

# Test Report

No. SZR160601003003-2

Date: Oct. 21, 2016

Page 1 of 7

**Applicant** : Shandong USR IOT Technology Limited

**Address** : 1105, Building 1, Aosheng Building, No. 1166 Xinluo Street, Gaoxin  
Qu, Jinan, Shandong, 250101, China

**The submitted sample and sample information was/were submitted and identified by/on the behalf of the client**

**Sample name** : Serial to Ethernet Module

**Type /model** : USR-TCP232-410s(Main test). USR-TCP232-ED2,  
USR-TCP232-410s-pcba, USR-N510, USR-N520, USR-N511,  
USR-N512, USR-N509, USR-N540, USR-N580

**Manufacturer** : /

**Sample received date** : Jun. 01, 2016

**Testing period** : Jun. 01, 2016 to Oct. 21, 2016

**Test requested** : As specified by client, to assess the reuse/recycle/recovery of the  
submitted sample under article 11 and Annex V of Directive  
2012/19/EU.

**Conclusion** : When tested as specified, the results shown on the report meet the  
requirements of the Reuse/Recycling/Recovery Rate of Directive  
2012/19/EU released on EU Official Journal (OJ)

**Test Result(s):** Please refer to the following page(s).



Tested by Zinc Yan

Inspected by Sahon Chen

Approved by Leo Li

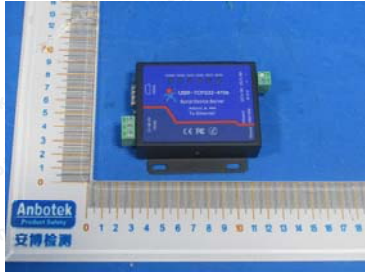
# Test Report

No. SZR160601003003-2

Date: Oct. 21, 2016

Page 2 of 7

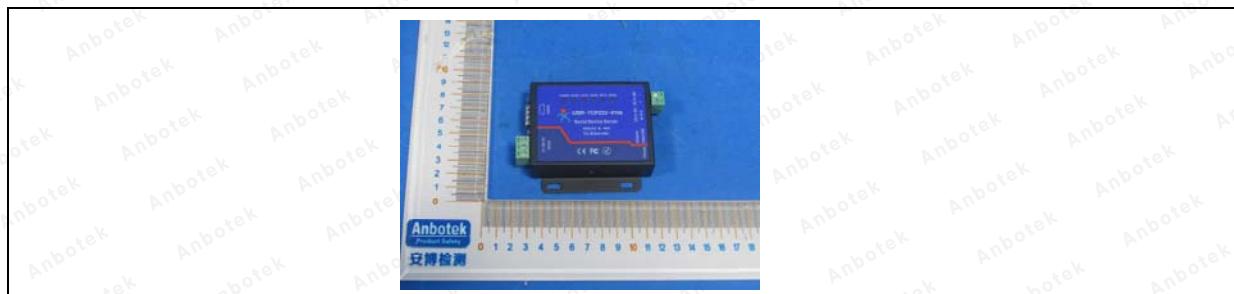
## 1. Product Description

Product Name	: Serial to Ethernet Module
Product Model	: USR-TCP232-410s(Main test). USR-TCP232-ED2, USR-TCP232-410s-pcba, USR-N510, USR-N520, USR-N511, USR-N512, USR-N509, USR-N540, USR-N580
Product Weight	: 96.782g
Category under the WEEE directive	: IT and telecommunications equipment
Product Photo	

## 2. Result of Reuse/Recycling/Recovery Assessments

Reuse/Recycling/Recovery	Reuse/Recycling Rate (%)	Recovery Rate (%)
Reuse/Recycling/Recovery Target of Products Under WEEE Directive	70	80
Result of Assessment	85.0	85.0
WEEE Compliance	PASS	PASS

## 3. Appearance of the Product



# Test Report

No. SZR160601003003-2

Date: Oct. 21, 2016

Page 3 of 7




## 4. Disassembly Assessment

### 4.1 Disassembly Procedure

The product is disassembled into different parts and grouped by the type of material sharing common characteristic( such as plastic, metal, glass) based on the treatment requirements as set out in the WEEE Directive, followed by the current state of the art of recycling and recovery technology. In addition, the recycling is subject to the economic feasibility, disassembly tools, only bigger parts that can be easily separated are included in the recycling and reuse calculation. Other parts, respectively materials that cannot be separated by e.g. standard tools are classified as either unspecified materials or distributed to the relative waste fraction is expected with recovery rate.

### 4.2 Disassembly Tools

The disassembly tools used for this product show as following:

Disassembly Tool	Picture
Slotted screwdriver	
Cross screwdriver	
Nipper	

# Test Report

No. SZR160601003003-2

Date: Oct. 21, 2016

Page 4 of 7

## 4.3 Connection Technique

5 PCS

## 4.4 Disassembly Time

45 seconds

## 4.5 Disassembly Tree



A



B



C



D



# Test Report

No. SZR160601003003-2

Date: Oct. 21, 2016

Page 5 of 7

## 5. Selective Treatment for Materials and Components

According to Article 6(2) and the Annex VII of the WEEE Directive, this product contains components and materials items are described in the following table.

Component/Material	Photo No.	Size/Model	Quantity	Weight (g)
Print circuit board	C	40.0cm <sup>2</sup>	1	42.05

## 6. Material Recycling Information

### 6.1 Material Reuse/Recycling and Recovery Table

Photo No.	Component / Material Composition	Weight (g)	Percent Weight (%)	Reuse / Recycling Rate(%)	Energy Recovery Rate(%)	Recovery Rate(%)
A	Plastic Parts	1.683	1.74	1.20	\	1.20
B,D	Metal Parts	53.049	54.81	66.92	\	66.92
C	PCBA	42.05	43.45	19.69	\	19.69
Total		96.782	100	85.0	\	85.0

**Note:** Plastic containing brominated flame retardants is not assessed in the list

### 6.2 Reuse/Recycling and Recovery Rate Calculation

-Calculation Method	
Product total weight	a (g)
Weight of components, sub-assemblies and consumables which are reused for their original purpose or recycled.	b (g)
Weight of materials or components where energy is recovered through incineration.	c (g)
Reuse / Recycling Rate	b/a *100 (%)
Recovery Rate	(b+c)/a *100 (%)

# Test Report

No. SZR160601003003-2

Date: Oct. 21, 2016

Page 6 of 7

## 7. ANNEX VII of WEEE Directive (2012/19/EU)

### Selective treatment for materials and components of waste electrical and electronic equipment referred to in Article 6(2)

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

- 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),
- 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 centimetres,
- toner cartridges, liquid and paste, as well as colour toner,
- plastic containing brominated flame retardants,
- asbestos waste and components which contain asbestos,
- cathode ray tubes,
- chlorofluorocarbons (CFC), hydrochlorofluorocarbons (HCFC) or hydrofluorocarbons (HFC), hydrocarbons (HC),
- gas discharge lamps,
- liquid crystal displays (together with their casing where appropriate) of a surface greater than 100 square centimeters 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 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,
- components containing radioactive substances with the exception of components that are below the exemption thresholds set in Article 3 of and 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,
- electrolyte capacitors containing substances of concern (height > 25 mm, diameter > 25 mm or proportionately similar volume). These substances, mixtures and components shall be disposed of or recovered in compliance with Directive 2008/98/EC.

# Test Report

No. SZR160601003003-2

Date: Oct. 21, 2016

Page 7 of 7

## 8. Recommendations for WEEE Directive Compliance

(1) To make the product comply with the reuse/recycling/recovery target required under WEEE Directive (2012/19/EU) and other EU waste regulation, the applicant company should consider the product they design can be easily reused and recycled by selecting recyclable materials and components.

(2) To make the product easily dismantled, less the disassembling time, the applicant company should design the product for easy disassembly by choosing easy separate techniques, avoiding the utilizing embedded components, designing the separable procedure.

(3) The product should be subjected to the RoHS Directive (2011/65/EU), restricting using hazardous substance. In addition, the materials selected to design should consider the dangerous substance regulated or list under other environmental specifications, as Regulation (EC) 1907/2006(REACH), 67/548/EEC, etc.

(4) In case that a product have new design, or employ materials or components, then the product should need to be reassessed and retested in accordance with the WEEE Directive for reuse/recycle/recycling target and RoHS for restricted substances requirement.

(5) The applicant company should take attention to the future possible update concerning the WEEE Directive and related requirement.

\*\*\*\*\* End of Report \*\*\*\*\*

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