



soberton inc.

SP DYNAMIC SPEAKER UNIT

Acoustic Product Specification

Product Number: SP-3020S



Release | Revision: C/2018

CONTENTS

This document contains the technical specifications for the dynamic speaker unit for mobile telephones.

Page 1

Speaker Electroacoustic Characteristics

General Specifications

Page 2

Reliability Tests

Page 3

Measuring Method (Speaker Mode)

Standard Test Condition of Speakers

Page 4

Frequency Response Curve

Page 5

Dimensions

PCB Layout

Page 6

Exploded Diagram and Materials Table

Page 7

Packing

Dynamic Speaker Electroacoustic Characteristics

Sound Pressure Level

100±3dB SPL @0.8,1.0,1.18 and 1.5KHz in average

Measuring Condition: 0.1W (Sine wave) 10cm measured with baffle shown in Fig.1

Frequency Response Curve

As shown in Figure 2

Response Frequency

800±20%Hz @ 1V. (Without Baffle)

Input Power (Nominal and Maximum)

Rated Noise Power 1.0W

Short Term Max Power: 1.5W must be normal at a white noise for one minute

Operation Test

Must be free audible noise (buzzes and rattles)

(300 ~ 5KHz frequency range, input level up to 2.53Vrms in 1cc box)

Distortion

Less than 10% @1KHz,0.1M,0.1W

General Specifications

Operating Temperature Range

-30°C~+70°C

Storage Temperature Range

-40°C~+80°C

Standard Test Conditions

Temperature 17°C~25°C

Relative Humidity 45%~80%(RH)

AC Impedance

8±15%Ω (@2KHz 1V) without baffle

Dimension

Ø30.0 x 20.0mm

IP Level

IP50



soberton inc.

SP DYNAMIC SPEAKER UNIT

Acoustic Product Specification

Product Number: SP-3020S



Release | Revision: C/2018

CONTENTS

This document contains the technical specifications for the dynamic speaker unit for mobile telephones.

Page 1

Speaker Electroacoustic Characteristics

General Specifications

Page 2

Reliability Tests

Page 3

Measuring Method (Speaker Mode)

Standard Test Condition of Speakers

Page 4

Frequency Response Curve

Page 5

Dimensions

PCB Layout

Page 6

Exploded Diagram and Materials Table

Page 7

Packing

Reliability Tests

The sound pressure as specified will neither deviate more than $\pm 3\text{dB}$ from the initial value, nor have any significant damage after any of following testing.

High Temperature Test

High Temperature $+80\pm 2^\circ\text{C}$

Duration 96 hours

Low Temperature Test

Low Temperature $-40\pm 2^\circ\text{C}$

Duration 96 hours

Heat Shock Test

High Temperature $+80\pm 2^\circ\text{C}$

Low Temperature $-40\pm 2^\circ\text{C}$

Changeover Time < 30 seconds

Duration 1 hour

Cycle 100

Humidity Test

Temperature $+ 80\pm 2^\circ\text{C}$

Relative Humidity 90%~95%

Duration 96 hours

Temperature Cycle Test

Temperature -40°C $+80^\circ\text{C}$

Duration 45 minutes 45 minutes

Temperature gradient $1\sim 3^\circ\text{C}/\text{min}$

Cycle 25

Drop Test

Mounted with dummy set mass 100 g

Height 1.5 m

Cycle 6 (1 each plain) onto the concrete board

Load Test

Speaker mode: White noise(EIA filter)for 96 hours @1.0W in 1cc box input power



soberton inc.

SP DYNAMIC SPEAKER UNIT

Acoustic Product Specification

Product Number: SP-3020S



Release | Revision: C/2018

CONTENTS

This document contains the technical specifications for the dynamic speaker unit for mobile telephones.

Page 1
Speaker Electroacoustic Characteristics

General Specifications

Page 2
Reliability Tests

Page 3
Measuring Method (Speaker Mode)

Standard Test Condition of Speakers

Page 4
Frequency Response Curve

Page 5
Dimensions

PCB Layout

Page 6
Exploded Diagram and Materials Table

Page 7
Packing

Measuring Method (Speaker Mode)

Standard Test Condition

Temperature 15 ~ 35°C

Relative humidity 45% ~ 85%

Atmospheric pressure 860mbar to 1060mbar

Standard Test Fixture

Input Power 0.1W

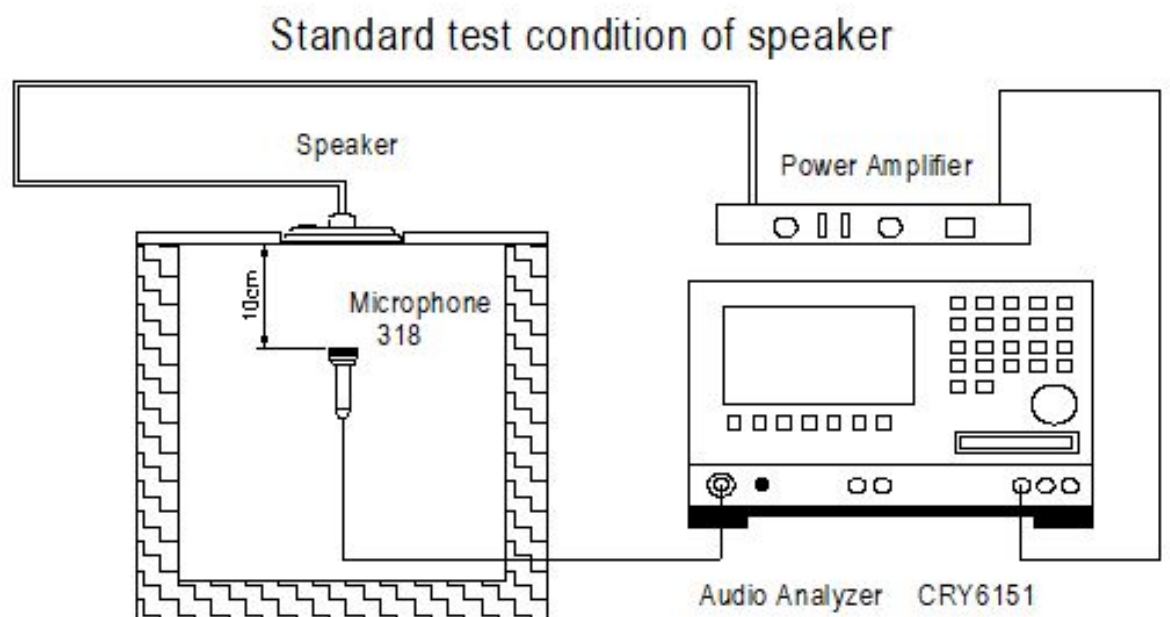
Zero Level -dB

Mode TSR

Potentiometer Range 50dB

Sweep Time 0.5sec

Standard Test Condition of Speaker (Fig. 1)





soberton inc.

SP DYNAMIC SPEAKER UNIT

Acoustic Product Specification

Product Number: SP-3020S



Release | Revision: C/2018

CONTENTS

This document contains the technical specifications for the dynamic speaker unit for mobile telephones.

Page 1

Speaker Electroacoustic Characteristics

General Specifications

Page 2

Reliability Tests

Page 3

Measuring Method (Speaker Mode)

Standard Test Condition of Speakers

Page 4

Frequency Response Curve

Page 5

Dimensions

PCB Layout

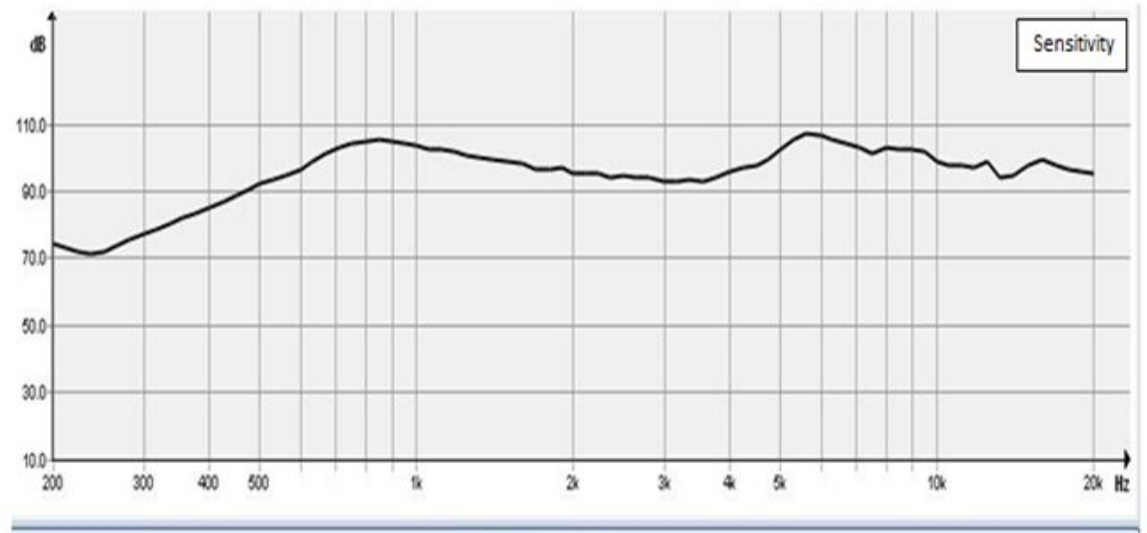
Page 6

Exploded Diagram and Materials Table

Page 7

Packing

Frequency Response Curve (Fig. 2)





soberton inc.

SP DYNAMIC SPEAKER UNIT

Acoustic Product Specification

Product Number: SP-3020S



Release | Revision: C/2018

CONTENTS

This document contains the technical specifications for the dynamic speaker unit for mobile telephones.

Page 1

Speaker Electroacoustic Characteristics

General Specifications

Page 2

Reliability Tests

Page 3

Measuring Method (Speaker Mode)

Standard Test Condition of Speakers

Page 4

Frequency Response Curve

Page 5

Dimensions

PCB Layout

Page 6

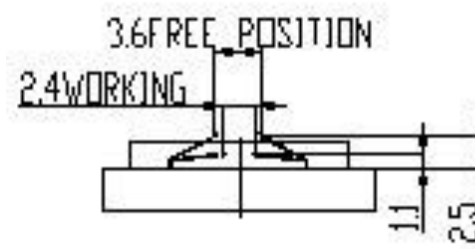
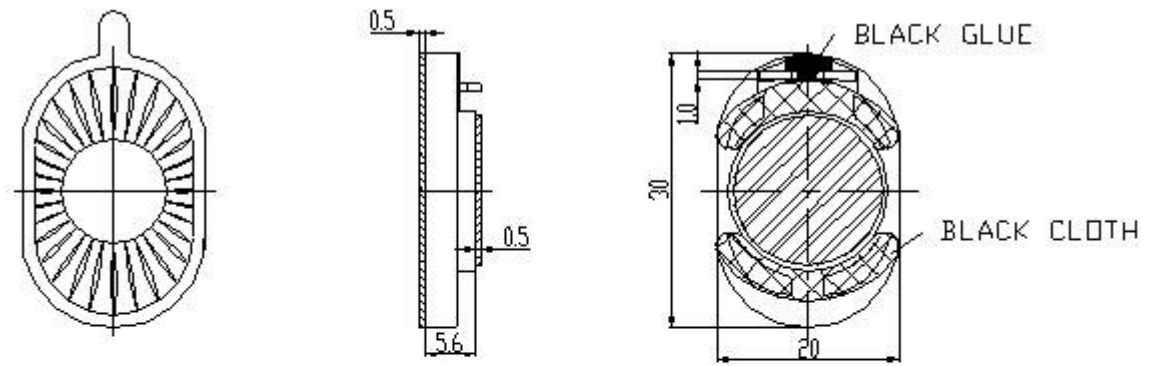
Exploded Diagram and Materials Table

Page 7

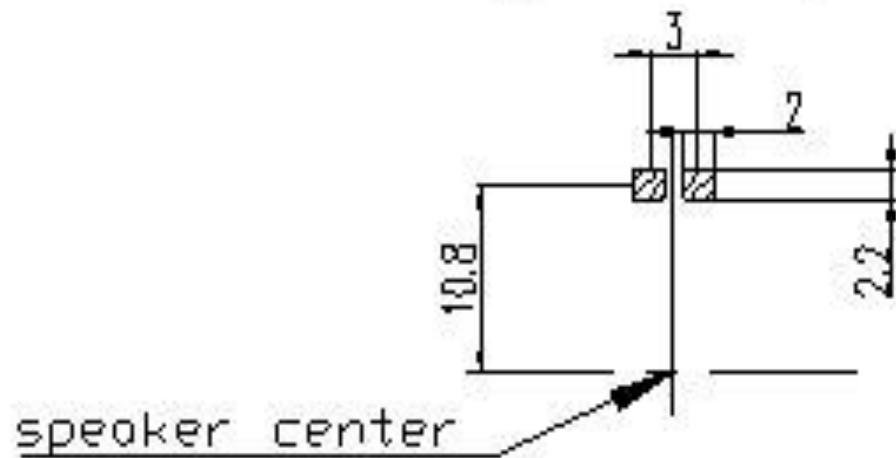
Packing

Dimensions

Tolerance: ± 0.5 (unit: mm)



PCB Layout





soberton inc.

SP DYNAMIC SPEAKER UNIT

Acoustic Product Specification

Product Number: SP-3020S



Release | Revision: C/2018

CONTENTS

This document contains the technical specifications for the dynamic speaker unit for mobile telephones.

Page 1

Speaker Electroacoustic Characteristics

General Specifications

Page 2

Reliability Tests

Page 3

Measuring Method (Speaker Mode)

Standard Test Condition of Speakers

Page 4

Frequency Response Curve

Page 5

Dimensions

PCB Layout

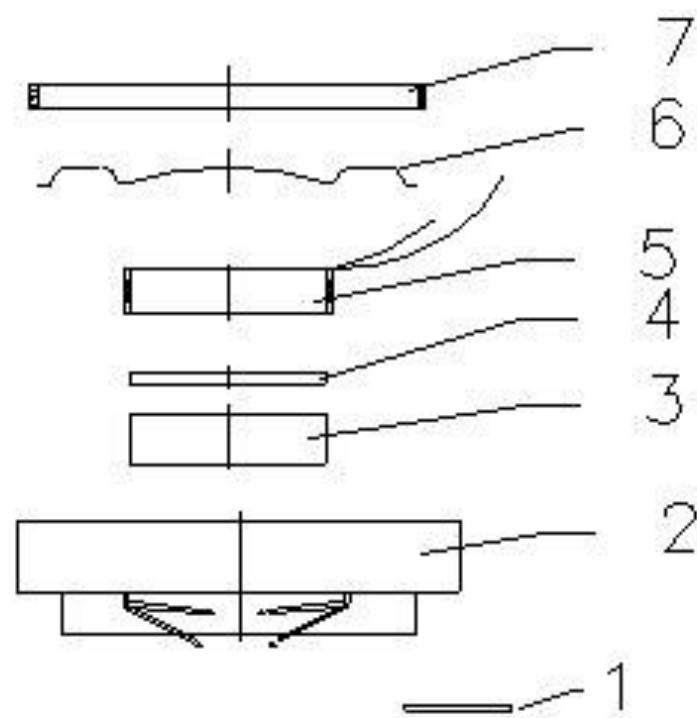
Page 6

Exploded Diagram and Materials Table

Page 7

Packing

Exploded Diagram and Materials Table



No.	Part Name	Material	Quantity
1	Silk Screen	Black Cloth	1
2	Frame + PIN	SPCC+PBT	1
3	Main Magnet	Nd Fe B-N40	1
4	Plate 1	SPCC	1
5	Voice Coil	KSV-7.4Ω	1
6	Diaphragm	Black PEN	1
7	Cap	SUS 304	1



soberton inc.

SP DYNAMIC SPEAKER UNIT

Acoustic Product Specification

Product Number: SP-3020S



Release | Revision: C/2018

CONTENTS

This document contains the technical specifications for the dynamic speaker unit for mobile telephones.

Page 1

Speaker Electroacoustic Characteristics

General Specifications

Page 2

Reliability Tests

Page 3

Measuring Method (Speaker Mode)

Standard Test Condition of Speakers

Page 4

Frequency Response Curve

Page 5

Dimensions

PCB Layout

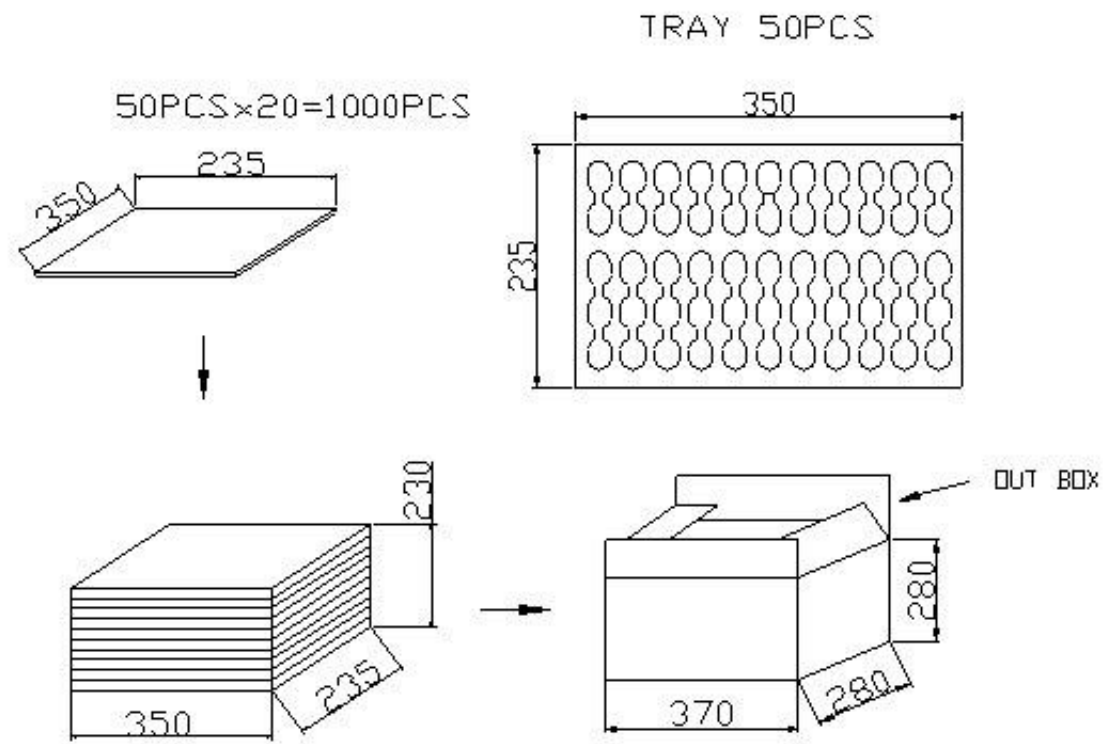
Page 6

Exploded Diagram and Materials Table

Page 7

Packing

Packing



TRAY	350X235X11mm	1X50PCS=50PCS
CARTON BOX	370X280X280mm	20X50PCS=1000PCS