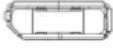
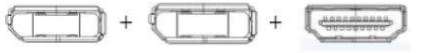


		Winstars Product Specifications		Version		V1.2			
				Page		1/1			
		Model		WS-UMD01		Date		2019-08-01	
		Name		USB-C Triple Display 4K MST Docking Station		Writer		Johnson	
Picture tupia 图片				Features: 特点					
				1. Compatible with Type-C USB3.1 Gen2 full specification PC Computer. 2. USB Power Delivery with 4 profile support 65 Watts upstream charging. 3. DisplayPort support V1.4; HDMI port support HDMI V2.0 4. Support triple display, max. resolution up to 1920x1080@60 (HBR3 DP1.3) 5. Support dual display, max. resolution up to 2560x1440@60 (HBR3 DP1.3) 6. Support single display, max. resolution up to 3840x2160@60 (HBR3 DP1.3) 7. Build in Gigabit Ethernet network RJ-45 backward 10/100 Ethernet. 8. Build in 4-Pole phone Jack for stereo audio out and microphone in. 9. Build in Combo SD / TF Card Reader SD V3.01 support SDHC / SDXC capacity up to 2TB. 10. Four USB 3.0 Type-A ports with one port has BC1.2 fast charging. 11. Support OS Windows 7 / 8 / 10; Max OSX 10 or the latest version.					
Title 标题				USB-C Triple Display (2 DP + 1 HDMI) MST Docking Station with USB Power Delivery					
Description 介绍				Package Content 标配		System Requirement: 系统配置			
USB-C Triple Display MST Docking Station delivers device charging to your Laptop Computer, supports up to three displays, and enables connectivity to your wired network and other accessories.				1. USB-C Triple Display MST Docking Station 2. Power Adapter 100Watts, DC20V / 5A 3. Quick Installation Guide 4. USB-C to C Cable (eMark) 1meter		1. USB-C Computer had USB3.1 full function with data transfer, USB-C Power Delivery & Video Alternate Mode 2. Windows 7 / 8 /10 or later 3. MacOS 10.X or above			
Specification 规格									
Hardware 硬件				Functions 功能		Exterior 外观			
Ports	DC Jack, USB-C(upstream), 2 x Displayport, 1 x HDMI, 1 x RJ45, 4-Pole Phone Jack, SD / TF CardReader, 4 x USB3.0-A			Working Standard	1. USB-C I/P: USB3.1 Gen2 (data, Video and Upstream Charging) 2. Single DisplayPort: 4K/60Hz max. 3. Single HDMI: 4K/60Hz max. 4. USB-C Port: 5Gbps 5. 3 x USB-A Port: 5Gbps 6. 1 x USB-A Port: 5Gbps + BC1.2 Charging 7. RJ45: Gigabit Ethernet 8. CardReader: SDHC /SDXC /TF 9. Phone Jack: Stereo 4pole TRRS Stereo		Housing	Plastic: Black Aluminum: Silver	
Button	NIL						Power Cable	Black 1.5Meter	
LED	Blue						Data Cable	Black 1Meter	
Chipset	FL5002, FL5000, VMM5320, RTL8153B, ALC4030								
	GL3224								
Flash	4M-Bit								
SDRAM	NIL								
Power Supply	DC20V / 5A 100Watt								
Power Plug	DC Jack			Operating System		Mac OS, Windows			
Power Consumption	97Watt			Max. Pixels		4K / 60Hz			
Rated Voltage	100-240 Va.c. 50/60Hz, 2A Max , CLASS II			Max.Charing Current(A)		3A			
Dimensions 尺寸				Certification 证书					
Unit Dimensions	Be updated in next vesion			CE-EMC	Design in				
Weight	Be updated in next vesion			CE-RTTE					
Housing Material	Plastic / Aluminum			CE-LVD					
Shell color	Apple Gray			FCC DOC					
Package Dimension	Be updated in final version			FCC ID	Design in				
Environmental 环境				ROHS	Design in				
Operating Temperature	0°C~40°C			Reach	Design in				
Storage Temperature	-10~70°C			3C					
Relative Humidity(Operational)	10%~90%,noncondensing			Others 其他					
Relative Humidity(Storage)	10%~90%,noncondensing			Method	See Manual				
Drop test (1 Meters)	3 st			Performance	See Test Report				
Cycle work (hours)	24Hour			Reliability	See Test Report				

Summary	X1		X2		X3		
							
							
HBR2(DP1.2)	2560x1440 @60Hz	2560x1440 @60Hz	1920x1080 @60Hz	1920x1080 @60Hz	1660x900 @60Hz	1660x900 @60Hz	1660x900 @60Hz
	3840x2160 @30Hz	3840x2160 @30Hz					
HBR3(DP1.3)	3840x2160 @60Hz	3840x2160 @60Hz	2560x1440 @60Hz	2560x1440 @60Hz	1920x1080 @60Hz	1920x1080 @60Hz	1920x1080 @60Hz

	1-Lane	2-Lane
RBR	1.67Gbps	3.34Gbps
HBR	2.7Gbps	5.4Gbps
HBR2(DP1.2)	5.4Gbps	10.8Gbps
HBR3(DP1.3)	8.1Gbps	16.2Gbps

Monitor		Bandwidth
1600*900/60Hz		<3.02Gbps
1920*1080/60Hz	FHD	<4.35Gbps
1920*1080/144Hz	FHD	<10.43Gbps
2560*1440/60Hz	QHD	<7.72Gbps
3480*2160/30Hz	4K	<8.69Gbps
3480*2160/60Hz	4K	<17.38Gbps
7680*4320/30Hz	8K	<34.76Gbps

(分辨率) x (bpc) x (像素倍数) x (刷新率) / (hdmi采用的8b/10b编码) / 1024的3次方=频宽Gbps

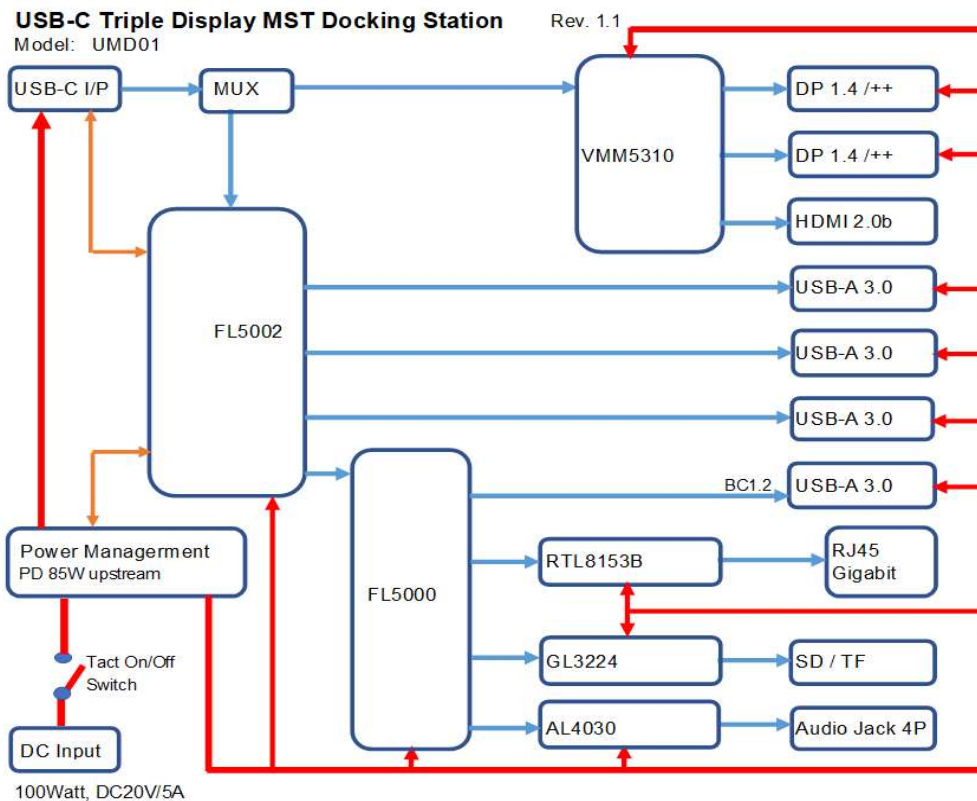
W 分辨率	H 分辨率	bpc 8/10b	像素倍数	刷新率	HDMI 8/10b编码	MB	KB	Byte	频宽
rgb或者yuv(ycbcr)4:4:4格式	(bpc)要x3								
1600	900	8	3	60	0.8	1024	1024	1024	2.41 Gpbs
1920	1080	8	3	60	0.8	1024	1024	1024	3.48 Gpbs
1920	1080	8	3	144	0.8	1024	1024	1024	8.34 Gpbs
2048	1152	8	3	30	0.8	1024	1024	1024	1.98 Gpbs
2048	1152	8	3	60	0.8	1024	1024	1024	3.96 Gpbs
2560	1440	8	3	30	0.8	1024	1024	1024	3.09 Gpbs
2560	1440	8	3	60	0.8	1024	1024	1024	6.18 Gpbs
3840	2160	8	3	30	0.8	1024	1024	1024	6.95 Gpbs
3840	2160	8	3	60	0.8	1024	1024	1024	13.90 Gpbs
7680	4320	8	3	30	0.8	1024	1024	1024	27.81 Gpbs
7680	4320	8	3	60	0.8	1024	1024	1024	55.62 Gpbs

1600	900	10	3	60	0.8	1024	1024	1024	3.02 Gpbs
1920	1080	10	3	60	0.8	1024	1024	1024	4.35 Gpbs
1920	1080	10	3	144	0.8	1024	1024	1024	10.43 Gpbs
2048	1152	10	3	30	0.8	1024	1024	1024	2.47 Gpbs
2048	1152	10	3	60	0.8	1024	1024	1024	4.94 Gpbs
2560	1440	10	3	30	0.8	1024	1024	1024	3.86 Gpbs
2560	1440	10	3	60	0.8	1024	1024	1024	7.72 Gpbs
3840	2160	10	3	30	0.8	1024	1024	1024	8.69 Gpbs
3840	2160	10	3	60	0.8	1024	1024	1024	17.38 Gpbs
7680	4320	10	3	30	0.8	1024	1024	1024	34.76 Gpbs
7680	4320	10	3	60	0.8	1024	1024	1024	69.52 Gpbs

rgb或者yuv422格式	(bpc)要x2								
1920	1080	8	2	60	0.8	1024	1024	1024	2.32 Gpbs
1920	1080	8	2	144	0.8	1024	1024	1024	5.56 Gpbs
2048	1152	8	2	30	0.8	1024	1024	1024	1.32 Gpbs
2048	1152	8	2	60	0.8	1024	1024	1024	2.64 Gpbs
2560	1440	8	2	30	0.8	1024	1024	1024	2.06 Gpbs
2560	1440	8	2	60	0.8	1024	1024	1024	4.12 Gpbs
3840	2160	8	2	30	0.8	1024	1024	1024	4.63 Gpbs
3840	2160	8	2	60	0.8	1024	1024	1024	9.27 Gpbs
7680	4320	8	2	30	0.8	1024	1024	1024	18.54 Gpbs
7680	4320	8	2	60	0.8	1024	1024	1024	37.08 Gpbs

rgb或者yuv420的格式	(bpc)x1.5								
1920	1080	8	1.5	60	0.8	1024	1024	1024	1.74 Gpbs
1920	1080	8	1.5	144	0.8	1024	1024	1024	4.17 Gpbs
2048	1152	8	1.5	30	0.8	1024	1024	1024	0.99 Gpbs
2048	1152	8	1.5	60	0.8	1024	1024	1024	1.98 Gpbs
2560	1440	8	1.5	30	0.8	1024	1024	1024	1.54 Gpbs
2560	1440	8	1.5	60	0.8	1024	1024	1024	3.09 Gpbs
3840	2160	8	1.5	30	0.8	1024	1024	1024	3.48 Gpbs
3840	2160	8	1.5	60	0.8	1024	1024	1024	6.95 Gpbs
7680	4320	8	1.5	30	0.8	1024	1024	1024	13.90 Gpbs
7680	4320	8	1.5	60	0.8	1024	1024	1024	27.81 Gpbs

Block Diagram



Power Delivery Profile

5V 3A
9V 3A
15V 3A
20V 3.25A

Power Budget

PD Charging		65
DP	x2	3.3
Card reader	x1	1.5
Audio	x1	0.5
Ethernet	x1	0.7
USB3	x3	14
USB3 (BC1.2)	x1	7.5
Internal		5
		97 Watt