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### APPLICANT

DATE OF SUBMISSION

### **TEST PERIOD**

## SAMPLE DESCRIPTION

Other information :

Model No. : Buyer: Trade name : : Shenzhen Interthings Technology Co., Ltd. Room 303-305, T3 Building, Silicon Valley Compound, Longhua District, Shenzhen, China.

- : 19 Aug 2019
- : 19 Aug 2019 to 27 Sep 2019
- : IP Camera IPC159 / OKAA

/

## SUMMARY OF TEST RESULTS

TEST REQUESTED	CONCLUSION	REMARK
European Council Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS)	PASS	-
Phthalates Content – European Council Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) with its Amendments up to EU No. 2015/ 863 Annex II	PASS	-

GUANGDONG EST TECHNOLOGY CO., LTD.

Spark Zhang nolo Manager, Chemical Departmen

#### <u>REMARK</u>

If there are questions or concerns on this report, please contact the following persons:Report Enquiry:(86) 83081888 Ext. 618E-mail: gdest@gdest.cn

Business Contact: (86) 83081888



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## 1. Material List

Test Item(s)	Sample Photo	Item / Component Description(s)	Location(s)	Style(s)
001		White plastic	Case, IP camera	-
002		White plastic	Cover, IP camera	-
003		White plastic	Holder, IP camera	-
004		Silvery metal	AC plug	-
005	4	Translucent glue	Glue	-
006		Black coated silvery metal	Screw, case, IP camera	-
007		Red/white plastic	Switching, case IP camera	-
008		White plastic	Case, camera head	-
009		White plastic	Holder, camera head	-
010		Black coated silvery metal	Case, camera head	-
011		Transparent color body	Glass patch	-
012		Transparent body	Camera head	-
013		Black plastic	Holder, camera	-
014		Blue plastic	Patch, information belt	-
015		Blue printed white plastic	Information belt	-
016	· · · · · · · · · · · · · · · · · · ·	Black plastic	Protection sleeve	-
017		White plastic	Connector	-
018		Black plastic	Holder, connector	-
019		Silvery metal	Horn, connector	-
020		Transparent body	U11	-
021		Black body	SMD diode	-



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Test Item(s)	Sample Photo	Item / Component Description(s)	Location(s)	Style(s)
022		Black body	SMD IC	-
023	DA B	Brown body	SMD capacitor	-
024	11111	Green plastic	PCB	-
025		Black plastic with adhesive	Adhesive tape	-
026		Silvery metal	Case, antenna	-
027		White plastic	Ring, antenna	-
028		Black soft plastic	Sleeve, antenna	-
029	•••	Silvery metal	Gasket, antenna	-
030	2	Silvery solder	Solder, PCB	-
031		Green plastic	РСВ	-
032		Black printed coppery plastic	Adhesive tape	-
033		Silvery metal	Screw	-
034		White plastic	Connector	-
035		Silvery metal	Horn, connector	-
036		Red soft plastic	Insulation	-
037		Black soft plastic	Insulation	-
038		Silvery metal	Wire	-
039	e e	Black plastic	Frame, speaker	-
040		Silvery metal	Magnet	-
041		Silvery metal	Cover, speaker	-
042		Transparent plastic	Dust cap	-



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Test Item(s)	Sample Photo	Item / Component Description(s)	Location(s)	Style(s)
043		Coppery metal	Coil of speaker	-
044		Black plastic	Net, speaker	-
045	07	Black glue	Glue	-
046		Silvery solder	Solder, contact plate	-
047		Gray soft plastic	Cable jacket	-
048		Transparent plastic	Insulation	-
049		Silvery metal	Wire	-
050		Silvery solder	Solder ,wire	-
051		Coppery metal	Information belt	-
052		Silvery metal	Patch	-
053		Black soft foam with adhesive	Adhesive tape	-
054		Green plastic	РСВ	-
055		Red soft plastic	Insulation	-
056		Black soft plastic	Insulation	-
057		Silvery metal	Wire	-
058		Silvery metal	Case, SD card, PCB	-
059		Black plastic	Holder, SD card, PCB	-
060		Silvery metal	Horn, SD card, PCB	-
061		Transparent white plastic	LED	-
062		Black plastic	Button, PCB	-
063		Silvery metal	Case, button, PCB	-



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Test Item(s)	Sample Photo	Item / Component Description(s)	Location(s)	Style(s)
064		White plastic	Holder, button, PCB	-
065		Silvery metal	Gasket, button, PCB	-
066		Silvery metal	Horn, button, PCB	-
067		Rice white plastic	Connector	-
068		Silvery metal	Horn, connector	-
069		Black body	SMD IC	-
070		Black body	SND board	-
071		Gray body	SMD inductance	-
072		Black body	SMD diode	-
073		Brown body	SMD capacitor	-
074		Silvery solder	Solder, PCB	-
075		Green plastic	РСВ	-
076		Red soft plastic	Insulation	-
077		Black soft plastic	Insulation	-
078		Silvery metal	Wire	-
079		White printed black plastic	Electrolytic capacitor sleeve	-
080		Silvery metal	Electrolytic capacitor shell	-
081	A	Black soft plastic	Rubber seal	-
082		Grey metal	Aluminum foil	-
083		Silvery metal	Aluminum foil	-
084		Brown paper	Electrolytic paper	-



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Test Item(s)	Sample Photo	Item / Component Description(s)	Location(s)	Style(s)
085		Silvery metal	Pin of electrolytic capacitor	-
086		Coppery printed green plastic	Electrolytic capacitor sleeve	-
087		Yellow plastic with adhesive	Adhesive tape of transformer	-
088		Black plastic	Frame of transformer	-
089		Coppery metal	Wire	-
090		Black metal	Magnet	-
091		Coppery metal	Coil of transformer	-
092	A	Green body	Inductance	-
093		Gray body	FR1	-
094		Blue body	Capacitor	-
095		Silvery metal	AC contact plate	-
096		Black body	SMD BD1	-
097		Silvery solder	Solder, PCB	-
098		Brown printed green plastic	РСВ	-
099	0	Transparent soft plastic	Ring	-
100		Black plastic	Case, IP camera	-
101		Black plastic	Cover, IP camera	-
102		Black plastic	Holder, IP camera	-
103	1	Silvery metal	AC plug	-



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Test Item(s)	Sample Photo	Item / Component Description(s)	Location(s)	Style(s)
104		Bright black plastic	Cover, IP camera	-
105		Bright black plastic	Case, camera head	-
106		Black plastic	Holder, camera head	-
107		Black plastic	Button, IP camera	-



Test Report

### 2. Test Result

### 2.1: XRF Screening test results

Test Method: Cadmium, Lead, Mercury, Chromium, Bromine

-With reference to IEC 62321-3-1: 2013 -XRF Screening Procedure

Instrument: Energy dispersive X-ray fluorescence spectrometer

	ppm[mg/kg]				
	Pb	Cd	Hg	Cr	Br
Material No.			Limit (mg/kg)		
	1000	100	1000	Cr VI:1000	PBB: 1000 PBDE: 1000
001	ND	ND	ND	ND	ND
002	ND	ND	ND	ND	D(*1)
003	ND	ND	ND	ND	ND
004	ND	ND	ND	ND	NA
005	ND	ND	ND	ND	ND
006	ND	ND	ND	D(*3)	NA
007	ND	ND	ND	ND	ND
008	ND	ND	ND	ND	ND
009	ND	ND	ND	ND	ND
010	ND	ND	ND	D(*3)	NA
011	ND	ND	ND	ND	ND
012	ND	ND	ND	ND	ND
013	ND	ND	ND	ND	ND
014	ND	ND	ND	ND	ND
015	ND	ND	ND	ND	D(*1)
016	ND	ND	ND	ND	ND
017	ND	ND	ND	ND	ND
018	ND	ND	ND	ND	ND
019	ND	ND	ND	ND	NA
020	ND	ND	ND	ND	ND
021	ND	ND	ND	ND	ND
022	ND	ND	ND	ND	ND
023	ND	ND	ND	ND	ND
024	ND	ND	ND	ND	D(*1)
025	ND	ND	ND	ND	ND
026	ND	ND	ND	ND	NA
027	ND	ND	ND	ND	ND
028	ND	ND	ND	ND	ND
029	ND	ND	ND	ND	NA
030	ND	ND	ND	ND	NA
031	ND	ND	ND	ND	D(*1)
032	ND	ND	ND	ND	ND
033	ND	ND	ND	D(*3)	NA



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034	ND	ND	ND	ND	ND
035	ND	ND	ND	ND	NA
036	ND	ND	ND	ND	ND
037	ND	ND	ND	ND	ND
038	ND	ND	ND	ND	NA
039	ND	ND	ND	ND	ND
040	ND	ND	ND	ND	NA
041	ND	ND	ND	ND	NA
042	ND	ND	ND	ND	ND
043	ND	ND	ND	ND	NA
044	ND	ND	ND	ND	ND
045	ND	ND	ND	ND	ND
046	<500	ND	ND	ND	NA
047	ND	ND	ND	ND	ND
048	ND	ND	ND	ND	ND
048	ND	ND	ND	ND	NA
050	ND	ND	ND	ND	NA
050	ND	ND	ND	ND	NA
051	ND	ND	ND	D(*3)	NA
052	ND	ND	ND	ND	ND
053	ND	ND	ND ND	ND	D(*1)
055	ND	ND	ND	ND	ND
055			ND	-	ND
038	ND	ND		ND	
057	ND ND	ND ND	ND ND	ND	NA
				D(*3)	NA
059	ND ND	ND	ND	ND	ND
060		ND	ND	ND	NA
061	ND	ND	ND	ND	ND
062	ND	ND	ND	ND	ND
063	ND	ND	ND	ND	NA
064	ND	ND	ND	ND	ND
065	ND	ND	ND	ND	NA
066	ND	ND	ND	ND	NA
067	ND	ND	ND	ND	ND
068	ND	ND	ND	ND	NA
069	ND	ND	ND	ND	ND
070	ND	ND	ND	ND	ND
071	ND	ND	ND	ND	ND
072	ND	ND	ND	ND	ND
073	ND	ND	ND	ND	ND
074	ND	ND	ND	ND	NA
075	ND	ND	ND	ND	D(*1)
076	ND	ND	ND	ND	ND
077	ND	ND	ND	ND	ND
078	ND	ND	ND	ND	NA
079	ND	ND	ND	ND	ND



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				6	
080	ND	ND	ND	ND	NA
081	ND	ND	ND	ND	ND
082	ND	ND	ND	ND	NA
083	ND	ND	ND	ND	NA
084	ND	ND	ND	ND	ND
085	ND	ND	ND	ND	NA
086	ND	ND	ND	ND	ND
087	ND	ND	ND	ND	ND
088	ND	ND	ND	ND	ND
089	ND	ND	ND	ND	NA
090	ND	ND	ND	ND	NA
091	ND	ND	ND	ND	NA
092	ND	ND	ND	ND	ND
093	ND	ND	ND	ND	ND
094	ND	ND	ND	ND	ND
095	ND	ND	ND	ND	NA
096	ND	ND	ND	ND	ND
097	<500	ND	ND	ND	NA
098	ND	ND	ND	ND	D(*1)
099	ND	ND	ND	ND	ND
100	ND	ND	ND	ND	ND
101	ND	ND	ND	ND	ND
102	ND	ND	ND	ND	ND
103	ND	ND	ND	ND	NA
104	ND	ND	ND	ND	ND
105	ND	ND	ND	ND	ND
106	ND	ND	ND	ND	ND
107	ND	ND	ND	ND	ND

Remark:

-mg/kg is equal to ppm (parts per million)

(\*1) The screening result was found in the inconclusive region, thus the further wet chemistry tests are suggested.

(\*2) The screening result was found above the limit, thus the further wet chemistry tests are suggested.

(\*3) The chromium screening result was found in the inconclusive region, thus the further wet chemistry tests are suggested.

Matariala		(	Concentration (ppm)			
Materials	Cd	Cr	Pb	Hg	Br	
Metallic	BL≤70 < X≤130 <	BL≤700 < OL	BL≤700 <	BL≤700 <	NA	
Metallic	OL		$X \le 1300 < OL$	$X \le 1300 < OL$	INA	
Dolumorio	BL $\leq$ 70 < X $\leq$ 130 <	BL≤700 < OL	BL≤700 <	BL≤700 <	DL < 200 < V	
Polymeric	OL	BL≥/00 COL	$X \le 1300 < OL$	$X \le 1300 < OL$	BL≤200 < X	
Electronic	$\mathrm{DL} < \mathrm{X} {\leq} 150 < \mathrm{OL}$	$BL \leq 500 < OL$	BL≤700 <	BL≤500 <	BL≤200 < X	

Guidelines: XRF Screening limits for different matrices



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Compone		X≤1300 < OL	X≤1500 < OL	
nts				



### 2.2: Confirmation Test Results

Test Methods: for total Lead, Cadmium, Mercury

-Ref. to IEC 62321-4: 2013 & IEC 62321-5: 2013, analysis was performed by ICP-AES or AAS. For Hexavalent Chromium

-Ref. to IEC 62321-7-1: 2015, nalysis was performed by Spot-test and water-boiling procedure.(Metal)

-Ref. to IEC 62321-7-2: 2017, analysis was performed by UV/VIS(Polymeric and electronics).

-Ref. to International Standard ISO 17075: 2007(Leather and other materials).

For PBBs, PBDEs-Ref. to IEC 62321-6: 2015, analysis was performed by GC-MS.

	Pb	Cd	Hg	Cr(VI)	PBBs	PBDEs
Limit ppm (mg/kg)	1000	100	1000	1000	1000	1000

Material	ppm(mg/kg)					
No.	Pb	Cd	Hg	Cr(VI)	PBBs	PBDEs
002	-	-	-	-	ND	ND
006	-	-	-	Negative	-	-
010	-	-	-	Negative	-	-
015	-	-	-	-	ND	ND
024	-	-	-	-	ND	ND
031	-	-	-	-	ND	ND
033	-	-	-	Negative	-	-
052	-	-	-	Negative	-	-
054	-	-	-	-	ND	ND
058	-	-	-	Negative	-	-
075	-	-	-	-	ND	ND
098	-	-	-	-	ND	ND

Note / Key:

ND = Not Detected"D" = detected"]"X" = Inconclusive Range"DL" = Detection Limit"NA = Not Applicable10000 mg/kg = 1 %mg/kg = milligram(s) per kilogram = ppm = part(s) per millionDetection Limit : See Appendix.

"BL" = below Limit "OL" = over Limit



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## 2.3: Detection Limit

No. N		X-ray fluorescence (XRF) <sup>[a]</sup>				Maximum	
	Name of Analytes		Metallic /		Wet	Allowable Limit	
		Plastic	glass /	Others	Chemistry	(mg/kg)	
			ceramic				
1	Lead (Pb)	100	200	200	10	1000	
2	Cadmium (Cd)	50	50	50	10	100	
3	Mercury (Hg)	100	200	200	10	1000	
4	Chromium (Cr)	100	200	200	NA	NA	
5	Chromium VI (Cr VI)	NA	NA	NA	10 /See [a, b]	1000 / Negative <sup>[b</sup>	
6	Bromine (Br)	200	NA	200	NA	NA	
	Polybromobiphenyls (PBBs)						
	- Bromobiphenyl (MonoBB)						
	- Dibromobiphenyl (DiBB)						
	- Tribromobiphenyl (TriBB)						
	- Tetrabromobiphenyl (TetraBB)						
7	- Pentabromobiphenyl (PentaBB)	NA	NA	NA	Each 50	Sum 1000	
	- Hexabromobiphenyl (HexaBB)						
	- Heptabromobiphenyl (HeptaBB)						
	- Octabromobiphenyl (OctaBB)						
	- Nonabromobiphenyl (NonaBB)						
	- Decabromobiphenyl (DecaBB)						
	Polybromodiphenyl ethers (PBDEs)						
	- Bromodiphenyl ether (MonoBDE)						
	- Dibromodiphenyl ether (DiBDE)						
	- Tribromodiphenyl ether (TriBDE)						
	- Tetrabromodiphenyl ether (TetraBDE)						
8	- Pentabromodiphenyl ether (PentaBDE)	NA	NA	NA	Each 50	Sum 1000	
	- Hexabromodiphenyl ether (HexaBDE)						
	- Heptabromodiphenyl ether (HeptaBDE)						
	- Octabromodiphenyl ether (OctaBDE)						
	- Nonabromodiphenyl ether (NonaBDE)						
	- Decabromodiphenyl ether (DecaBDE)						
1]	The principle of this method was evaluated	and supported	l by two studies	organized b	y IEC TC 111 W	G3. These studies	
	were focused on detecting the presence of C	r VI in the co	rrosion protecti	on coatings of	on metallic samp	les.	
	Result(s) of Cr VI for metallic material(s) w		-		· · · · ·		
1	absence of Cr VI on the tested areas and the	result(s) was	(were) regarded	as in comp	liance with Euro	pean Parliament and	
0]	Council Directive 2011/65/EU, Article 4(1). While, positive means the presence of Cr VI on tested areas and the result(s)						



## BBP/DBP/DEHP/DIBP Content – European Council Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) with its Amendments up to EU No. 2015/ 863 Annex II

Test Methods:

With reference to International Standard IEC 62321-8, Sample was extracted with organic solvent and then analyzed by Gas Chromatograph Mass Spectrometer.

Test Item(s)	Item / Component Description(s)	Location(s)	Style(s)
001	White plastic	Case, IP camera	-
002	White plastic	Cover, IP camera	-
003	White plastic	Holder, IP camera	-
005	Translucent glue	Glue	-
007	Red/white plastic	Switching, case IP camera	-
008	White plastic	Case, camera head	-
009	White plastic	Holder, camera head	-
013	Black plastic	Holder, camera	-
014	Blue plastic	Patch, information belt	-
015	Blue printed white plastic	Information belt	-
016	Black plastic	Protection sleeve	-
017	White plastic	Connector	-
018	Black plastic	Holder, connector	-
024	Green plastic	РСВ	-
025	Black plastic with adhesive	Adhesive tape	-
027	White plastic	Ring, antenna	-
028	Black soft plastic	Sleeve, antenna	-
031	Green plastic	РСВ	-
032	Black printed coppery plastic	Adhesive tape	-
034	White plastic	Connector	-
036	Red soft plastic	Insulation	-
037	Black soft plastic	Insulation	-



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039	Black plastic	Frame, speaker	-
042	Transparent plastic	Dust cap	-
044	Black plastic	Net, speaker	-
045	Black glue	Glue	-
047	Gray soft plastic	Cable jacket	-
048	Transparent plastic	Insulation	-
053	Black soft foam with adhesive	Adhesive tape	-
054	Green plastic	РСВ	-
055	Red soft plastic	Insulation	-
056	Black soft plastic	Insulation	-
059	Black plastic	Holder, SD card, PCB	-
061	Transparent white plastic	LED	-
062	Black plastic	Button, PCB	-
064	White plastic	Holder, button, PCB	-
067	Rice white plastic	Connector	-
075	Green plastic	РСВ	-
076	Red soft plastic	Insulation	-
077	Black soft plastic	Insulation	-
079	White printed black plastic	Electrolytic capacitor sleeve	-
081	Black soft plastic	Rubber seal	-
086	Coppery printed green plastic	Electrolytic capacitor sleeve	-
087	Yellow plastic with adhesive	Adhesive tape of transformer	-
088	Black plastic	Frame of transformer	-
098	Brown printed green plastic	РСВ	-
099	Transparent soft plastic	Ring	-
100	Black plastic	Case, IP camera	-
101	Black plastic	Cover, IP camera	-
102	Black plastic	Holder, IP camera	-



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104	Bright black plastic	Cover, IP camera	-
105	Bright black plastic	Case, camera head	-
106	Black plastic	Holder, camera head	-
107	Black plastic	Button, IP camera	-



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Test Parameter:	BBP	DBP	DEHP	DiBP	-
Limit (%):	0.1	0.1	0.1	0.1	-
Test Item(s)	Result (%)				Conclusion
001	ND	ND	ND	ND	PASS
002	ND	ND	ND	ND	PASS
003	ND	ND	ND	ND	PASS
005	ND	ND	ND	ND	PASS
007	ND	ND	ND	ND	PASS
008	ND	ND	ND	ND	PASS
009	ND	ND	ND	ND	PASS
013	ND	ND	ND	ND	PASS
014	ND	ND	ND	ND	PASS
015	ND	ND	ND	ND	PASS
016	ND	ND	ND	ND	PASS
017	ND	ND	ND	ND	PASS
018	ND	ND	ND	ND	PASS
024	ND	ND	ND	ND	PASS
025	ND	ND	ND	ND	PASS
027	ND	ND	ND	ND	PASS
028+099	ND	ND	0.02	ND	PASS
031	ND	ND	ND	ND	PASS
032	ND	ND	ND	ND	PASS
034	ND	ND	ND	ND	PASS
036+037	ND	0.015	ND	ND	PASS
039	ND	ND	ND	ND	PASS
042	ND	ND	ND	ND	PASS
044	ND	ND	0.037	ND	PASS
045	ND	ND	ND	ND	PASS
047	ND	ND	ND	ND	PASS
048	ND	ND	ND	ND	PASS
053	ND	ND	ND	ND	PASS
054	ND	ND	ND	ND	PASS



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Test Parameter:	BBP	DBP	DEHP	DiBP	-
Limit (%):	0.1	0.1	0.1	0.1	-
Test Item(s)		Resu	lt (%)		Conclusion
055	ND	ND	ND	ND	PASS
056	ND	ND	ND	ND	PASS
059	ND	ND	ND	ND	PASS
061	ND	ND	ND	ND	PASS
062	ND	ND	ND	ND	PASS
064	ND	ND	ND	ND	PASS
067	ND	ND	ND	ND	PASS
075	ND	ND	ND	ND	PASS
076	ND	ND	ND	ND	PASS
077	ND	ND	ND	ND	PASS
079	ND	ND	ND	ND	PASS
081	ND	ND	ND	ND	PASS
086	ND	ND	ND	ND	PASS
087	ND	ND	ND	ND	PASS
088	ND	ND	ND	ND	PASS
098	ND	ND	ND	ND	PASS
100	ND	ND	ND	ND	PASS
101	ND	ND	ND	ND	PASS
102	ND	ND	ND	ND	PASS
104	ND	ND	ND	ND	PASS
105	ND	ND	ND	ND	PASS
106	ND	ND	ND	ND	PASS
107	ND	ND	ND	ND	PASS

#### Note / key:

BBP = Butyl benzyl phthalate (CAS No: 85-68-7) DEHP = Di(2-ethylhexyl) phthalate (CAS No: 117- DiBP = Diisobutyl phthalate (CAS No: 84-81-7) ND = Not detected % = percentmg/kg = milligram(s) per kilogram

Detection Limit (%): Each 0.005

DBP = Dibutyl phthalate (CAS No: 84-74-2) 69-5)

10000 mg/kg = 1 %

#### Remark:

- For medical devices and control instruments, effective date will be 22 July 2021.



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### 3.Photo of the Submitted Sample





### EST Technology authenticate the photo on original report only \*\*\* End of Report \*\*\*