



Technical Note

TN_180

FT4233HP/FT2233HP/FT233HP Technical Note

Version 1.0

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The intention of this errata technical note is to give a detailed description of known functional or electrical issues with the FTDI FT4233HP/FT2233HP/FT233HP devices.

The current revision of the FT4233HP/FT2233HP is **Rev C** and FT233HP is **Rev B** as of the Issue Date of this document.

Use of FTDI devices in life support and/or safety applications is entirely at the user's risk, and the user agrees to defend, indemnify and hold FTDI harmless from any and all damages, claims, suits or expense resulting from such use.

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1 Glossary of Terms

SI.No.	Term	Description
1	Port 1	The port which has data communication capability and USB is enumerated when connected to a host port is referred as "Port 1" in this document.
2	Port 2 / Charging Port	The second port is referred as either "Port 2" or "Charging Port" in this document. This port does not have data communication capability.
3	Sink / Consumer	When the device is consuming power from the host port, the device is said to be in "Sink" mode or device is said to be a "consumer" Device will be in Sink mode when there is no charger connected to the charging port.
4	Source / Provider	When the device is supplying power to the host, then the device is operating in "Source" mode. The device can change the role from Sink to Source when a charger is attached to the charging port.
5	Pass-through	In pass-through mode, the device will duplicate the charger power profile and use it as its own source capability on port1. For example: if the charger attached to charging port has 20V,15V and 5V profiles, then the device will also report 20V, 15V and 5V on its port1.
6	E-Mark Cable	Cables with E-Marker chips inside (connector side). Cables which support higher than 3A current need E-Marker chips. E-Marker is a small chip which is placed inside the USB-C cable, usually at the connector plug side. Traditional USB-C Cables will not have this chip to save the cost. However the cables which supports more than 3A current needs to implement this. A cable which has this chip is known as E-Mark cable.
7	PD Controller	A processing unit that handles all the power delivery related processing

Table 1-1 Glossary of Terms

2 Errata List

2.1 Erratum 0001

Erratum	0001	Additional Notes
Title	Pass through charging may cause continuous connect / disconnects in MacBook Pro 2020 4 Port Version.	
Severity	High	
Affected Revisions	FT4233HP/FT2233HP Rev C, FT233HP Rev B	
Detailed Description	When the second port of FT4233HP/FT2233HP/FT233HP is used to charge MacBook Pro 2020 4 port versions, the laptop may disconnect the device due to a voltage mismatch.	
Workaround	Use a charger which can supply at least one profile that supports $\geq 3.75A$ current.	Sink only use case has no issues.
Fix Status	To be determined	
Fix Description		

Table 2-1 Erratum 0001

2.2 Erratum 0002

Erratum	0002	Additional Notes
Title	Pass through charging may cause continuous connect / disconnects in MacBook Pro 2020 2 Port Version.	
Severity	Low	
Affected Revisions	FT4233HP/FT2233HP Rev C, FT233HP Rev B	
Detailed Description	When the second port of FT4233HP/FT2233HP/FT233HP is used to charge MacBook Pro 2020 2 port versions, the laptop may disconnect the device due to a voltage mismatch. This happens when a low power charger is used.	
Workaround	Use a charger which can supply at least one profile other than 5V profile, which can support 3A current.	In box charger does not have this issue. Most chargers typically support at least one profile supporting 3A other than the 5V profile, except a few very low power chargers. Sink only use case has no Issues.
Fix Status	To be determined	
Fix Description		

Table 2-2 Erratum 0002

2.3 Erratum 0003

Erratum	0003	Additional Notes
Title	Some HP laptop models when used with NON-EMark cables, may fail to charge the laptop or disconnect the device	No Issue when EMark cables are used.
Severity	Medium	
Affected Revisions	FT4233HP/FT2233HP Rev C, FT233HP Rev B	
Detailed Description	When the second port of FT4233HP/FT2233HP/FT233HP is used to charge HP laptops, some laptops (ex: HP ProBook 450 G7) may fail to charge. This is due to a cable reset message sent by the laptop and the device misbehaves after cable reset.	
Workaround	Use an EMark cable.	
Fix Status	To be determined	
Fix Description		

Table 2-3 Erratum 0003

2.4 Erratum 0004

Erratum	0004	Additional Notes
Title	USB Interface may disappear if charger input power is toggled.	
Severity	Medium	
Affected Revisions	FT4233HP/FT2233HP Rev C, FT233HP Rev B	
Detailed Description	During pass-through charging if the chargers input power is removed by turning off power plug switch, next time when the switch is turned back on, the USB interface may disappear. This is because the cable is still attached while the VBUS is dropping on the charging port. The IC will get power cycled at some point and power up again due to VBUS from the laptop on port 1. The charging port will still have some low voltage due to which device will detect cable attach but voltage is not enough for charger to communicate and hence the device will go into an error state. Next time when the charger is powered back, the device does not recover the error state and USB interface may disappear.	Some Nekteck brand chargers seem to exhibit this issue.
Workaround	Option a: Disconnect the cable from charger instead of switching off power. Option b: Re-insert port1 cable, in case the issue is seen.	A workaround through fine tuning the circuit at Port-2 is under study
Fix Status	To be determined	
Fix Description		

Table 2-4 Erratum 0004

2.5 Erratum 0005

Erratum	0005	Additional Notes
Title	The PD device may not be able to charge HP Probook 430 G5 / HP Probook 450 G5 laptops.	
Severity	Medium	
Affected Revisions	FT4233HP/FT2233HP Rev C, FT233HP Rev B	
Detailed Description	Some older models of HP laptops (430 G5, 450 G5 for example), do not handle certain responses for the vendor defined message sent by the laptop. The PD controller in the laptop goes into a tight loop and prevents further communication.	
Workaround	No Workaround available. This is an issue with the host PD controller.	
Fix Status	NA	
Fix Description	NA	

Table 2-5 Erratum 0005

3 Contact Information

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Distributor and Sales Representatives

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Appendix A – References

Document References

NA

Acronyms and Abbreviations

Terms	Description
PD	Power Delivery
USB	Universal Serial Bus

Appendix B – List of Tables & Figures

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NA

Appendix C – Revision History

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