

USB-IF USB 2.0 Certification Mandatory Test Matrix

<u>USB Peripherals</u>	Upstream							Function/Interface			
	Inrush	Back-voltage	LSSQ	FSSQ	HSSQ	Electrical Protocols	Receiver Sensitivity	Gold-tree Interoperability	Avg Current Draw	USB20CV	USB30CV
Low-speed Peripheral	✓	✓	✓					✓	✓	✓	✓
Full-speed Peripheral	✓	✓		✓				✓	✓	✓	✓
High-speed Peripheral	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
SuperSpeed Peripheral	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓

<u>USB Hubs</u>	Upstream							Downstream					Function/Interface			
	Inrush	Back-voltage	FSSQ Upstream	HSSQ Upstream	Electrical Protocols	Receiver Sensitivity	LSSQ Downstream	FSSQ Downstream	HSSQ Downstream	Drop	Drop	USBHTT	Gold-tree Interoperability	Avg Current Draw	USB20CV	USB30CV
High-speed Hub	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
Full-speed Hub (prohibited)																

<u>Compound USB Devices</u>	Upstream							Each Exposed Downstream Port					Function/Interface			
	Inrush	Back-voltage	FSSQ Upstream	HSSQ Upstream	Electrical Protocols	Receiver Sensitivity	LSSQ Downstream	FSSQ Downstream	HSSQ Downstream	Drop	Drop	USBHTT	Gold-tree Interoperability	Avg Current Draw	USB20CV	USB30CV
High-speed Hub	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Full-speed Hub	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

<u>Systems (standard hosts)</u>	Each Exposed Downstream Port						
	Gold-tree Interoperability	Drop	Drop	LSSQ Downstream	FSSQ Downstream	HSSQ Downstream	Electrical Protocols
High-speed host	✓	✓	✓	✓	✓	✓	✓
Full-speed host (prohibited)							

Category	Each Exposed Downstream Port						
	Gold-tree Interoperability	Drop	Droop	LSSQ Downstream	FSSQ Downstream	HSSQ Downstream	Electrical Protocols
High-speed host	✓	✓	②	⊖	✓	✓	✓
Full-speed host	✓	✓	②	⊖	✓		
Low-speed host	✓	✓	②	✓			

Category	Function/Interface			Peripheral								Host					
	Gold-tree Interoperability	Avg Current Draw	USB20CV USB30CV	Inrush	Back-voltage	LSSQ Upstream	FSSQ Upstream	HSSQ Upstream	Electrical Protocols	Receiver Sensitivity	TPL Interoperability	LSSQ Downstream	FSSQ Downstream	HSSQ Downstream	Electrical Protocols	Drop	Droop
Low-speed peripheral/Low-speed host	✓	✓	✓	✓	✓	✓					✓	✓				✓	②
Full-speed peripheral/Low-speed host	✓	✓	✓	✓	✓		✓				✓	✓				✓	②
High-speed peripheral/Low-speed host	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓				✓	②
Low-speed peripheral/Full-speed host	✓	✓	✓	✓	✓	✓					✓	⊖	✓			✓	②
Full-speed peripheral/Full-speed host	✓	✓	✓	✓	✓		✓				✓	⊖	✓			✓	②
High-speed peripheral/Full-speed host	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	⊖	✓			✓	②
Low-speed peripheral/High-speed host	✓	✓	✓	✓	✓	✓					✓	⊖	✓	✓	✓	✓	②
Full-speed peripheral/High-speed host	✓	✓	✓	✓	✓		✓				✓	⊖	✓	✓	✓	✓	②
High-speed peripheral/High-speed host	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	⊖	✓	✓	✓	✓	②

Category	Function/Interface			Peripheral						Host						Host and Peripheral		
	Gold-tree Interoperability	Avg Current Draw	USB20CV USB30CV	Inrush	Back-voltage	FSSQ Upstream	HSSQ Upstream	Electrical Protocols	Receiver Sensitivity	LSSQ Downstream	FSSQ Downstream	HSSQ Downstream	Electrical Protocols	Drop	TPL Interoperability	OET	FS OPT	HS OPT
Full-speed peripheral/Full-speed OTG host	✓	✓	✓	✓	✓	✓				⊖	✓			✓	✓	✓	✓	
High-speed peripheral/Full-speed OTG host	✓	✓	✓	✓	✓	✓	✓	✓	✓	⊖	✓	✓		✓	✓	✓	✓	✓
Full-speed peripheral/High-speed OTG host	✓	✓	✓	✓	✓	✓				⊖	✓		✓	✓	✓	✓	✓	✓
High-speed peripheral/High-speed OTG host	✓	✓	✓	✓	✓	✓	✓	✓	✓	⊖	✓	✓	✓	✓	✓	✓	✓	✓
Low-speed peripheral or Low-speed only host (prohibited)																		

① performed if supported

② performed if multiple downstream ports exist