

ULI-414H ULI-417H ULI-417HC

BB-USH204-B
BB-USH207-B
ULI-417HC-A

Industrial USB 3.2 Hubs



Features (model dependent)

- Expand one USB port to 4 or 7 USB ports
- USB 3.2 Gen 1 (5 Gbps)
- ESD Level 4 protection (15 kV air, 8 kV contact)
- Surge protection 1kV
- 2.5 kV isolation protection (ULI-417HC)
- USB bus power or external PSU power
- Metal enclosures – DIN rail, Wallmount and Deskmount bracket (Included)
- USB 3.0 unlockable cable, A-Male to B-male (included)
- IEC 62368-1:2018 (ULI-417HC)



Introduction

Advantech ULI-410H series provide a full spectrum of industrial hubs. Our comprehensive range encloses Industrial USB 3.2 hubs, offering transfer rates up to 5 Gbps, ESD level 4 protection at 15 kV air and 8 kV contact, surge protection up to 1 kV. In addition, ULI-417HC supports 2.5 kV isolation protection ideal for deployment in the harsh industrial environments.

Specifications

USB Technology

Model #:	Upstream Port:	Downstream Ports:	Data Rate, each port:	Standards:
ULI-414H	(1) Type B	(4) Type A	Up to 5 Gbps	SuperSpeed 3.2 Gen 1 (2.0, 1.1 backward compatible)
ULI-417H		(7) Type A		
ULI-417HC				

Isolation & ESD Protections

Model #:	Isolation:	ESD Protection:	Surge Protection:
ULI-414H	-	15 kV air, 8kV contact	± 0.5 kV DC ports, ± 1 kV signal ports
ULI-417H			
ULI-417HC	2.5kV		

Environmental

Model #:	Operating Temperature:	Storage Temperature:	Relative Humidity:
ULI-414H	0 to +50 °C	-20 to +50 °C	0 to +85%, non-condensing
ULI-417H			
ULI-417HC	-10 to +60 °C*	-20 to +70 °C	5 to +95%, non-condensing

* -10 to +60 °C with external power, -10 to +50 °C with USB power.

Power

Model #:	Source:	Input Voltage:	Connection:	Consumption:	Downstream, per port:
ULI-414H [‡]	External PSU (required, not included)	External PSU: 9-30 Vdc	3-pin terminal block OR DC power jack	30 W	2.4 A [‡]
ULI-417H [‡]				45 W	
ULI-417HC	USB Bus Power or External PSU (not included)	External PSU: 10-30 Vdc	2-pin terminal block OR DC power jack	25 W	USB Bus Power: 500 mA max. shared by all ports External PSU: Each downstream port supports up to 1.2A, with a maximum of 3.6A shared by all ports.

[‡] Each downstream port supports up to 2.4A to a maximum of 27W (ULI-414H, BB-USH204-B) or 42W (ULI-417H, BB-USH207-B) total.

Mechanical

Model #:	Enclosure:	Mounting:	Dimensions, mm:	Weight, gm:	USB Cable:
ULI-414H	Industrial grade, metal	DIN rail, Wall, Desk	138.8 x 68.5 x 25	0.29	Included, 2.0 m
ULI-417H				0.31	
ULI-417HC			138.8 x 68.5 x 30	0.35	

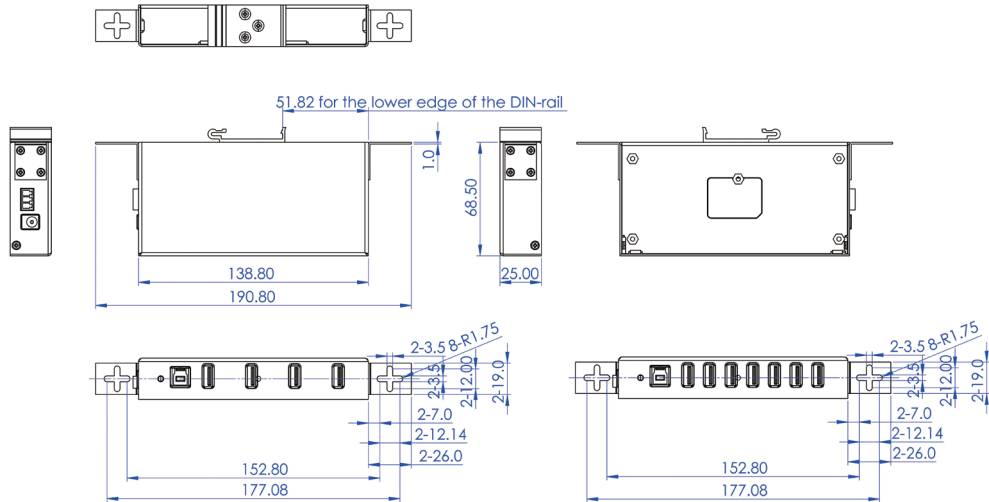
Meantime Between Failures (MTBF)

- Calculation Method MIL217F Parts Count Reliability Prediction

Model #:	Hours:
ULI-414H	275611
ULI-417H	182880
ULI-417HC	426207

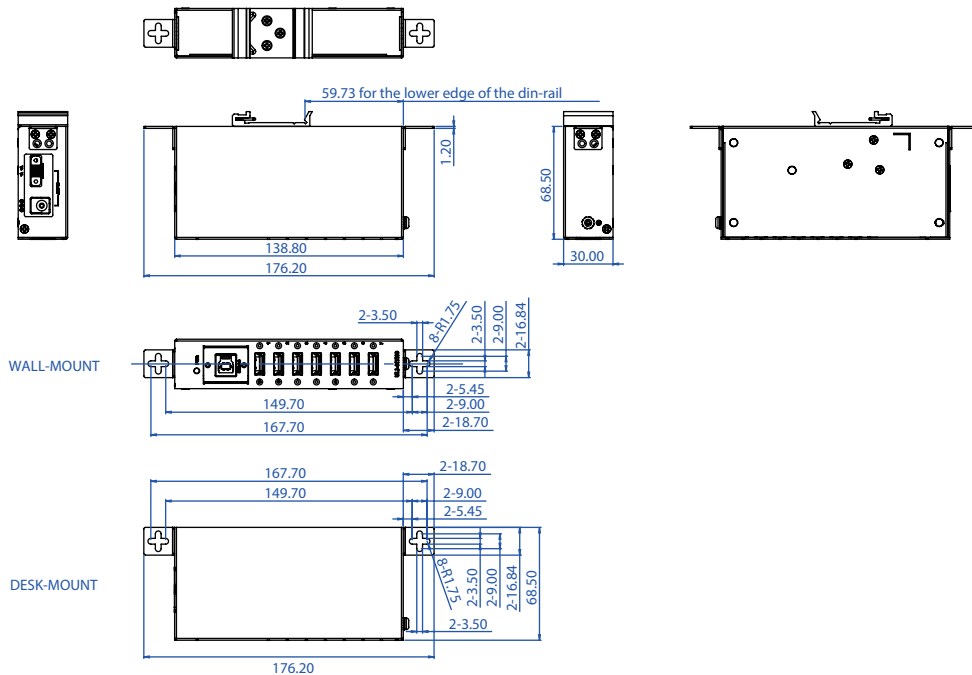
Dimensions - ULI-414H, ULI-417H

Unit = mm



Dimensions - ULI-417HC

Unit = mm



Ordering Information

Model Number	Part Number to Order	Description
ULI-414H	BB-USH204-B	Industrial 4 Port USB 3.0 Hub. (2m USB 3.0 unlockable cable & mounting kit included; PSU sold separately.)
ULI-417H	BB-USH207-B	Industrial 7 Port USB 3.0 Hub. (2m USB 3.0 unlockable cable & mounting kit included; PSU sold separately.)
ULI-417HC	ULI-417HC-A	Industrial USB 3.2 Isolated Hub, 7-port, External power. (1m USB 3.0 unlockable cable & mounting kit included; PSU sold separately.)

ULI-410 Series Selection Guide

Industrial USB 3.2 Hubs



Common Features

- Expand one USB port to 4 or 7 USB ports
- USB 3.2 Gen 1 (5 Gbps)
- ESD Level 4 protection (15 kV air, 8 kV contact)
- Surge protection 1kV
- USB bus power or external PSU power
- Metal enclosures – DIN rail, Wallmount and Deskmount bracket (Included)
- USB 3.0 unlockable cable, A-Male to B-male (included)

Industrial USB 3.2 Hubs Comparison Table

Model Number	ULI-414H	ULI-417H	ULI-417HC
Part Number to Order	BB-USH204-B	BB-USH207-B	ULI-417HC-A
Description	Industrial USB 3.2 SuperSpeed Hubs, 4-port & 7-port		Industrial USB 3.2 SuperSpeed Isolated Hub, 7-port
Upstream Port	1		1
Upstream Connector	USB Type B		USB Type B
Downstream Port/s	4	7	7
Downstream Connector	USB Type A		USB Type A
Data Rate, max.	5 Gbps		5 Gbps
USB Standards	3.2 Gen 1, 2.0, 1.1 (backwards compatible)		3.2 Gen 1, 2.0, 1.1 (backwards compatible)
LED Indicators	Power		Power
ESD Protection	Level 4 (15 kV air, 8 kV contact)		Level 4 (15 kV air, 8 kV contact)
Surge Protection	±0.5 kV dc ports, ±1 kV signal ports		±0.5 kV dc ports, ±1 kV signal ports
Isolation, Optical	–		2.5 kV
Operating Temperature	0 to +50 °C		- 10 to +60 °C [†]
Power Source	External PSU		USB Bus Power or External PSU
Power Input	9-30 V _{DC}		10-30 V _{DC}
Power Connector Options	3-pin terminal block OR DC power jack		2-pin terminal block OR DC power jack
Downstream Power	2.4A* * Each downstream port supports up to 2.4A, with a maximum of 27W for ULI-414H and 42W for ULI-417H shared by all ports.		USB bus power: 500 mA max. shared by all ports OR External PSU: Each downstream port supports up to 1.2A, with a maximum of 3.6A shared by all ports.
Enclosure	Industrial-grade metal		Industrial-grade metal
Mounting Installation	DIN rail, Desk, Wall		DIN rail, Desk, Wall
Dimensions, mm	138.8 x 68.5 x 25		138.8 x 68.5 x 30
MTBF (MIL217F), hours	275611	182880	426207
USB Cable	Included (2m)	Included (2m)	Included (1m)
Regulatory / Approvals / Certifications	FCC, CE, ROHS, REACH, WEEE		FCC, CE, ROHS, REACH, WEEE
	EN 55032: 2015 + A1: 2020 EN 55035: 2017 + A11: 2020 EN IEC 61000-6-4: 2019 EN IEC 61000-6-2: 2019 EN 55011: 2016 + A2: 2021 EN 61000-4-2: 2009 EN 61000-4-8: 2010 EN IEC 61000-4-3: 2020 EN 61000-4-4: 2012 EN 61000-4-5: 2014 + A1: 2017 EN 61000-4-6: 2014 + AC: 2015	EN 55032: 2015 + A1: 2020 EN 55035: 2017 + A11: 2020 EN IEC 61000-6-4: 2019 EN IEC 61000-6-2: 2019 EN 55011: 2016 + A2: 2021 IEC 61000-4-2: 2008 IEC 61000-4-8: 2009 IEC 61000-4-3: 2020 IEC 61000-4-4: 2012 IEC 61000-4-5: 2017 IEC 61000-4-6: 2023 IEC 62368-1:2018	EN 55032: 2015 + A1: 2020 EN 55035: 2017 + A11: 2020 EN IEC 61000-6-4: 2019 EN IEC 61000-6-2: 2019 EN 55011: 2016 + A2: 2021 IEC 61000-4-2: 2008 IEC 61000-4-8: 2009 IEC 61000-4-3: 2020 IEC 61000-4-4: 2012 IEC 61000-4-5: 2017 IEC 61000-4-6: 2023 IEC 62368-1:2018
	IEC 60068-2-31:2008 IEC 60068-2-2:2007 IEC 60068-2-1:2007 IEC 60068-2-27:2008 IEC 60068-2-64:2008+A1:2019	IEC 60068-2-2:2007 IEC 60068-2-1:2007	IEC 60068-2-2:2007 IEC 60068-2-1:2007
	KCC	KCC	–

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

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

Industrial USB 2.0 Hubs



Features (model dependent)

- Expand one USB port to 4 or 7 USB ports
- USB 2.0
- ESD Level 4 protection (15 kV air, 8 kV contact)
- High retention USB connectors grip cables tight
- Wide operating temperature
- USB host port power or external PSU power
- Metal or plastic enclosures – desk, 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 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.

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		(7) High retention, Type A female		
ULI-417I		(4) High retention, Type A female	12 Mbps** +	
ULI-414CI		(7) High retention, Type A female		
ULI-417CI				

* When installed, ULI-414LIB appears as an unbranded USB hub.
 **Isolation limits speed to 12 Mbps. (ULI-414CI, ULI-417CI)
 +Multi-transaction translator, 1 per port. (ULI-414CI, ULI-417CI)

Isolation & ESD Protections

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

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)		
ULI-417CI			

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† OR external PSU	USB port: 5 Vdc External PSU: 10-30 Vdc	Terminal Block (3 pos., 5.08 mm spacing, 28-12 AWG, solid wire) OR Barrel Jack (locking, threaded, 5.5mm, center positive)	16 W	500 mA
ULI-417I				30 W	
ULI-414CI	External PSU (required, not included)	External PSU: 10-30 Vdc		16 W	
ULI-417CI				30 W	

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

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§	38.0	Included, 1.8m
ULI-417I			233.2 x 119.4 x 35.1§	68.0	
ULI-414CI			168.2 x 86.3 x 35.1§	38.0	
ULI-417CI			233.2 x 119.4 x 35.1§	68.0	

‡ Mounting kit included.

§ Enclosure with brackets.

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

Mean Time Between Failures (MTBF)

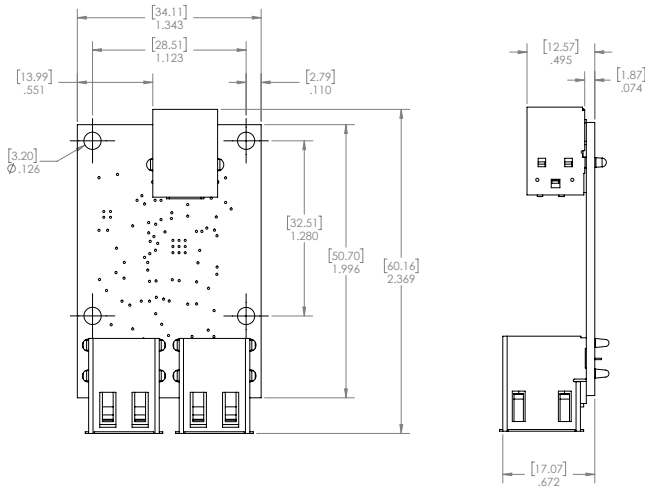
- Calculation Method MIL217F Parts Count Reliability Prediction

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

ULI-414LIB BB-USBHUB40EM
ULI-414LI BB-UH104
ULI-414I BB-UHR204
ULI-417I BB-UHR207
ULI-414CI BB-UHR304
ULI-417CI BB-UHR307

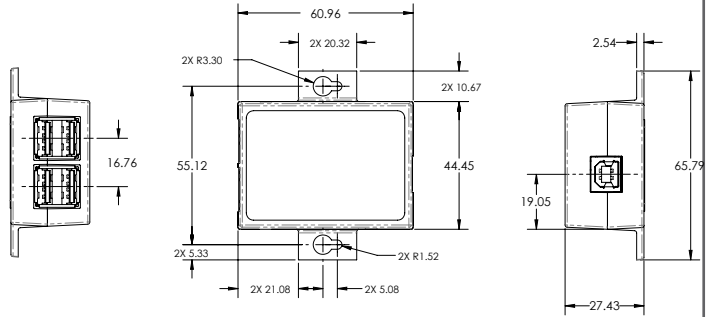
Dimensions - ULI-414LIB

Unit = mm / in



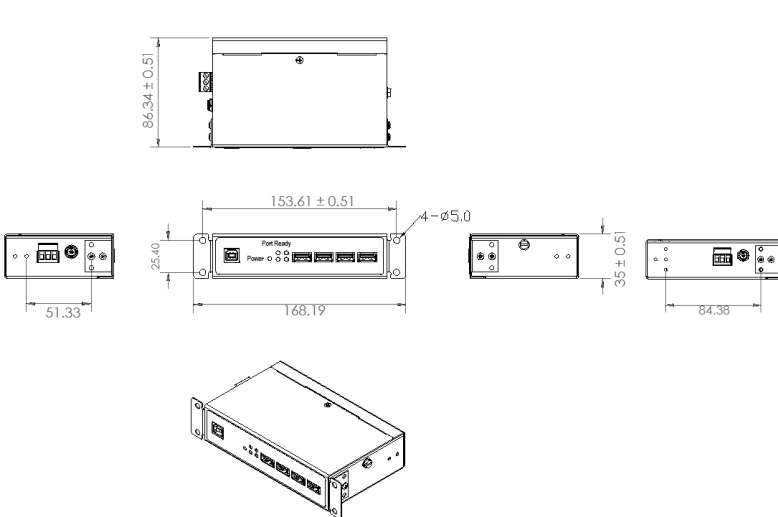
Dimensions - ULI-414LI

Unit = mm



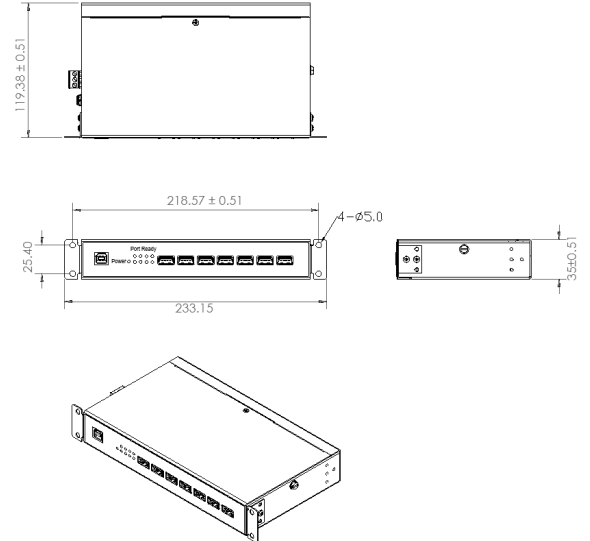
Dimensions - ULI-414I, ULI-414CI

Unit = mm



Dimensions - ULI-417I, ULI-417CI

Unit = mm

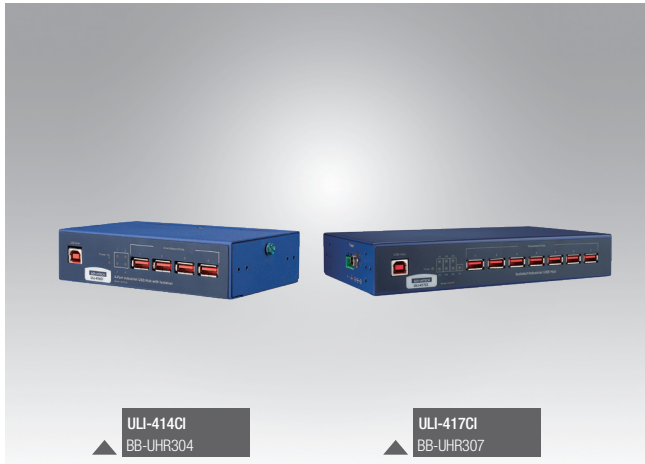


Ordering Information

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. (USB cable required, sold separately.)
ULI-414LI	BB-UH104	Industrial USB 2.0 Hub, 4-port, High retention USB, USB port power. (USB cable required, sold separately. Mounting kit included.)
ULI-414I	BB-UHR204	Industrial USB 2.0 Hub, 4-port, High retention USB, USB or PSU power. (1.8m USB cable & mounting kit included; PSU sold separately.)
ULI-417I	BB-UHR207	Industrial USB 2.0 Hub, 7-port, High retention USB, External power. (1.8m USB cable & mounting kit included; PSU sold separately.)
ULI-414CI	BB-UHR304	Industrial USB 2.0 Hub, 4-port, High retention USB, 4kV Isolation, External power. (1.8m USB cable & mounting kit included; PSU sold separately.)
ULI-417CI	BB-UHR307	Industrial USB 2.0 Hub, 7-port, High retention USB, 4kV Isolation, External power. (1.8m USB cable & mounting kit included; PSU sold separately.)
Accessory	BB-USBAMB-3F	USB 2.0 cable 0.9 m, Type A male to Type B male.

ULI-410 Series Selection Guide

Industrial USB 2.0 Hubs



Common Features

- Expand one USB port to 4 or 7 USB ports
- USB 2.0
- ESD Level 4 protection (15 kV air, 8 kV contact)
- Wide operating temperature
- USB host port power or external PSU power
- Metal or plastic enclosures – desk, 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 Hubs Comparison Table

Model Number	ULI-414LIB	ULI-414LI	ULI-414I	ULI-417I	ULI-414CI	ULI-417CI
Part Number to Order	BB-USBHUB4OEM	BB-UH104	BB-UHR204	BB-UHR207	BB-UHR304	BB-UHR307
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	
Upstream Port	1					
Upstream Connector	USB Type B female, high-retention					
Downstream Port/s	4		7		4	7
Downstream Connector	USB Type A female, high-retention					
Data Rate, max.	1.5, 12, 480 Mbps		480 Mbps		12 Mbps	
USB Standards	2.0, 1.1 (backwards compatible)					
LED Indicators	–		Power, Port Ready			
ESD Protection	Level 4 (15 kV air, 8 kV contact)					
Surge Protection	±0.5 kV dc ports, ±1 kV signal ports					
Isolation, Optical	–		–		4 kV	
Operating Temperature	-40 to +80 °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	
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)			
Downstream Power	100 mA		500 mA			
Enclosure	Open board	IP30 plastic	IP30 metal			
Mounting Installation	OEM	In-line	Desk, DIN rail			
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)
MTBF (MIL217F), hours	552747		190999	211773	143330	151173
USB Cable	not included	not included	Included (1.8m)	Included (1.8m)	Included (1.8m)	Included (1.8m)
Regulatory / Approvals / Certifications	EN 55032: 2015 + A1: 2020 EN 55035: 2017 + A11: 2020 EN IEC 61000-6-4: 2019 EN IEC 61000-6-2: 2019 EN 55011: 2016 + A2: 2021 EN 61000-4-2: 2009 EN 61000-4-8: 2010 EN IEC 61000-4-3: 2020 EN 61000-4-4: 2012 EN 61000-4-5: 2014 + A1: 2017 EN 61000-4-6: 2014 + AC: 2015					
	–		EN 55032 EN 55024	EN 55032 EN 55035 EN 61000-6-4 EN 61000-6-2 EN 55011 EN 61000-4-2 EN 61000-4-8 EN 61000-4-3 EN 61000-4-4 EN 61000-4-5 EN 61000-4-6	EN 55032 EN 55024	EN 55032 EN 55035 EN 61000-6-4 EN 61000-6-2 EN 55011 EN 61000-4-2 EN 61000-4-8 EN 61000-4-3 EN 61000-4-4 EN 61000-4-5 EN 61000-4-6
	–		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				

1. *UL C1/D2 #E337172