WEEE Directive Compliance Report

Report No.: HS1407300011A **Date: 2014/08/12**

Client：
Datavideo Technologies Co.,Ltd.
10F. No. 176, Jian 1st Road Chung Ho City Taipei Hsien Taiwan, 235

Test Item：HD/SD PTZ Camera

Identification：PTC-120

Test Specification：WEEE Directive 2012/19/EU Article 11-Recovery t Targets

Test Result：All disassembling parts were fitted the requirements of WEEE Directive.

Test Laboratory：Integrated Service Technology Ltd.
Testing Location：1F, No.31, Pu-Ding Rd., Hsin-Chu City, 30072, Taiwan, R.O.C.

Grace Chen
Name of Analysis Institution

Wenston Lin
Report Review
On behalf of Integrated Service Technology

1、General Remarks

1.1 Complementary Materials

This report applies especially to **HD/SD PTZ Camera / PTC-120** of Datavideo Technologies Co.,Ltd. The testing sample is classified as **Category 3** under Annex IA of Directive 2012/19/EU. The photos of the testing sample are shown as follows.

Equipment Name / Model No.	HD/SD PTZ Camera / PTC-120
	
Front View	Side View

Total Weight(g)	1,890 g
Connection Technique	◆ Screw ◆ Snap ◆ Glue ◆ Connector
Connection Tools	◆ Philip Screwdriver ◆ Hand ◆ Slotted Screwdriver ◆ Long Nose Pliers
Disassembly Time(sec)	1,167 sec
Recommended Disassembly Sequence	See 4.2 Disassembly Sequence
Derivative Summary	See 5.2 Product 3R Calculation (Table 7)
Derivative Rate	See 5.3 Product Derivative Summary
Reuse/Recycling Rate	See 5.4 Test Result
Recovery Rate	See 5.4 Test Result
Estimated Treatment Value*	High
*Note	The estimated treatment value is evaluated by the breaking even dismantling weight

2、Background

2.1 RoHS 2.0 ,2011/65 /EU：See Table 1

Table 1: The Limit of Restraint Item

Restraint Item	Value (ppm)
Lead (Pb)	1,000
Cadmium (Cd)	100
Mercury (Hg)	1,000
Chromium VI (Cr^{6+})	1,000
Polybrominated Biphenyls (PBB)	1,000
Polybrominated Diphenylethers (PBDE)	1,000

2.2 WEEE, 2012/19/EU：See Table 2

Table 2 Reuse & Recovery Rate

No	Classification	Recycling	Recovery
III	IT and telecommunications equipment	65%	75%

3、Disassembly Principle

The product was disassembled into different parts which were major based on the treatment requirements as a set out in the WEEE Directive Annex II. Material substances, of which a recycling technology is not available or the recycling is not economy and feasible at present, are an assumed to be shredded, incinerated or disposed for landfill without further usage.

3.1 Selectively Treatment

As a minimum the following substances, preparations and components have to be removed from any separately collected WEEE：

- Polychlorinated biphenyls (PCBs) containing capacitors in accordance with Council Directive 96/59/EC of 16 September 1996 on the disposal of polychlorinated biphenyls and polychlorinated terphenyls (PCBs/PCTs)
- Mercury containing components, such as switches or backlighting lamps
- Batteries
- Printed circuit boards of mobile phones generally, and of other devices if the surface of the printed circuit board is greater than 10 square centimeters
- Toner cartridges, liquid and pasty, as well as colour toner
- Plastic containing brominated flame retardants
- Asbestos waste and components which contain asbestos
- Cathode ray tubes
- Chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs) or hydrocarbons (HCs)
- Gas discharge lamps
- Liquid crystal displays (together with their casing where appropriate) of a surface greater than 100 square centimetres and all those back-lighted with gas discharge lamps
- External electric cables
- Components containing refractory ceramic fibres as described in Commission Directive 97/69/EC of 5 December 1997 adapting to technical progress Council Directive 67/548/EEC relating to the classification, packaging and labeling of dangerous substances
- Components containing radioactive substances with the exception.

3.2 Material Classification

Table 3: Material Classification

Worksheets	The material definition	Recovery Attribute
Module Parts	Contained complex Material but with reused value through simple repair process	Reuse
Metal	Including metal of iron department , valuable alloy ,etc.	Recycling
Plastics	(1)Include pure plastics , mixed plastics ,etc.	Recycling & Recovery
	(2)Second surface Treatment (Without Hazardous Substance) or weight<25 g	Energy Recovery
Glass	(1)General glass	Recycling
	(2)Special-purpose processing glass (such as the leaded oxide glass)	Disposal

3.3 Directive 2012/19/EU Compliance Evaluation Flow

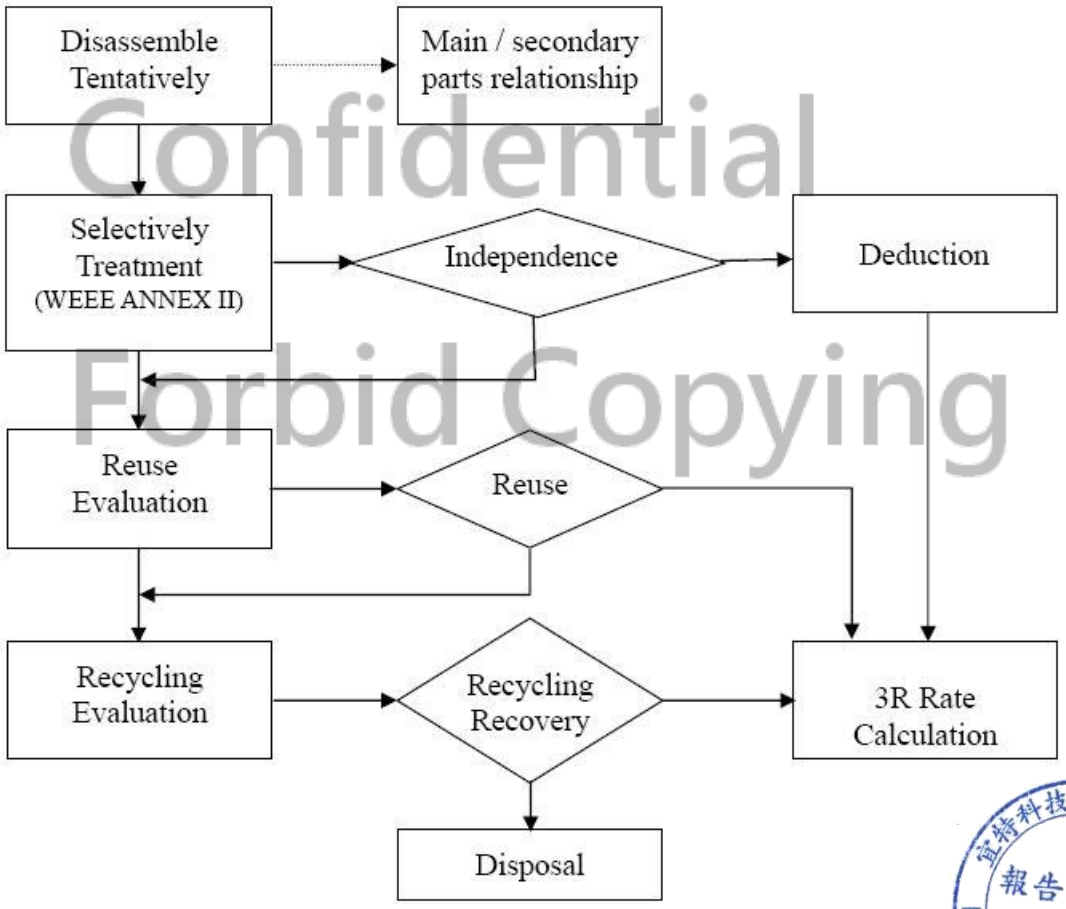


Figure 1: Directive 2012/19/EU Compliance Evaluation Flow

4、Product Component Disassembly Assessment

4.1 Disassembly Relationship

This product was composited of two sub-components：Body and Lens module Assy. and Bottom Base Assy. , Their relationships are shown as below (Figure 2).

Figure 2: The Disassembly Relationship of Tested Sample

All detailed information of disassemble product mentioned in Section 4.2.

4.2 Disassembly Sequence

The disassembly sequences of the two sub-assemblies are shown as Table 4~Table 5.

Table 4 Sub-assembly Assessment - Body and Lens module Assy.

Name	Body and Lens module Assy.	Characteristics
		• Component Numbers：43 • Total Disassembly Time：710 sec • Disassembly Sequence：From step 1 to 31 • Connection Technique： Screw、Snap、Glue、Connector • Disassembly Tools： Philips Screwdriver、Hand Slotted Screwdriver

Component detailed information

Dismantling Sequence	Component Name& Photo.		Weigh (g)	Connection Technique	Disassembly Time(Sec)	Disassembly Tools
1	Arm Plastic		30	Snap	4	Slotted Screwdriver
2	Arm Plastic		163	Screw Snap	71	Philips Screwdriver & Hand
3						
4	Lens Plastic		83	Screw Snap	85	Philips Screwdriver & Hand
5	Lens Cover		20	Snap		Hand
6	Mylar		2	-	1	-

Table 4: Sub-assembly Assessment - Body and Lens module Assy. (Cont.)

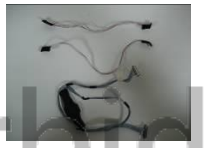
Component detailed information						
Dismantling Sequence / Part No.	Component Name & Photo		Weight (g)	Connection Technique	Disassembly Time(Sec)	Disassembly Tools
7	Mylar		-	Glue	1	Hand
8	Lens Module Press		80	Screw Snap		Philips Screwdriver & Hand
9	Thermal Pad		25	Glue		Hand
10	Flat Cable		1	Connector		Hand
11	Wire		11	Connector	302	Hand
12	DSP Board		14	Screw		Philips Screwdriver
13	PCBA		13	Screw		Philips Screwdriver
14	Sensor Board		6	Screw		Philips Screwdriver

Table 4: Sub-assembly Assessment - Body and Lens module Assy. (Cont.)

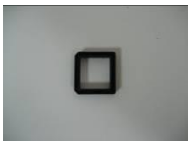
Component detailed information						
Dismantling Sequence / Part No.	Component Name & Photo		Weight (g)	Connection Technique	Disassembly Time(Sec)	Disassembly Tools
15	Heat-Sink		2	Screw		Philips Screwdriver
16	Rubber		1	-		Hand
17	COMS Board Press		7	Screw		Philips Screwdriver
18	Lens Module		118	Screw Snap		Philips Screwdriver & Hand
19	Plastic		11	Screw Snap		Philips Screwdriver &Hand
20	Lens Module Press		73	Screw	75	Philips Screwdriver
21	Weight Base Press		132	Screw		Philips Screwdriver & Hand
22	Plastic		1	Snap	5	Hand

Table 4: Sub-assembly Assessment - Body and Lens module Assy. (Cont.)

Component detailed information						
Dismantling Sequence / Part No.	Component Name & Photo		Weight (g)	Connection Technique	Disassembly Time(Sec)	Disassembly Tools
23	Home Sensor Board		2	Screw	20	Philips Screwdriver
24	Eneoder Side Board		1	Screw	20	Philips Screwdriver
25	Code Wheel		1	Snap	8	Philips Screwdriver & Hand
26	Gear Plastic		3	Snap	35	Philips Screwdriver & Hand
27	Belt		1	Snap	2	Hand
28	Motor		44	Screw	25	Philips Screwdriver
29	Motor Press		22	Screw	20	Philips Screwdriver
30	U-Frame		116	Screw	35	Philips Screwdriver

Table 4: Sub-assembly Assessment - Body and Lens module Assy. (Cont.)

Component detailed information						
Dismantling Sequence / Part No.	Component Name & Photo		Weight (g)	Connection Technique	Disassembly Time(Sec)	Disassembly Tools
31	Screw		13	-	1	-

Table 5 Sub-assembly Assessment - Bottom Base Assy.

Name	Bottom Base Assy.	Characteristics
		• Component Numbers：19 • Total Disassembly Time：457sec • Disassembly Sequence：From step 32 to 48 • Connection Technique： Screw、Connector、Snap • Disassembly Tools： Philips Screwdriver、Hand Slotted Screwdriver、Long Nose Pliers

Component detailed information

Dismantling Sequence	Component Name& Photo.		Weigh (g)	Connection Technique	Disassembly Time(Sec)	Disassembly Tools
32	Bottom Press		240	Screw	48	Philips Screwdriver
33	Control Board		114	Screw	46	Philips Screwdriver
34	IO Board		70	Screw	35	Philips Screwdriver
35	Wire		3	Connector	2	Hand
36	Encoder Board		1	Screw	15	Philips Screwdriver
37	Wire		1	Connector	2	Hand
38	Motor		44	Screw	40	Philips Screwdriver

Table 5: Sub-assembly Assessment - Bottom Base Assy. (Cont.)

Component detailed information						
Dismantling Sequence / Part No.	Component Name & Photo		Weight (g)	Connection Technique	Disassembly Time(Sec)	Disassembly Tools
39	Code Wheel		1	Snap	45	Hand & Slotted Screwdriver
40	Gear Plastic		4	Snap		Hand & Slotted Screwdriver
41	Motor Press		27	Screw	24	Philips Screwdriver
42	Belt		1	Snap	1	Hand
43	IR Cover Plastic		8	Snap	25	Hand
44	Motor Bracket Press		127	Screw	85	Philips Screwdriver
45	Tube		1	-	2	Long Nose Pliers
46	Shaft Bearing		110	Screw	85	Philips Screwdriver

Table 5: Sub-assembly Assessment - Bottom Base Assy. (Cont.)

Component detailed information						
Dismantling Sequence / Part No.	Component Name & Photo		Weight (g)	Connection Technique	Disassembly Time(Sec)	Disassembly Tools
47	IR & LED Base		124	-	1	Hand
48	Screw		18	Screw	1	-

5、3R Calculation

5.1 Calculation Formula

The criteria calculation of WEEE 3R (Reuse, Recycling & Recovery) is adopted from the Department of Trade and Industry (DTI, UK.), as shown in Table 6.

Table 6: 3R Calculation Formula

Calculator to help companies assess compliance with WEEE target levels		
Weight of WEEE collected	A	.....kg
Weight of whole appliances re-used for original purpose	B	.....kg
Weight of components, sub-assemblies and consumables which are re-used for their original purpose or recycled	C	.....kg
Target level of WEEE re-use and recycling	$\frac{C}{A-B}$	.....%
Weight of WEEE where energy is recovered in a power plant	D	.....kg
Target level of WEEE recovery	$\frac{D+C}{A-B}$	.....%

Reference：(A guide to marketing, product development and manufacturing actions you need to take)-- GG416 (DTI)

Recycling Rate = (Reuse + Recyclable)/(Products Weight)×100% .....(1)

Recovery Rate = (Reuse + Recyclable +Energy recovery)/(Products Weight)×100% (2)

5.2 Product 3R Calculation

As a 3R calculating result, it is shown in Table 7.

Table 7: HD/SD PTZ Camera / PTC-120 Calculation Result

Equipment Name / Model No.			HD/SD PTZ Camera / PTC-120			
Description	Derivative	Weight (g)	Reuse & Recycle	Energy Recovery	Disposal	Selectively Treatment (WEEE Annex II)
Body and Lens module Assy.	Metal	501.00	✓			
	Plastic	234.00	✓	✓		
	Complex Material	163.00	✓	✓		
Bottom Base Assy.	Metal	522.00	✓			
	Plastic	15.00	✓			
	Complex Material	357.00	✓	✓		✓

5.3 Product Derivative Summary

Product Name	HD/SD PTZ Camera / PTC-120
WEEE Evaluation	**Calculation Weight (g)**
Reuse / Recycling Weight	1597.00
Energy Recovery Weight	292.00
Disposal Weight	0.00
Selectively Treatment Weight (WEEE Annex VII)	1.00
Product Sample Weight (g)	1890.00

5.4 Test Result

PASSED

Product Name	HD/SD PTZ Camera / PTC-120
Recycling Rate %	**Testing Recycling Rate %**
65%	84.5%
Required Recovery Rate %	**Testing Recovery Rate %**
75%	99.9%