

Test Method



TEST REPORT

Reference No	:	WTF17F1194185A1C
Applicant	+ :	Mid Ocean Brands B.V.
Address	. 54	Unit 201 2/F., Laford Centre, 838 Lai Chi Kok Road, Cheung Sha Wan, Kowloon, Hong Kong.
Manufacturer	الكاملة	109979
Sample Name	`: _. ,	3 port USB spinner power hub
Model No	N. C.	MO9318
Test Requested	;	In accordance with the RoHS Directive 2011/65/EU

1) With Reference to IEC 62321-2:2013, disassembly, disjointment and mechanical sample preparation

2) With Reference to IEC 62321-3-1:2013, screening - Lead, mercury, cadmium, total chromium and total bromine by X-ray fluorescence spectrometry

3) With reference to IEC62321-4:2013, determination of Mercury by ICP-OES

4) With reference to IEC62321-5:2013, determination of Lead and Cadmium by ICP-OES

5) With reference to IEC 62321: 2008 and IEC 62321-7-1:2015, determination of Hexavalent Chromium by UV-Vis

6) With reference to IEC62321-6:2015, determination of PBBs and PBDEs by GC-MS

Dino Zhang / Lab Manager

Test Conclusion..... Based on the performed tests on the submitted samples, the results

comply with the RoHS Directive 2011/65/EU

Date of Receipt sample 2017-11-01 & 2017-11-21 Date of Test 2017-11-01 to 2017-11-23

Date of Issue 2017-11-27

Test Result Please refer to next page (s)

Remarks:

The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

Prepared By:

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Waltek Services (Foshan) Co., Ltd.

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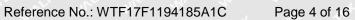
Test Results:

Part No.	Part Description	Result	of XRF	Result of Wet Chemical Testing (mg/kg)	Conclusion on RoHS
- EX-	TEX ITEX LITER OLITE A	Cd	BL		Et
	me me me	Pb	BL	alter wife white	Whi. M
1	Silvery metal sleeve of bearing	Hg	BL	NA	Comply
	rie auti mi mi mi	Cr	BL	TEX TEX TIES	NITE WAL
1,		Br	BL	Mir Mr Mr 1	, 4,
S	EL SLIFE WILL MULT WALL	Cd	BL	at at let	IEK LIE
Me	10, 10,	Pb	BL	Ni MULL WALL WA	211.
2	Brown plastic ring of bearing	Hg	BL	NA	Comply
In Line	Mur Mr M. M.	Cr	BL	ill alter with while	WILL
	it let tet tet t	Br	M BL	20, 20,	. +
ie.	Write Muris And And And	Cd	BL .	t TEX TEX STEE	WILL ON
		Pb	BL	Wer Mer Mr.	22. 7.
3	Silvery metal bead of bearing	Hg	BL	NA NA	Comply
In.	in in	Cr	BL	of the plant of the plant of	1/1
	t let itet it mile	Br W	BL		et et
2017	mer me m	Cd	BL	THE NITE WITE WAL	WY
.L	at let a stell	Pb	BL	- 141, 121, 12, 1	
4	Black plastic shell	Hg	BL	NA NA	Comply
	n the	Cr	BL	wer. The Me	11. 1
EX	TEX SLIER CLIER	Br	BL	the state of	TEX
1	. 20. 20.	Cd	BL	Will will with a	in m
	ex tex tex life	Pb	BL	7. 7. 4	et e
5	Black plastic cover	Hg	BL	NA NA	Comply
	A LEX TEXT	Cr	BL		1
LIE		Br	BL	t all the life	e alter
31		Cd	BL N	in the things	70.
TEX	THE V A V SO TO	Pb	BL	- A FIFT TEN	TEX
6	Red plastic wire covering	Hg	BL	NA	Comply
+	LEK TEK TEK STEK JAN	Cr	BL		it is
اله	is were mur and	Br	# BL	TEX LIFE OLIVE	Li' MIL
	L A AT THE THE	Cd	BL	M. M. M.	1. 1
	with white with white	Pb	BL	Let tet tet	Er Wile.
7	Silvery metal wire	Hg	BL	NA NA	Comply
TEX	ITER OLIER WIFE WHILE	Cr	BL		TEX
	Mr. Mr. M.	Br A	BL	E WILL WILL MULT	Mr. 1
.*	LEX TEX TEX STEEL WA	Cd	BL	70 1	ex
	by my my my	Pb	BL	TER STEE STEE	UNL! WIN
8	White plastic wire covering	Hg	BL	NA	Comply
	THE MALL WALL WILL	Cr	BL	et tet tet	TER OUTE
111,	70.	Br	BL	in our wife in	21,



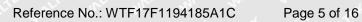
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Part No.	Part Description	Result	of XRF	Result of Wet Chemical Testing (mg/kg)	Conclusion on RoHS
	TEX TEX STER STILL	Cd	BL	1 1	Et.
	mer me me m	Pb	BL	alter white white	WILL M
9	Blue plastic wire covering	Hg	BL	NA	Comply
	File Muli Mur. Mur. Aug.	Cr	BL	TEX LIEX LIER	NITE WALT
72,	. I A A A	Br	BL	21/27. 21/2. 21/2. 2	
٠ .	ex with with white wall	Cd	BL	at let let	EK STEE
	711, 72, 7	Pb	BL	of while when who	2/1
10	Black plastic wire covering	Hg	BL	NA	Comply
	mer mer my m	Cr	BL	ie alter miter wall	WILL V
	at let tet tet t	Br	on Bran	20, 20, 2,	
TE	write were my my	Cd	BL	t let tet liet liet	WITE WILL
		Pb	BL	Wr. Aur Aur.	20, 7,
11	Silvery metal shell of USB socket	Hg	BL	NA NA	Comply
	20, 20, 2,	Cr	BL	write white where we	
	t ret ret is oute	Br	BL		et et
W.	"Mr. Mr. 24, 25,	Cd	BL	I'M LIET WITE IN	W.C.
	A A A	Pb	BL	20, 20, 20,	.4
12	White plastic base of USB socket	Hg	BL	NA NA	Comply
	n t	Cr	BL	whi we we	
	TEX LIER OLIER WAY	Br	BL	t at at	JEX S
` \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	. 14 1, 1	Cd	BL	alle antitament	in m
	COUNTY THE COUNTY CHOOL	Pb	BL	4, 4, 1	1 1t
13	Silvery-golden metal pin of USB socket	Hg	BL	NA NA	Comply
	Socket	Cr	S BL		
	To The street of	Br	BL		
211		Cd	BL N	in Mus. My	10, 0
	THE VIEW OF	Pb	BL	The set set	TEX
14	Solder	Hg	BL	NA	Comply
	EX LEX LIEX IN	Cr	BL	7, 7,	.* A
	Lit while and any	Br	→ BL→	TEX LIER SLIER	LITE WALT
		Cd	BL	Mr. M. W.	,
	il nutter muite wall wall	Pb	BL	et let let l	EX CLIER
15	Solder	Hg	BL	NA	Comply
et	TEX STEX STEEL	Cr	BL		TEX
	me me m	Br A	BL	E WITE WITE WALL	WY. W
٠,	at at the terms	Cd	BL	40, 4,	at-
	WILL MULL MUT MY	Pb	BL BL	- THE BOOK NO. LINE	UNLIL WAL
16	Off-white PCB with green coating	Hg	BL	PBBs :ND	Comply
	THE NITE WILL WILL WILL	Cr	BL	PBDEs :ND	TEK LIE
	70, 21, 2	Br	IN	The spring war, we	211



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Part No.	Part Description	Result	of XRF	Result of Wet Chemical Testing (mg/kg)	Conclusion on RoHS
	TEX TEX STEE STILL ST	Cd	BL		Et.
	mer me me m	Pb	BL	alter wife while	WILL WI
17	Silvery metal shell of socket	Hg	BL	NA	Comply
	Tite Muri Muri Muri Muri	Cr	BL	TEX TEX LIER	ALTE: MIT
		Br	BL	the me me in	
	Et site with whi whi	Cd	BL	at at let i	CENT LIE
	111 111 11	Pb	BL	Nit wall was war	alle
18	Dark grey plastic base of socket	Hg	BL	NA	Comply
	mi mi me m	Cr 🖈	BL	ie liek alier antil	WILL
	at at let let o	Br	M BLM	24, 24, 25	
JE	all with which was an	Cd	L BL	t let tek tek	WILL WI
		Pb	BL	Will MUT. MUT.	211. 22.
19	Silvery-golden metal pin of socket	Hg	BL	NA NA	Comply
	21/4 211, 20	Cr	BL	outer white white we	ir. Mr.
	t let tet to still	Br	BL	70	
anti.	"ALT ME THE ON	Cd	BL	THE LIFE WIFE MI	WALL
	THE THE THE	Pb	BL	in in in	
20	Chip IC	Hg	BL	NA NA	Comply
	in in	Cr	BL	aury aur au	
	TEX LIEX SLIEN SAN	Br BL		LEX S	
	F. 24, 20, 3	Cd	BL	alle with wall a	in m
	at let tex item	Pb	IN	4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4	it it
21	Chip resistor	Hg	BL	Pb :755	Comply
	A A A A A	Cr	arin s	Cr ⁶⁺ :ND	
	The will sell to	Br	BL	t sex tex the	A CLIER
in.	2, 2, 1	Cd	BL N	in the the	20)
	TEL ST P	Pb	BL	the state of the s	LEX.
22	Chip capacitor	Hg	BL	NA	Comply
	at let get get out	Cr	BL	- m - m - m	× .0
	The wall man my	Br Bl	→ BL→	TEX STEX STEE	LITE MILL
		Cd	BL	My My My 2,	
	et alien with wall wall	Pb	BL	at at all o	EX LIET
23	Chip capacitor	Hg	BL	NA WAY	Comply
+	TEX ITEX STEEL OUTER ON	Cr	BL	e stiek witek wite	- LEX
	All All All All	→ Br →	BL		WILL W
4	of the text the	Cd	BL	24, 25,	×
	Will Mary Mary Mary M	Pb	L IN	- TEX TEX TIES	WILL WIL
24	Solder	Hg	BL	Pb :416	Comply
	THE STEEL WITE MUTT MUTT	Cr	BL	at at at	TEX LIE
	711, 711	Br	BL	OTE WILL WALL WA	all.



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Part No.	Part Description	Result	of XRF	Result of Wet Chemical Testing (mg/kg)	Conclusion on RoHS
+	TEX TEX LITE OUT OF	Cd	an Br	t et	Et
	with me me a	Pb	BL	Cr ⁶⁺ :ND	White M
25	Chip resistor	Hg	BL	PBBs :ND	Comply
	life while while when wh	Cr	L IN A	PBDEs :ND	ALTER MIT
111	A ST ST	Br	IN	MILL MILL MILL A	100
	EX SITES WITE MALL MALL	Cd	BL	at at all a	EK JET
MUL	201, 20, 20, 20, 20, 20, 20, 20, 20, 20, 20	Pb	BL	ntite wat was	" "
26	Solder	Hg	BL W	NA NA	Comply
INLIT	min my my	Cr	BL	CE LIEK OLIEK MITE	MILL
	t at let let let	Br	M BLM	- 20 20 20 20 20 20 A	
TE	WILL MULL MULL MULL AND	Cd	BL	t let let let	WITE IN
1		Pb	BL	Wri MUT MUT	20, 20,
27	Yellow PCB with green coating	Hg	BL	NA NA	Comply
un	My My My	Cr	BL	outer while while we	
	x let get of action	Br W	BL	2, 2,	
	Mrs. Mrs. Mrs. Mrs.	Cd	BL	THE LIFE WIFE MI	W/L
70.	A A A	Pb	BL W	The this is	
28	White plastic shell of plug	Hg	BL	NA VINITES	Comply
		Cr	BL		
EX		Br	BL		at 3
12	in the state of	Cd	BL	alie alie and	ic, m
	at let tex item	Pb	BL	4, 2, 2,	xx
29	Silvery metal shell of plug	Hg	BL	Cr ⁶⁺ :Negative	Comply
10.	A SET SET	Cr	an'IN s	t et tet tet	t SITEK
TE	The wall of	Br	BL		
711		Cd	BL	in the Music Music	20, 3
EX	Tet V S S	Pb	BL	the state of the s	LET .
30	Dark grey plastic sheet of plug	Hg	BL	NA	Comply
L	IN THE THE THE MY	Cr	BL	-1/1, 1/2, 1	x .0
· 10	rie while mur and	Br	→ BL→	TEX TEX STEE	LIE WILL
		Cd	BL	My My My 3,	
	ex sites with white wall	Pb	BL	The set of	EX LIER
31	Silvery metal pin of plug	Hg	BL	NA NA	Comply
,et	TEX ITEX LITER MITE	Cr	BL		- LEX
Vr.	me me m	Br A	BL	e liet aliet anit	WILL W
	it it to the	Cd	BL	20, 20, 20	A.
I E	Will mi me w	Pb	BL	- TEX JEX JEX	WILE WI
32	Solder of plug	Hg	BL	NA W	Comply
+	THE SLIFE WITE WALL	Cr	BL	at at at	TEX JE
MU	21/2 21, 22	Br	BL	WIE WILL WALL WA	all.



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		V	1
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Part No.	Part Description	Result	of XRF	Result of Wet Chemical Testing (mg/kg)	Conclusion on RoHS
.e.t	THE THE LIFE WITE WA	Cd	BL		et
	aver aver any and	Pb	BL	alter white	
33	White plastic shell of USB plug	Hg	BL	NA	Comply
	life while whi was who	Cr	BL	TEX TEX TEX	
	the state of the s	Br	BL	" The same of	
٠ .	et alte with wall wall	Cd	BL	at at let .	CEK LIFE
	Oibran and dan markal air at UCD	Pb	BL	ni wali wali wa	
34	Silvery-golden metal pin of USB	Hg	BL	NA	Comply
	plug	Cr	BL	ie lier with with	
	at at ret ret of	Br	W BLV	211, 21, 2,	
JE.	WILL MULL MUT AND AND	Cd	BL	t let let lier	المان المان
		Pb	BL	DDD: ND	
35	White plastic sheet of USB plug	Hg	BL	PBBs :ND	Comply
	An An A	Cr	BL	PBDEs :ND	
	t tex tex its writer	Br W	IN	20	
WILL	Mur Mr Mr	Cd	BL	it the nite and	Wer
	at at a	Pb	BL	1/11/20	
36	Solder of USB plug	Hg	BL	NA NA	Comply
		Cr	BL		
CEX	TEX SLIER OLIFE WAY	Br	BL	at at at	TEX
ال		Cd	BL	With whi whi ?	in in
	EX TEX TEX TIES	Pb	BL	7	
37	Black plastic wire jacket	Hg	BL	NA V	Comply
	It let telt telt	Cr	S BL S		
		Br	BL	to the time	, Clift
	A A A A Y A	Cd	BL N	T. Mur. Mr.	
	TEL Y	Pb	BL	- A LEY TEX	
38	White plastic wire covering	Hg	BL	NA	Comply
	TEX TEX LIEX SLITER SIN	Cr	BL		
11	is were we will be	Br	BL	TEX LIFE OLIV	NI MAL
,	t at let tet tet	Cd	BL		1 1
	white wall was with	Pb	BL	et tet tet	
39	Coppery metal wire	Hg	BL	NA NA	Comply
	LIER OLIEN WILL MULTER	Cr	BL		
Nr.	Mr. M. M.	Br Br	BL	ie with with wall	Mr. 1
	LEX TEX TEX LITER OF	Cd	BL	77.	it.
	VI ME ME ME	Pb	BL	- LIER SLIER SLIER	
40	Green plastic wire covering	Hg	BL	NA	Comply
	TEL MALL WALL WILL WILL	Cr	BL	Et TET TET	
	20, 7	Br	BL	The Maria Maria	





Part No.	Part Description	Result of XRF		Result of Wet Chemical Testing (mg/kg)	Conclusion on RoHS
J.t	Let JEK JEG WITE I	Cd	BL	to the	EX
	mil mr mr m	Pb	BL &	LIER WILL WILL	White M
41	Blue plastic shell	Hg	BL	NA	Comply
	File Muli Muli Muli Muli	Cr	BL	TEX TEX TEXT	alie anii
		Br	BL	at in the the	7
- ح	et alle alle and and	Cd	BL	at alt all a	CENT LIE
	m n	Pb	BL	right war. war	Me
42	White plastic shell	Hg	BL	NA NA	Comply
unite Juni	wer me me	Cr	BL	- LIER OLIE WILL	
	A cet set set	Br	n BL	14, 14, 1	
JET 1	write were and an	Cd	BL	TEX LIER LIFE	WILL WILL
		Pb	BL	rur, when any	20, 2,
43	Silvery coating of plastic shell	Hg	BL	NA NA	Comply
		Cr	BL		
,4	t tet itet it mite	Br w	BL		
WILL	mur mr m	Cd	BL	TEX SLIEN WILL WALL	WILL
	White plactic shall without silvery	Pb	BL 5		*
44	White plastic shell without silvery coating	Hg	BL	NA NA	Comply
20	Coaling	Cr	BL	Wer were an	20, 2,
EX	THE STATE OUTE	Br	BL	at at at	TEX J
11	24 4.	Cd	BL	WILL MALL A	14.
	Plack plactic shall without silvery	Pb	BL	NA NA	Comply
45	Black plastic shell without silvery coating	Hg	(BL		
	Coating	Cr	BL N		1
	The state of the s	Br	BL	- BY TELL ITE	LITE



Remark:

Reference No.: WTF17F1194185A1C

(1) Results are obtained by EDXRF for primary screening, and further chemical testing by ICP (for Cd, Pb, Hg), UV-VIS (for Cr6⁺) and GC-MS (for PBBs, PBDEs) is recommended to be performed, if the concentration exceeds the below warning value according to IEC 62321-3-1: 2013 (unit: mg/kg)

Element	Polymer	Metal	Composite Materials
Cd	BL ≤ (70-3σ) < IN < (130+3σ) ≤ OL	BL ≤ $(70-3\sigma)$ < IN < $(130+3\sigma)$ ≤ OL	LOD < IN < (150+3σ) ≤ OL
Pb	$BL \le (700-3\sigma) < IN < (1300+3\sigma) \le OL$	BL ≤ (700-3σ) < IN < (1300+3σ) ≤ OL	BL ≤ (500-3σ) < IN < (1500+3σ) ≤ OL
Hg	$BL \le (700-3\sigma) < IN < (1300+3\sigma) \le OL$	$BL \le (700-3\sigma) < IN < (1300+3\sigma) \le OL$	BL ≤ (500-3σ) < IN < (1500+3σ) ≤ OL
Cr	BL ≤ (700-3σ) < IN	BL ≤ (700-3σ) <in< td=""><td>BL ≤ (500-3σ) < IN</td></in<>	BL ≤ (500-3σ) < IN
Br	BL ≤ (300-3σ) < IN	Et Write Murie Muri M	BL ≤ (250-3σ) < IN

BL= Below Limit

OL= Over Limit

LOD = Limit of Detection

-- = Not Regulated

- (2) "IN" expresses the inconclusive region, and further chemical testing to confirm whether it complies with the requirement of RoHS Directive.
- (3) The XRF screening test for RoHS elements the reading may be different to the actual content in the sample be of non-uniformity composition.
- (4) ppm = mg / kg, based on the dry weight of tested sample.
- (5) ND = Not Detected, less than the value of Method Detection Limit.
- (6) NA = Not Applicable, as the XRF screening test result was below the limit, it was not need to conduct the wet chemical testing.
- (7) MDL= Method Detection Limit in wet chemical test

	Test Items	Pb	Cd	Hg	Cr ⁶⁺		PBB	PBDE
	Units	mg/kg	mg/kg	mg/kg	mg/kg	μg/cm ²	mg/kg	mg/kg
5	MDL	2.50	2	2	2	0.1	5	5 4

The MDL for single compound of PBBs and PBDEs is 5mg/kg, MDL of Cr⁶⁺ for polymer and composite sample is 2mg/kg and MDL of Cr⁶⁺ for metal sample is 0.1µg/cm².

(8) According to IEC 62321-7-1:2015, determined of Cr⁶⁺ on metal sample by boiling water extraction test method, and result is shown as Positive/Negative.

Boiling water extraction:

Negative = Absence of Cr^{6+} coating, the detected concentration in boiling water extraction solution is less than $0.10 ug/cm^2$.

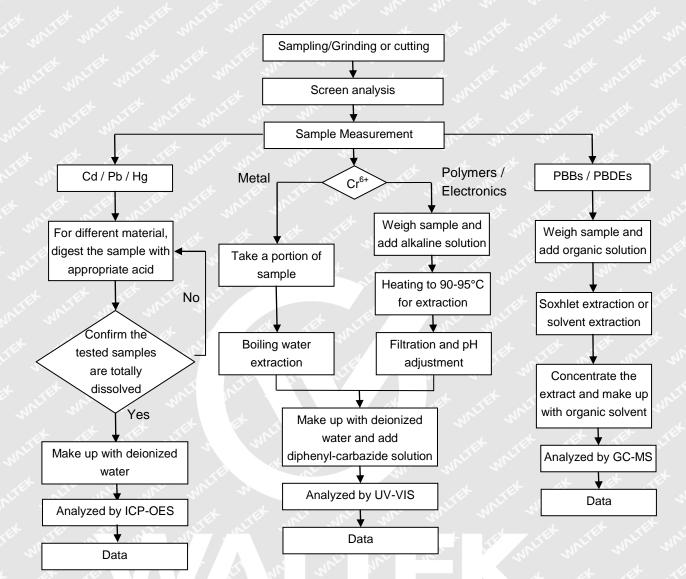
Positive = Presence of Cr⁶⁺ coating, the detected concentration in boiling water extraction solution is greater than 0.13ug/cm².

Information on storage conditions and production date of the tested sample is unavailable and thus Cr⁶⁺ results represent status of the sample at the time of testing.

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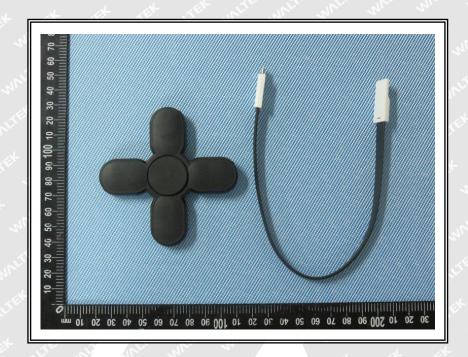
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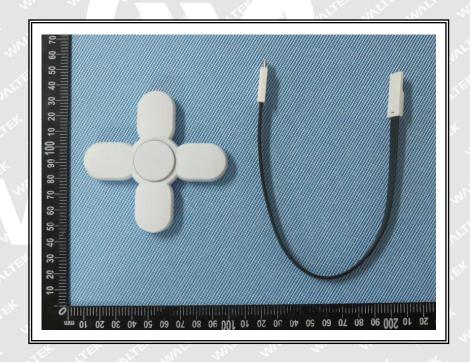
Measurement Flowchart:



Sample Photo:

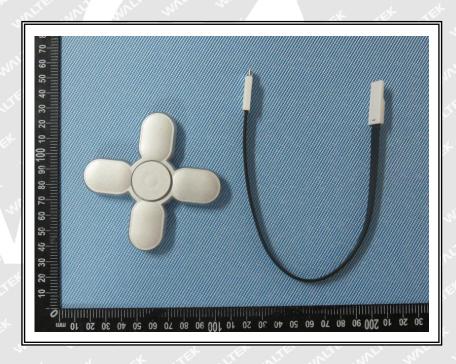






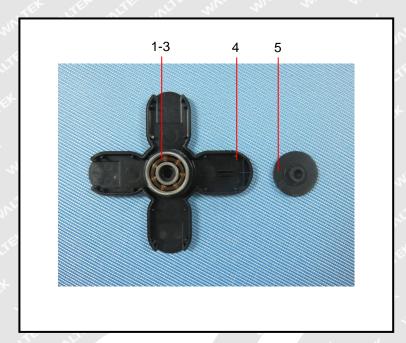


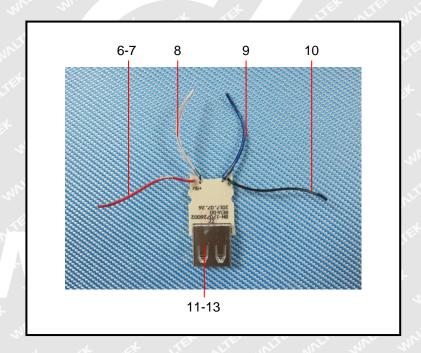




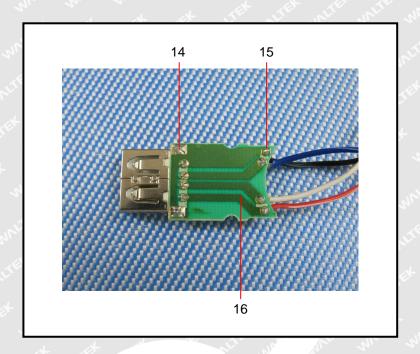
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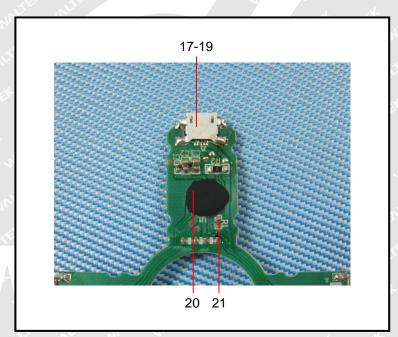
Photograph of parts tested:



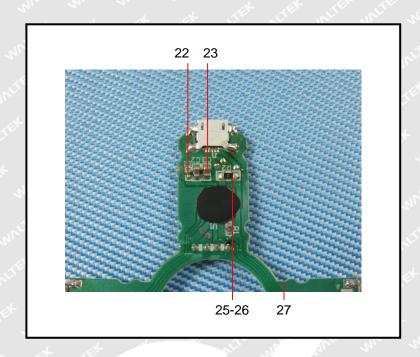


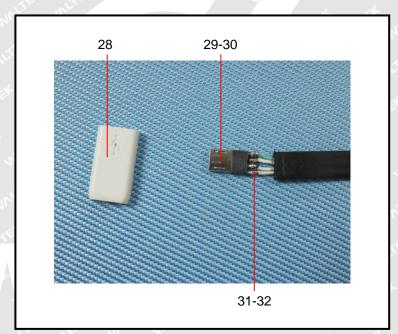




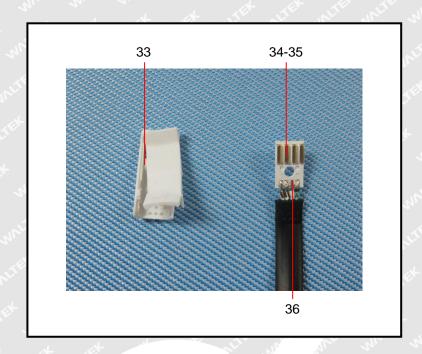


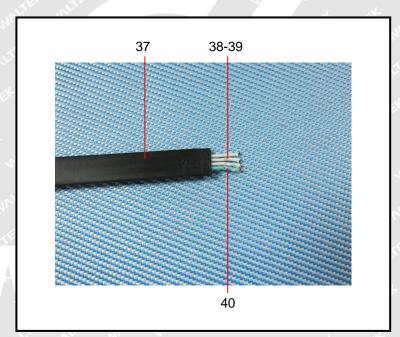




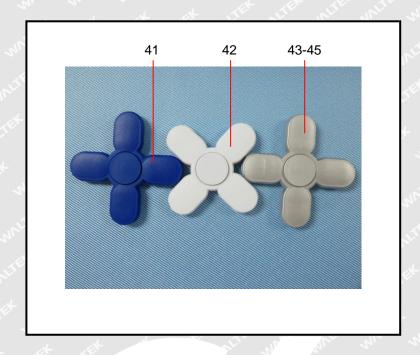


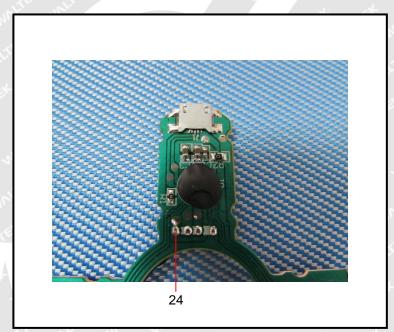












===== End of Report =====