

<p><b>Zyxel WEEE 3R REPORT</b></p> <p>Zyxel WEEE program – Evaluation of Recyclability and Recoverability rate for Zyxel Networked equipment EU Directive 2012/19/EU</p>	
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Department .....	Quality System Management
Report No. ....:	ZQ20200605001
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Reporting period.....:	2020-05-25 to 2020-06-05
Product category .....	IT and Telecommunications equipment
Test Object .....	Multy X AC3000 Tri-Band WiFi System
Model name .....	WSQ50
P/N no. ....:	WSQ50-EU0101F
Trademark .....	<b>ZYXEL</b>
Power supply (I/O) .....	External Power Supply
Rating(s) .....	AC 100-240V, 50/60Hz, 0.9A
Standard .....	Zyxel WEEE program is based on following:  <b>Directive 2012/19/EU (WEEE Recast)</b> <b>A guide to the marketing, product development and manufacturing actions you need to take IEC 62635</b>
Test Report Form No. ....:	Zyxel TRF52001_2013-02-06 / Ver. 1
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## 1. Abbreviations used in the report

Abbr.	Full name
QMD	Quality Management Department
3R	Reused, Recycle, Recovery
MB	MotherBoard
PSU	Power supply unit
$M_{(i)}$	Mass of ith part (ref.: IEC/TR 62635:2012)
$RCR_{(i)}$	Recycling rate of the ith part in the corresponding end-of-life treatment scenario (ref.: IEC/TR 62635:2012)
$RVR_{(i)}$	Recovery rate of the ith part in the corresponding end-of-life treatment scenario (ref.: IEC/TR 62635:2012)
$m_{EEE}$	Total product mass (ref.: IEC/TR 62635:2012)
Recyclability	Ability of waste product to be recycled, based on actual practices
Recoverability	Ability of a waste product to be recovered, based on actual practices
EoL	End-of-life

## 2. General description of Product

### Picture of Product:



### Copy of Marking plate:



### Characteristic data:

Product total weight : 951.6g (Adaptor included)

783.9g (Adaptor excluded)

Product dimension : L:236mm \* W:178mm \* H:51.5mm

**Normative reference:**

Directive 2012/19/EU

IEC/TR 62635:2012, Ed.1

ISO 11469:2000 Plastics — Generic identification and marking of plastics products

ISO 1043 Plastics — Generic identification and marking of plastics products

Part 1: Basic polymers and their special characteristics

Part 2: Fillers and reinforcing materials

Part 3: Plasticizers

Part 4: Flame retardants

**General Remarks:**

"(see remark #) refers to a remark appended to the report.

" (see appended table)" refers to a table appended to the report.


Throughout this report a point is used as the decimal separator.

The test results presented in this report relate only to the object tested.

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### 3. Disassembling information

#### 3.1 Disassembling object:

Device		
		
Accessories & Assemblies		
Adaptor	RJ45 cable	/
		/
/	/	/
/	/	/

## 3.2 Derivation tree of Product

- Device

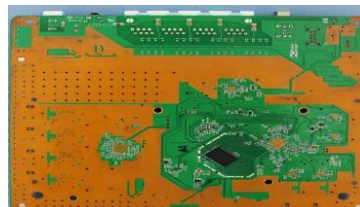


- Enclosure



- Top case x 1
- Bottom Case x 1
- Foot pad x 1
- Copper nail x 2
- Screw x 4

- PCBA



- PCBA x 1
- Heat sink(top) x 1
- Heat sink(bottom) X 1
- Screw (top) x 4
- Screw (bottom) x 4
- PCB ANT cable x 9
- shielding cover x 4
- shielding frame x 3
- Power jack x 1
- Switch x 1
- USB port x 1
- RJ45 port x 1
- Thermally conductive silicone X 3
- Conductive foam X 2
- Wave absorber X 4

- Accessory

- Adaptor



- RJ45 Cable



- Top case x 1
  - Bottom case x 1
  - Terminal x 1
  - Wire x 1
  - Connector x 1
  - Adaptor PCBA X 1
  - Capacitor X 1
  - Head sink (1) X 1
  - Head sink (2) X 1
  - Screw X 3
  - Screw nut X 1
  - PCBA choke X 2
-



### 4. Calculation result

Basic information:

Brand name	ZYXEL	Recycling scenario	IT & telecommunication
Model name	WSQ50	Product total weight	951.6g

Calculation information:

EoL info	No	Name of part	Mass (g)	Material	Recyclability mass (g)	Recoverability mass (g)
Parts for selective treatment	4.1	PCBA(MB)	121.3	PCBA	103.105	103.105
	7.1	PCBA(adaptor)	59.4	PCBA	50.49	50.49
	7.2	capacitor(adaptor)	8.9	Capacitor (PCB)	4.45	8.01
	3.1	PCB ANT cable	0.6	Electric Wires/Cables/Antenna	0.51	0.6
	3.2	PCB ANT cable	0.8		0.68	0.8
	3.3	PCB ANT cable	0.7		0.595	0.7
	3.4	PCB ANT cable	0.3		0.255	0.3
	3.5	PCB ANT cable	0.6		0.51	0.6
	3.6	PCB ANT cable	0.6		0.51	0.6
	3.7	PCB ANT cable	0.5		0.425	0.5
	3.8	PCB ANT cable	0.6		0.51	0.6
	3.9	PCB ANT cable	0.4		0.34	0.4
	5.1	RJ45 cable	29.3		24.905	29.3
	Single recyclable material	1.1	Foot pad	21.4	TPE(TPR)	19.26
1.2		Screw	1.6	Steel	1.584	1.584
1.3		Copper nail	2.4	Copper	2.376	2.376
2.3		Screw(top)	0.8	Steel	0.792	0.792
2.4		Heat sink(top)	107.3	Aluminum	106.227	106.227
2.1		Screw(bottom)	2	Steel	1.98	1.98
2.2		Heat sink(bottom)	147.7	Aluminum	146.223	146.223
4.11		shielding cover	1.4	Steel	1.386	1.386
4.12		shielding cover	1.2	Steel	1.188	1.188
4.13		shielding cover	5.5	Steel	5.445	5.445
4.14		shielding cover	0.5	Steel	0.495	0.495
4.15		shielding frame	2.9	Steel	2.871	2.871
4.16		shielding frame	0.98	Steel	0.9702	0.9702

	4.17	shielding frame	0.9	Steel	0.891	0.891
	4.18	Power jack- plastic	0.9	PC/ABS	0.81	0.9
	4.19	Power jack-metal	0.8	Steel	0.792	0.792
	4.20	Switch- plastic	0.5	PC/ABS	0.45	0.5
	4.21	Switch-metal	0.4	Steel	0.396	0.396
	4.22	USB port- plastic	1.8	PC/ABS	1.62	1.8
	4.23	USB port-metal	0.7	Steel	0.693	0.693
	4.24	RJ45- plastic	9.9	PC/ABS	8.91	9.9
	4.25	RJ45- metal	1.7	Steel	1.683	1.683
	6.1	Adaptor top case	18.7	PC	16.83	18.7
	6.2	Adaptor bottom case	18.6	PC	16.74	18.6
	6.3	Adapter terminal	0.6	Copper	0.594	0.594
	6.4	Adapter wire	44.7	Copper	42.465	42.465
	6.5	Adapter connector	0.4	Copper	0.396	0.396
	7.3	PCBA(adaptor) HEATSINK-1	3.5	Aluminum	3.465	3.465
	7.4	PCBA(adaptor) HEATSINK-2	2.6	Aluminum	2.574	2.574
	7.5	PCBA(adaptor) screw-1	0.6	Steel	0.594	0.594
	7.6	PCBA(adaptor) screw-2	0.4	Steel	0.396	0.396
	7.7	PCBA(adaptor) screw nut	0.9	Steel	0.891	0.891
	7.8	CHOKE (core)-1	4.5	Ferrite	4.455	4.455
	7.9	CHOKE (wire)-1	3.6	Copper	3.564	3.564
	7.10	CHOKE (core)-2	0.7	Ferrite	0.693	0.693
	7.11	CHOKE (wire)-2	0.5	Copper	0.495	0.495
Separation Process	1.4	Top case	119	PC/ABS	107.1	119
	1.5	Botton case	180.6	PC/ABS	162.54	180.6
	4.2	Thermally conductive silicone	1.8	Rubber (General)	0.9	0.9
	4.3	Conductive foam	1.2	Sponge	0	1.2
	4.4	Wave absorber	0.7	Rubber (General)	0.35	0.35

	4.5	Thermally conductive silicone	1.4	Rubber (General)	0.7	0.7
	4.6	Thermally conductive silicone	5.1	Rubber (General)	2.55	2.55
	4.7	Wave absorber	0.9	Rubber (General)	0.45	0.45
	4.8	Wave absorber	2.8	Rubber (General)	1.4	1.4
	4.9	Conductive foam	0.06	Sponge	0	0.06
	4.10	Wave absorber	0.5	Sponge	0	0.5
Sum					$\sum (m_{(i)} \times RCR_{(i)}) =$ 864.4692	$\sum (m_{(i)} \times RVR_{(i)}) =$ 912.0892
Recyclability rate		$\frac{\sum (m_{(i)} \times RCR_{(i)})}{m_{EEE}} \times 100\% = 90.8\%$				
Recoverability rate		$\frac{\sum (m_{(i)} \times RVR_{(i)})}{m_{EEE}} \times 100\% = 95.8\%$				

ATTACHMENT A  
PLASTIC MATERIALS MARKING

The main material of enclosure is " PC+ABS " material



**ATTACHMENT B  
PLASTIC MATERIALS MARKING**

In the light of Annex VII on the Directive 2012/19/EU (so called as WEEE recast), selective treatment for materials and components have been defined for further specifically treatment during the end-of-life electrical and electronic equipment, which are:

No	details
1	polychlorinated biphenyls (PCB) containing capacitors in accordance with Council Directive 96/59/EC of 16 September 1996 on the disposal of polychlorinated biphenyls and polychlorinated terphenyls (PCB/PCT) ( 1 ),
2	mercury containing components, such as switches or backlighting lamps,
3	batteries,
4	printed circuit boards of mobile phones generally, and of other devices if the surface of the printed circuit board is greater than 10 square centimetres,
5	toner cartridges, liquid and paste, as well as colour toner,
6	plastic containing brominated flame retardants,
7	asbestos waste and components which contain asbestos,
8	cathode ray tubes,
9	chlorofluorocarbons (CFC), hydrochlorofluorocarbons (HCFC) or hydrofluorocarbons (HFC), hydrocarbons (HC),
10	gas discharge lamps,
11	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,
12	external electric cables,
13	components containing refractory ceramic fibres as described in Commission Directive 97/69/EC of 5 December 1997 adapting to technical progress for the 23rd time Council Directive 67/548/EEC on the approximation of the laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances ( 2 ),
14	components containing radioactive substances with the exception of components that are below the exemption thresholds set in Article 3 of and

ATTACHMENT B  
PLASTIC MATERIALS MARKING

	Annex I to Council Directive 96/29/Euratom of 13 May 1996 laying down basic safety standards for the protection of the health of workers and the general public against the dangers arising from ionizing radiation ( 3 ),
15	electrolyte capacitors containing substances of concern (height > 25 mm, diameter > 25 mm or proportionately similar volume).
Remark: These substances, mixtures and components shall be disposed of or recovered in compliance with Directive 2008/98/EC.	

## ATTACHMENT C PLASTIC MATERIALS MARKING

According to Art. 12 & Art. 13 on the financing in respect of WEEE from private households and non-private households. Recycling fees cover costs of collection, transportation, handling, maintenance of recycling Zyxel network and equipment as well as solvency required in the Decree.

According to Art. 16 of Directive 2012/19/EU "Registration, information and reporting". Zyxel has completed and fulfilled EU registration responsibility requirement which shall be registered through their authorised representatives, for detail, please refer to the table below.

Coutry	Registration No.	Approved compliance scheme
UK	WEE/CC0067TX (CD01/00100)	Comply Direct Ltd.
DE	71587309	EAR
DK	21229237	DPA-System
...	...	...

For other countries registry information, please feel free to contact with Zyxel Communications Corporation. email to: [ZyXEL\\_Certification@zyxel.com.tw](mailto:ZyXEL_Certification@zyxel.com.tw)