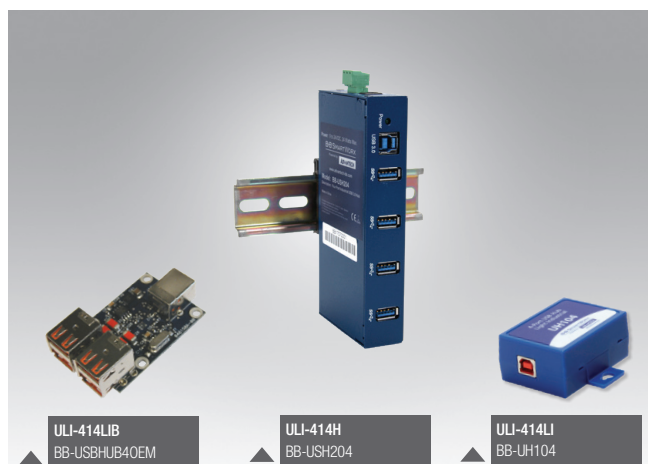


ULI-414LIB
ULI-414LI
ULI-414I
ULI-417I
ULI-414CI
ULI-417CI
ULI-414H
ULI-417H

BB-USBHUB40EM
BB-UH104
BB-UHR204
BB-UHR207
BB-UHR304
BB-UHR307
BB-USH204
BB-USH207

Industrial USB 2.0 & 3.0 Hubs



Features (model dependent)

- Expand one USB port to 4 or 7 USB ports
- USB 2.0 & USB 3.0
- ESD protection
- High retention USB connectors grip cables tight
- Wide operating temperature (USB 2.0 hubs)
- USB host port power or external PSU power
- Metal or plastic enclosures – desk, panel, DIN rail mount
- 4 kV isolation between upstream & downstream ports (models ULI-414CI, ULI-417CI)
- Compact, OEM open bare-board hub (model ULI-414LIB)

Introduction

These Advantech USB 2.0 and 3.0 hubs are more robust than office-grade hubs. Isolation and ESD protections are ideal for electrically harsh environments. "High Retention" USB connectors hold standard USB cables tight – requiring up to 1.54 kg (3.4 lb) force to disconnect them. Model ULI-414LIB is suitable for OEM applications where space is limited and/or external packaging is not required. ULI-414H and ULI-417H feature SuperSpeed USB 3.0 with data rates up to 5 Gbps and 900 mA downstream power to connected peripherals.

Specifications

USB Technology

| Model #: | Upstream Port: | Downstream Ports: | Data Rate, each port: | Standards: |
|-----------------------|--------------------------------------|--------------------------------------|--------------------------|-----------------------------------------------------|
| ULI-414LIB* | (1) High retention, Type B female | (4) High retention, Type A female | 1.5, 12, 480 Mbps | 2.0, 1.1 (backward compatible) |
| ULI-414LI | | (4) High retention, Type A female | | |
| ULI-414I | | (4) High retention, Type A female | | |
| ULI-417I | | (7) High retention, Type A female | 12 Mbps** + | |
| ULI-414CI | | (4) High retention, Type A female | | |
| ULI-417CI | (1) Type B | (7) High retention, Type A female | Up to 5 Gbps | SuperSpeed 3.0 (2.0, 1.1 backward compatible) |
| ULI-414H [#] | | (4) Type A | | |
| ULI-417H [#] | | (7) Type A | | |

* When installed, ULI-414LIB appears as an unbranded USB hub.

** Isolation limits speed to 12 Mbps. (ULI, 414CI, ULI417CI)

+ Multi-transaction translator, 1 per port. (ULI, 414CI, ULI417CI)

† Supports xHCI USB controller. (ULI-414H, ULI-417H)

Isolation & ESD Protections

| Model #: | Isolation: | ESD Protection: | Surge Protection: |
|------------|------------|------------------------|-------------------------------------------|
| ULI-414LIB | — | 15 kV air, 8kV contact | ± 0.5 kV DC ports, ± 1 kV signal ports |
| ULI-414LI | | | |
| ULI-414I | | | |
| ULI-417I | | | |
| ULI-414CI | 4 kV | | |
| ULI-417CI | | | |
| ULI-414H | — | 8 kV air | 600 W |
| ULI-417H | | | |

Environmental

| Model #: | Operating Temperature: | Storage Temperature: | Relative Humidity: |
|------------|-------------------------------------------------------|----------------------|------------------------------|
| ULI-414LIB | -40 to +80 °C | -40 to +85 °C | 0 to +95%, non-condensing |
| ULI-414LI | | | |
| ULI-414I | | | |
| ULI-417I | | | |
| ULI-414CI | -40 to +80 °C (0 to +40 °C using wall plug PSU) | -20 to +50 °C | 0 to +85%, non-condensing |
| ULI-417CI | | | |
| ULI-414H | | | |
| ULI-417H | 0 to +40 °C | | |

Power

| Model #: | Source: | Input Voltage: | Connection: | Consumption: | Downstream per port: |
|------------|---------------------------------------|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|--------------|----------------------|
| ULI-414LIB | USB port† | 5 Vdc | — | 2.5 W, max. | 100 mA |
| ULI-414LI | | | — | | |
| ULI-414I | USB port† <i>OR</i> external PSU | UBS port: 5 Vdc External PSU: 10-30 Vdc | Terminal Block (3 pos., 5.08 mm spacing, 28-12 AWG, solid wire) <i>OR</i> Barrel Jack (locking, threaded, 5.5mm, center positive) | 16 W | 500 mA |
| ULI-417I | | | | 30 W | |
| ULI-414CI | | | | 16 W | |
| ULI-417CI | | | | 30 W | |
| ULI-414H‡ | External PSU (required, not included) | 9-24 Vdc (redundant, TB input) | 3-pin terminal block <i>OR</i> threaded barrel DC power jack | 24 W | 900 mA |
| ULI-417H‡ | | | | 36 W | |

† Check device to ensure USB bus power is adequate. If more power is required, Advantech offers external powered hubs.

‡ Power LED indicator.

Mechanical

| Model #: | Enclosure: | Mounting: | Dimensions, mm: | Weight, gm: | USB Cable: |
|------------|-----------------------------------------|-------------------------|-----------------------|-------------|-----------------|
| ULI-414LIB | Open board | OEM | 34 x 60 x 17 | 22.7 | Not included† |
| ULI-414LI | IP30 Plastic | Panel # | 65 x 61 x 27‡ | 49.9 | |
| ULI-414I | IP30 metal (LEDs for Power, Port Ready) | Desk, DIN rail, panel # | 168.2 x 86.3 x 35.1‡ | 64.0 | Included, 1.8m |
| ULI-417I | | | 233.2 x 119.4 x 35.1‡ | | |
| ULI-414CI | | | 168.2 x 86.3 x 35.1‡ | | |
| ULI-417CI | | | 233.2 x 119.4 x 35.1‡ | | |
| ULI-414H | Industrial grade, metal | DIN rail, panel | 119.4 x 218.6 x 35.0 | 600 | Included, 2.0 m |
| ULI-417H | | | | 620 | |

‡ Mounting kit included.

§ Enclosure with brackets.

† A standard USB cable is required to connect to PC.

Meantime Between Failures (MTBF)

- Calculation Method MIL217F Parts Count Reliability Prediction

| Model #: | Hours: | Model #: | Hours: |
|------------|--------|-----------|--------|
| ULI-414LIB | 552747 | ULI-414CI | 143330 |
| ULI-414LI | | ULI-417CI | 151173 |
| ULI-414I | 190999 | ULI-414H | 588858 |
| ULI-417I | 211773 | ULI-417H | 935103 |

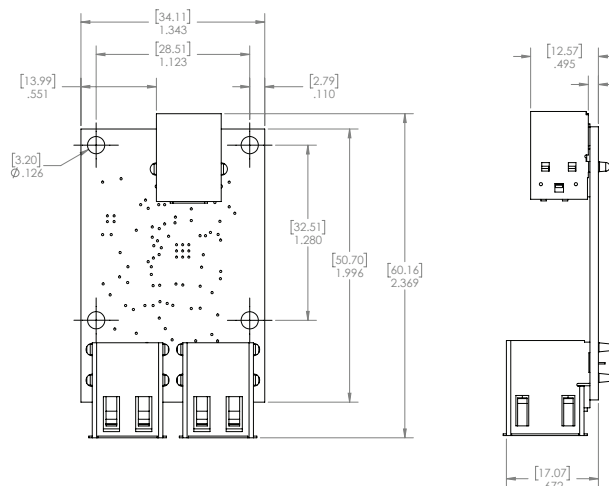
ULI-414LIB **BB-USBHUB40EM**
ULI-414LI **BB-UH104**
ULI-414I **BB-UHR204**
ULI-417I **BB-UHR207**
ULI-414CI **BB-UHR304**
ULI-417CI **BB-UHR307**
ULI-414H **BB-USH204**
ULI-417H **BB-USH207**

Regulatory/Approvals/Certifications

| Model #: | Approvals: | CE Directives: | CE Standards: | Standards - other: |
|------------|----------------------|--------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| ULI-414LIB | FCC | 2014/30/EU – Electromagnetic Compatibility | EMC: EN 55032 Class B – Electromagnetic Compatibility of Multimedia Equipment – Emissions Requirements | EN 61000-6-1 – Generic Immunity Standard for Residential, Commercial and Light-industrial Environments |
| ULI-414LI | | | | |
| ULI-414I | FCC, UL C1/D2 | | | |
| ULI-417I | FCC, KCC, UL C1/D2 | | | |
| ULI-414CI | FCC, UL C1/D2 | | | |
| ULI-417CI | FCC, KCC, UL C1/D2 | 2011/65/EU amended by (EU) 2015/863 – Reduction of Hazardous Substances (RoHS) | EN 55024 – Information Technology Equipment – Immunity Characteristics – Limits and Methods of Measurement | EN 61000-6-1 – Generic Immunity Standard for Residential, Commercial and Light-industrial Environments |
| ULI-414H | FCC Class B, CE, KCC | 2012/19/EU – Waste Electrical and Electronic Equipment (WEEE) | EMC: EN 55032 Class A – Electromagnetic Compatibility of Multimedia Equipment – Emission Requirements | EN 61000-6-3 +A1 – Generic Emissions Standard for Residential, Commercial and Light-industrial Environments (Class B) |
| ULI-417H | | | | |

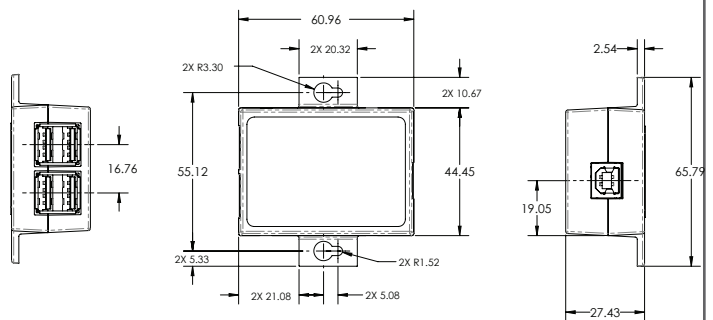
Dimensions - ULI-414LIB

Unit = mm / in



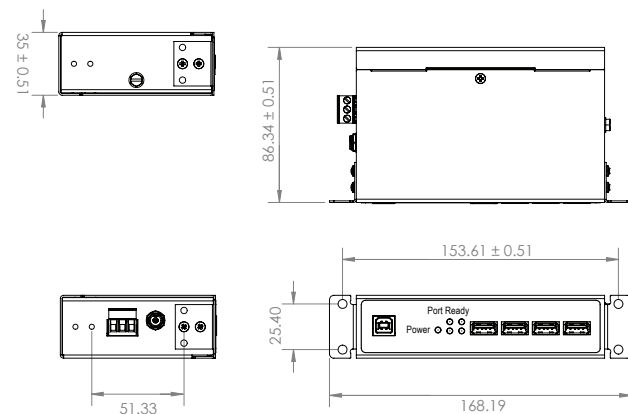
Dimensions - ULI-414LI

Unit = mm



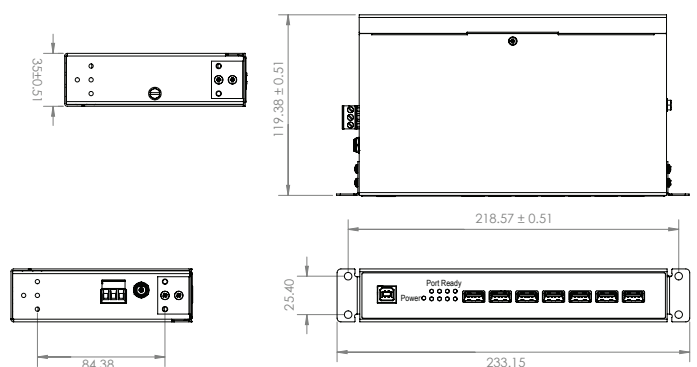
Dimensions - ULI-414I, ULI-414CI

Unit = mm



Dimensions - ULI-417I, ULI-417CI

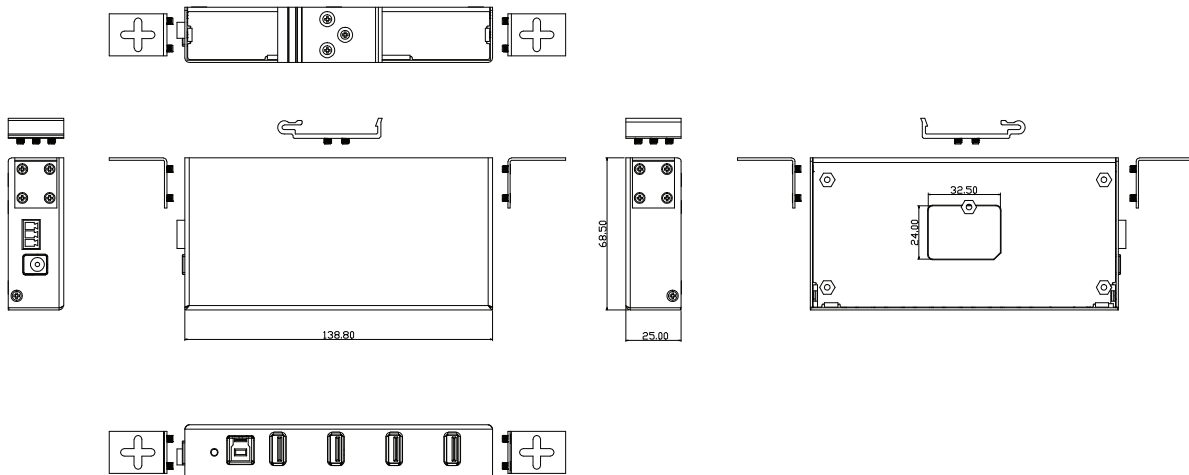
Unit = mm



| | |
|-------------------|----------------------|
| ULI-414LIB | BB-USBHUB40EM |
| ULI-414LI | BB-UH104 |
| ULI-414I | BB-UHR204 |
| ULI-417I | BB-UHR207 |
| ULI-414CI | BB-UHR304 |
| ULI-417CI | BB-UHR307 |
| ULI-414H | BB-USH204 |
| ULI-417H | BB-USH207 |

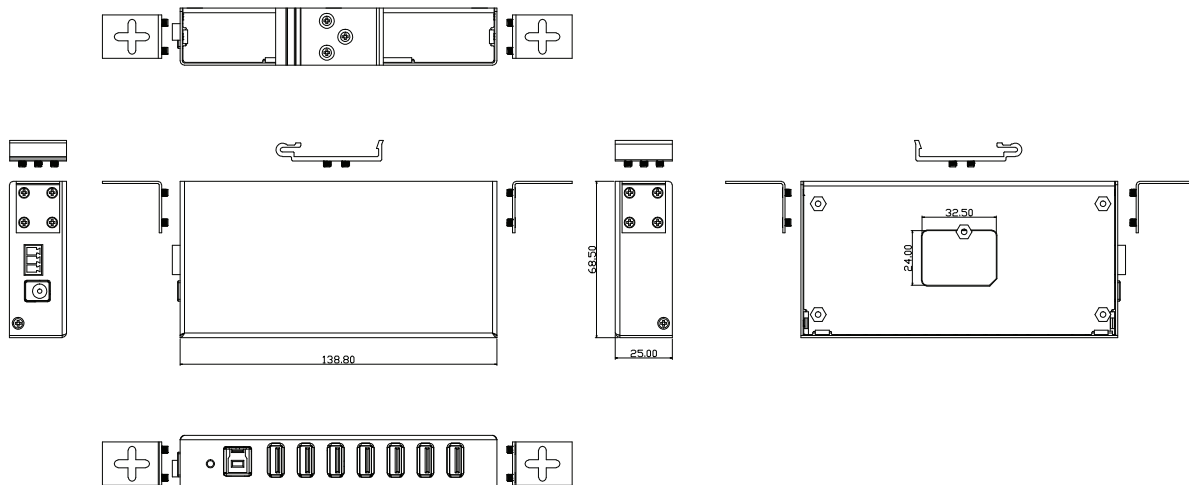
Dimensions - ULI-414H

Unit = mm



Dimensions - ULI-417H

Unit = mm

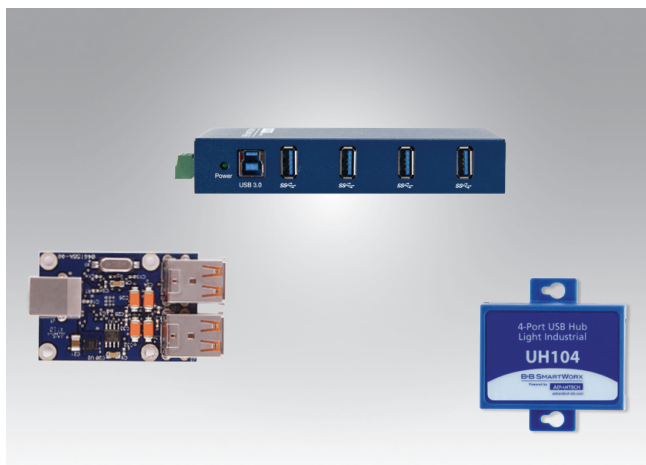


Ordering Information

| Model Number | Part Number to Order | Description |
|-------------------|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ULI-414LIB | BB-USBHUB40EM | Industrial USB 2.0 Hub, 4-port, OEM open board module, High retention USB ports, USB port power. <i>(USB cable required.)</i> |
| ULI-414LI | BB-UH104 | Industrial USB 2.0 Hub, 4-port, High retention USB, USB port power. <i>(USB cable required. Mounting kit included.)</i> |
| ULI-414I | BB-UHR204 | Industrial USB 2.0 Hub, 4-port, High retention USB, USB or PSU power. <i>(1.8m USB cable & mounting kit included; PSU sold separately.)</i> |
| ULI-417I | BB-UHR207 | Industrial USB 2.0 Hub, 7-port, High retention USB, External power. <i>(1.8m USB cable & mounting kit included; PSU sold separately.)</i> |
| ULI-414CI | BB-UHR304 | Industrial USB 2.0 Hub, 4-port, High retention USB, 2kV Isolation, External power. <i>(1.8m USB cable & mounting kit included; PSU sold separately.)</i> |
| ULI-417CI | BB-UHR307 | Industrial USB 2.0 Hub, 7-port, High retention USB, 2kV Isolation, External power. <i>(1.8m USB cable & mounting kit included; PSU sold separately.)</i> |
| ULI-414H | BB-USH204 | Industrial USB 3.0 Hub, 4-port, USB or PSU power. <i>(2m USB cable included; PSU sold separately.)</i> |
| ULI-417H | BB-USH207 | Industrial USB 3.0 Hub, 7-port, External power. <i>(2m USB cable included; PSU sold separately.)</i> |

ULI-410 Series Selection Guide

Industrial USB 2.0 and 3.0 Hubs



Common Features

- Expand one USB port to 4 or 7 USB ports
- USB 2.0 & USB 3.0
- ESD protection
- Wide operating temperature (USB 2.0 hubs)
- USB host port power or external PSU power
- Metal or plastic enclosures – desk, panel, DIN rail mount
- 4 kV isolation between upstream & downstream ports (models ULI-414CI, ULI-417CI)
- Compact, OEM open bare-board hub (model ULI-414LIB)

Industrial USB 2.0 & 3.0 Hubs Comparison Table

| Model Number | ULI-414LIB | ULI-414LI | ULI-414I | ULI-417I | ULI-414CI | ULI-417CI | ULI-414H | ULI-417H | | |
|------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|-----------------------------------------------------|--------------------------------------|------------------------------------------------------------------------------------------------------------|-----------|--------|--------|
| Part Number to Order | BB-USBHUB40EM | BB-UH104 | BB-UHR204 | BB-UHR207 | BB-UHR304 | BB-UHR307 | BB-USH204 | BB-USH207 | | |
| Description | USB 2.0/1.1, OEM Open Board Module | USB 2.0/1.1 Hub, 4-port Miniature | USB 2.0/1.1 Hubs, 4-port UL C1/D2 & 7-port | | USB 2.0/1.1 Hubs, 4-port UL C1/D2 & 7-port Isolated | | USB 3.0 SuperSpeed Hubs, 4-port & 7-port | | | |
| Upstream Port | 1 | | | | | | | | | |
| Upstream Connector | USB Type B female, high-retention | | | | | | USB Type B | | | |
| Downstream Port/s | 4 | | | 7 | | 4 | | 7 | | |
| Downstream Connector | USB Type A female | | | | | | USB Type A | | | |
| Data Rate, max. | 1.5, 12, 480 Mbps | | 480 Mbps | | | 12 Mbps | | | | |
| USB Standards | 2.0, 1.1 (backwards compatible) | | | | | | 5 Gbps | | | |
| LED Indicators | – | | Power, Port Ready | | | | | Power | | |
| ESD Protection | 15 kV air, 8 kV contact | | | | | | 8 kV air | | | |
| Surge Protection | ±0.5 kV dc ports, ±1 kV signal ports | | | | | | 600 W | | | |
| Isolation, Optical | – | | | | 4 kV | | – | | | |
| Operating Temperature | -40 to +80 °C | | | | | | 0 to +40 °C | | | |
| Power Source | USB port | | USB port or external PSU | | External PSU | | | | | |
| Power Input | 5 Vdc | | USB port: 5 Vdc External PSU: 10-30 Vdc | | 10-30 Vdc | | | 9-24 Vdc | | |
| Power Connector Options | – | | Terminal block (3-position, 5.08mm spacing, 28-12 AWG, solid wire) OR barrel jack (locking, threaded, 5.5 mm, center positive) | | | | 3-pin terminal block OR threaded barrel DC power jack | | | |
| Downstream Power | 100 mA | | 500 mA | | | | 900 mA | | | |
| Enclosure | Open board | IP30 plastic | IP30 metal | | | | Industrial-grade metal | | | |
| Mounting Installation | OEM | Panel | Desk, DIN rail, panel | | | | DIN rail, panel | | | |
| Dimensions, mm | 34 x 60 x 17 | 65 x 61 x 27 (with brackets) | 168.2 x 86.3 x 35.1 (with brackets) | 233.2 x 119.4 x 35.1 (with brackets) | 168.2 x 86.3 x 35.1 (with brackets) | 233.2 x 119.4 x 35.1 (with brackets) | 138.8 x 68.5 x 25 | | | |
| MTBF (MIL217F), hours | 552747 | | 190999 | | 211773 | | 143330 | 151173 | 588858 | 935103 |
| Regulatory / Approvals / Certifications | FCC, CE | | | | | | | | | |
| | 2014/30/EU – Electromagnetic Compatibility 2011/65/EU amended by (EU) 2015/863 – Reduction of Hazardous Substances (RoHS) 2012/19/EU – Waste Electrical and Electronic Equipment (WEEE) | | | | | | | | | |
| | EN 55032 Class B – Electromagnetic Compatibility of Multimedia Equipment – Emissions Requirements EN 55024 – Information Technology Equipment – Immunity Characteristics – Limits and Methods of Measurement | | | | | | EN 55032 Class A – Electromagnetic Compatibility of Multimedia Equipment – Emission Requirements | | | |
| | | | | | | | EN 55024 – Information Technology Equipment – Immunity Characteristics – Limits and Methods of Measurement | | | |
| | – | | UL C1/D2* (ULI-414I & ULI-417I) | | KCC | UL C1/D2* (ULI-414CI & ULI-417CI) | | KCC | | |
| EN 61000-6-1 – Generic Immunity Standard for Residential, Commercial & Light-industrial Environments | | | EN 61000-6-1 – Generic Immunity Standard for Residential, Commercial & Light-industrial Environments | | | | | | – | |
| | | | EN 61000-6-3 +A1 (B) – Generic Emissions Standard for Residential, Commercial & Light-industrial Environments | | | | | | | |



*UL C1/D2
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