

**ICC/Intervox**

# Approval Sheet

Model Number: SR80X16VN-2W-4-WCA-IP67

Reference Number: 5-001

Date: 7-July-2017

Prepared by: Chris Lam

Approved by: Joey Lin

Approval by

---

Company Name:

Sign by:

Title:

Date:

# Approval Sheet

Part Number: SR80X16VN-2W-4-WCA-IP67

Reference Number: 5-001



## 1. Purpose and the scope

This document contains the specific specifications (electrical and mechanical), inspection standard and the reliability standard for the purpose of the customer's approval.

## 2. Description

Note Book Speaker.

## 3. Applications

Feature Telephone, Cordless Phone, Computer, Instrument etc.

## 4. Product origin

China

## 5. Test conditions

Tests should be made under the conditions of room temperature ( $20 \pm 10$  °C) normal humidity ( $60 \pm 20$  %) and normal atmospheric pressure. In the case, however, that the judgment is questionable the test conditions are to be changed to room temperature  $20 \pm 2$  °C, relative humidity 60 ~ 70 % and normal atmospheric pressure..

## 6. Ozone guarantee

Certificate on the elimination of ozone layer destroying substances such as Freon.

## 7. Quality protection

The specifications of the mentioned model are based on this document. We do not guarantee the specifications outside this approval document.

## 8. Warranty.

The warranty period shall be 6 months from date of delivery.

## 9. Soldering conditions

The speaker should not be exposed to extremely high temperatures for prolonged periods of time. As excessive heat will degrade the internal structure of the unit, soldering should be conducted as quickly as possible.

Recommended temperature and time for soldering

Hand soldering (for ABS, Hi-Temp ABS, FR ABS, Nylon)

300 °C Thermal iron 2 seconds

# Approval Sheet

Part Number: SR80X16VN-2W-4-WCA-IP67

Reference Number: 5-001

## 10. Washing conditions

Not suitable for washing



3

## 11. Flux removing solvents

In the view of the recent requirement for total elimination of ozone-depleting chemicals, we have decided to recommend our customers to use deionized water for their cleaning process at the condition given below, instead of "CFC" that was conventionally used.

Cleaning solvent : deionized water

Solvent temperature :  $55 \pm 5^\circ \text{C}$

Immersion time :  $5 \pm 0.5$  minutes

## 12. Signal input polarity

When a positive dc voltage is applied to the terminal marked (+) or red the diaphragm should move to the front.

## 13. Operation test

Must be normal at program source same as the power rating.

# Approval Sheet

Part Number: SR80X16VN-2W-4-WCA-IP67

Reference Number: 5-001

## 14. Specification

4

Items	Specifications	Conditions
Size	40.0 x 20.0 x 6.5 ( mm )	
Normal Power Rating	2.0 W	In free air
Maximum Power Rating	3.0 W	In free air
Impedance	4.0 $\Omega$	$\pm$ 15.0 % at 2000.0 Hz , 1.0 Vrms
Resonant Frequency ( $f_0$ )	1150.0 Hz	$\pm$ 20.0 % at 1.0 V ( In free air )
Sound Pressure Level	97.0 dB	$\pm$ 3.0 dB / 0.89 V ( Sine Wave ) / measuring distance at 1000 , 1200 , 1500 , 2000 Hz average
Measuring Distance	10.0 cm	
Frequency Range	300.0 ~ 10000.0 Hz	
THD	< 15.0 %	At 1000.0 Hz Input 2.0 W
Magnet	$\varnothing$ 11 x 1.5 mm	N35
Housing Material	PBT	
Diaphragm Material	Mylar	
Weight	5.21 g	
Waterproof	IP67	
Operating Temperature	- 20.0 ~ + 55.0 ° C	
Storage Temperature	- 20.0 ~ + 55.0 ° C	
Rub & Buzz	A sine sweep among rated frequency range at rated power for a period of 1.0 second will not result in any buzzing or extraneous sound	
Polarity Requirements		
Polarity	When a DC source's "+" polarity is attached to speaker's "+" polarity, "-" polarity is attached speaker's "-" polarity, the membrane will move forward	

# Approval Sheet

Part Number: SR80X16VN-2W-4-WCA-IP67

Reference Number: 5-001

## 15. Inspection Standard

5

Item tested	Sym	Standard	AQL	Level	Inspection by means of	Remarks
Sound Pressure Level		Should be within 97.0 ± 3.0 dB	1	II	Audio analyzer	0.89V ( Sine Wave ) / measuring distance at 1000 , 1200 , 1500 , 2000 Hz average
Impedance		4.0 Ω	0.65	I	Impedance Meter	± 15.0 % measured at 2000.0 Hz at 1.0 Vrms
Outer Diameter		40.0 x 20.0 ± 0.2 ( mm )	1.5	S-3	Electronic Calipers	To be measured at the maximum dia.
Height		6.5 ± 0.3 (mm )	1.5	S-3	Electronic Calipers	To be measured at the maximum height on the body only.
Rust			1	II	Visual	Any rust should not be accepted.
Stain			1.5	II	Visual	There should be no remarkable stains.
Adhesion			1.5	II	Visual	Adhesion should be made sufficiently and there should be no outflow of adhesive agent.
Other Appearance			1.5	II	Visual	

# Approval Sheet

Part Number: SR80X16VN-2W-4-WCA-IP67

Reference Number: 5-001

## 16. Reliability Test



Item	Method of the test	Standard
Temperature Shock	-20.0 °C to +55.0 °C 10 cycles. 30.0 minutes at each temperature. Less than 5.0 min transition time. Refer to IEC 68-2-14	All specifications must be satisfied after each test.
Static Humidity Test	Soak samples to +45.0 °C with 85.0 % relative humidity for continuous period of 168.0 hours. Refer to IEC 68-2-67	
Drop Test	DUTs shall be mounted in a 100.0 g fixture, drop samples 1.0 m three times in each direction, total 18.0 times	
Operating Life	DUTs shall be tested under each specified climatic condition (per section 6) for a continuous period of 100.0 hours at rated noise power. Input shall be white noise (IEC268-1) with a crest factor of 1.8 to 2.2 in rated frequency range. Refer to IEC 268-5	
Short Term Maximum Power	DUTs shall be tested under each specified climatic condition (per section 6.0) at maximum power. Input shall be white noise (IEC 268-1) with crest factor of 1.8 to 2.2 in rated frequency response for a period of 1.0 second. And the test shall be repeated 60.0 times with intervals of 1.0 min. Refer to IEC 268-5	

## 17. Equipment List

Name	Model
Audio Analyzer	Bruel & kjaer
Acoustic Chamber	Bruel & kjaer
Audio Calibrator	Bruel & kjaer
Amplifier	Bruel & kjaer

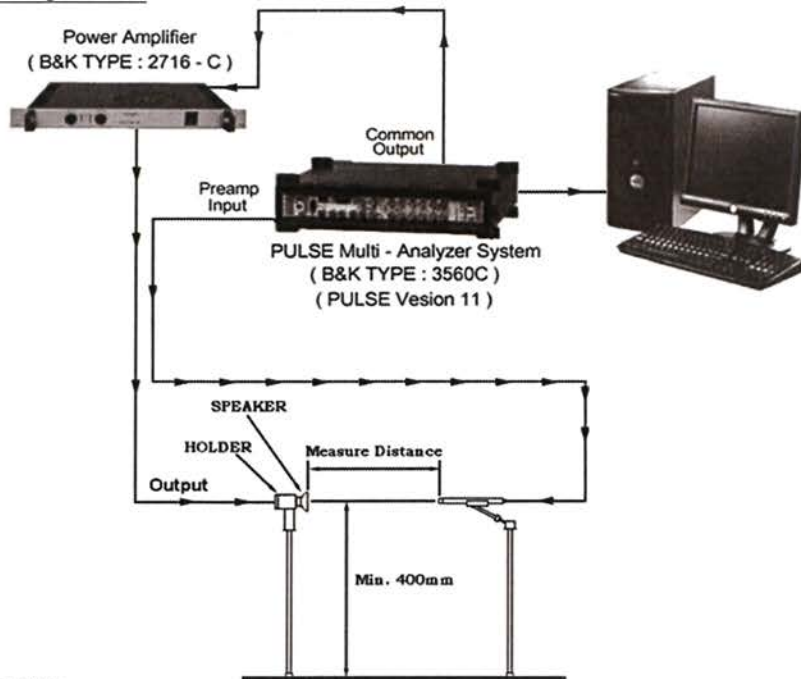


# Approval Sheet

Part Number: SR80X16VN-2W-4-WCA-IP67

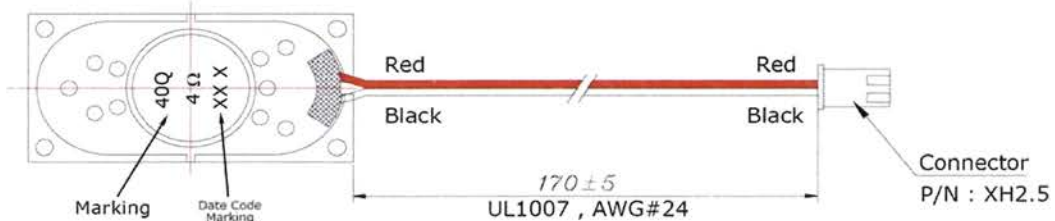
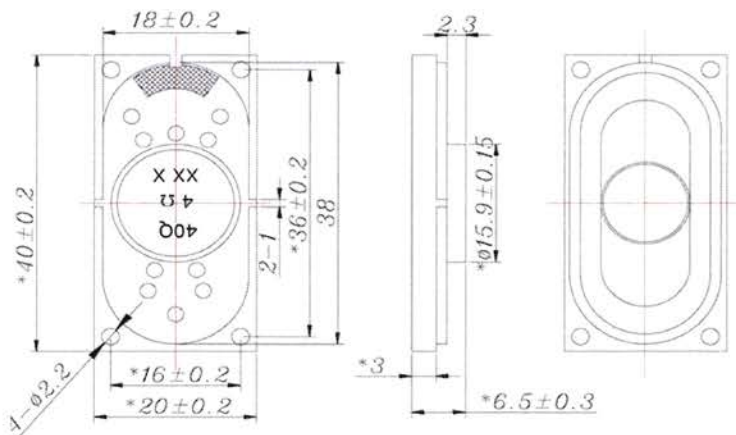
Reference Number: 5-001

**Fig.1 Measuring Method**



**18. Mechanical Draw**

BOTTOM VIEW      SIDE VIEW      TOP VIEW



Marking  
Date Code Marking  
"16 L"  
Year J L Month  
16 = 2016 L = Dec.

BOTTOM VIEW

Unit mm

Tol: ±2mm

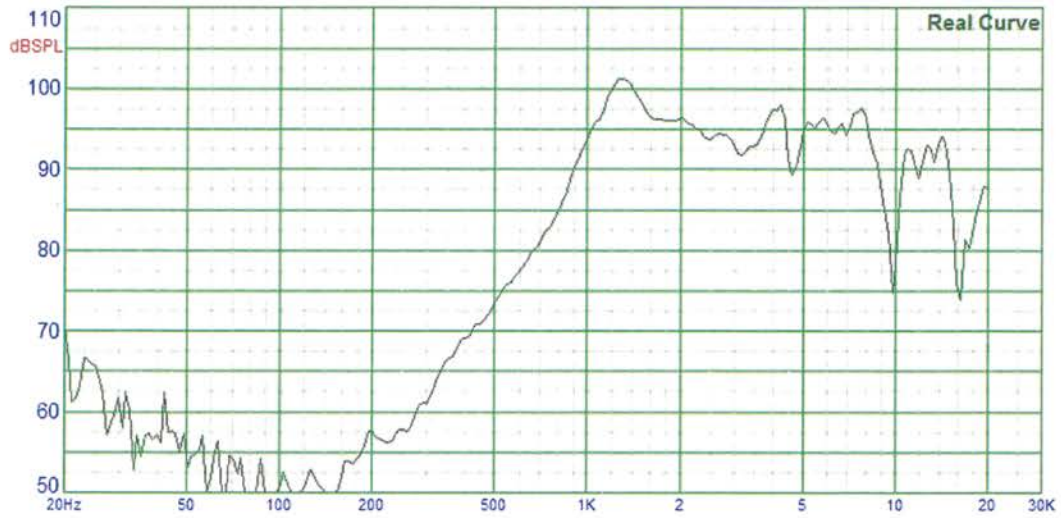
# Approval Sheet

Part Number: SR80X16VN-2W-4-WCA-IP67

Reference Number: 5-001

## 19. Frequency Response

(For Reference only)



## 20. Change History

Version	Date	Description	Approved
5-001	7-Jul-2017	New	JL