

Application Note



4100 & 4400 Handling

The purpose of this Application Note is to achieve optimal handling and processing of the 4100 & 4400 receivers.

Contents

General Info: Design.....	2
Handling Recommendations.....	3
Robustness 4100 & 4400.....	4
Dual Receiver Wiring.....	5
Pull Strength Solder Pad.....	6

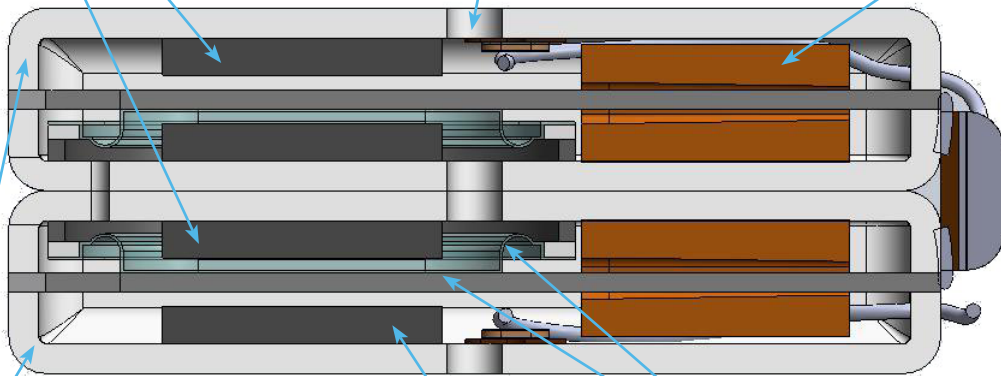
Application Note

General Info: Design

Dual motor to reduce vibration

Sealed hole to close back volume

Coil



Housing is part of magnetic circuit and made from soft magnetic material

Magnets

Combined Diaphragm and Armature Design

- Due to its small size, the housing now also is part of the primary magnetic circuit and is made from soft magnetic material.
- The very low thickness of the single receiver can only be met with very narrow airgaps between all parts.
- Deformation of the housing will most likely cause the armature to be off-centred. This causes high THD levels and rubbing that will make the transducer fail in an acoustic test

THD = Total Harmonic Distortion

Rubbing = High Frequency sound created by parts touching each other during the function of the transducer.

4400 = two 4100 receivers mounted cover to cover

Application Note

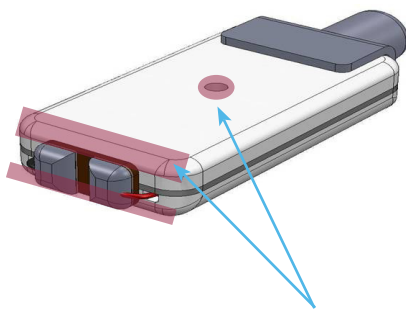
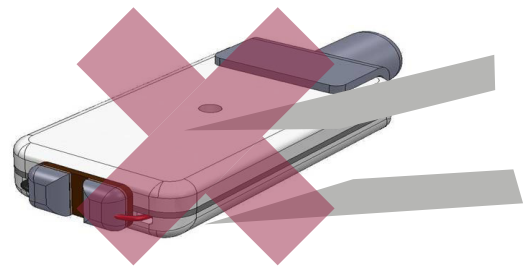
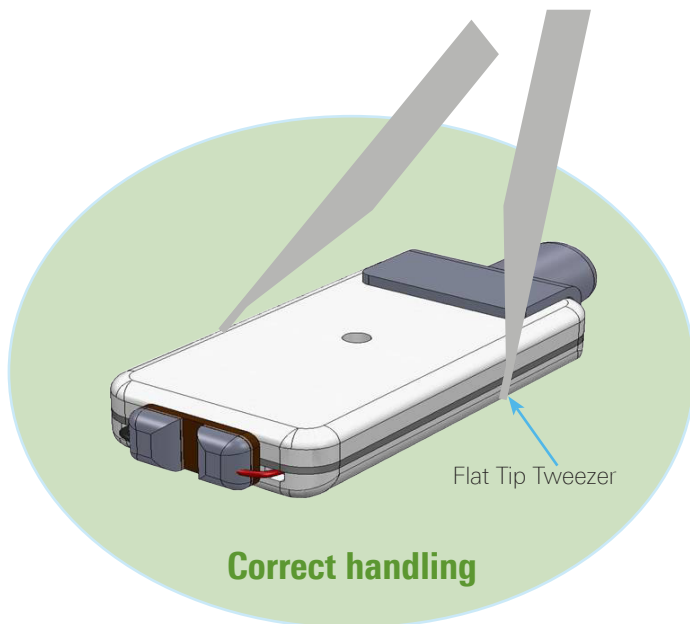
Handling Recommendations

Handling

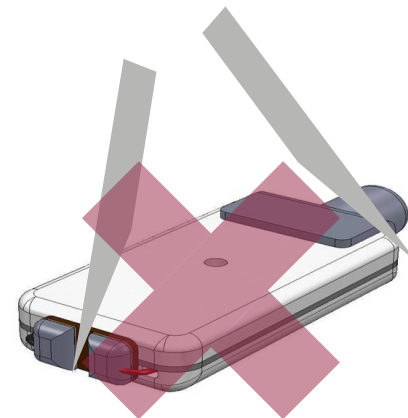
- Follow general Sonion Handling Instructions (see www.sonion.com/Products/Application Notes)
- 4400 and 4100 should be handled carefully when using metal tip tweezers
 - Use flat tip tweezers or plastic tip tweezers to prevent damaging the case
 - Do not use the hole in the cover for gripping the receiver

Soldering

- Follow general Sonion Soldering Instructions (see www.sonion.com/Products/Application Notes)



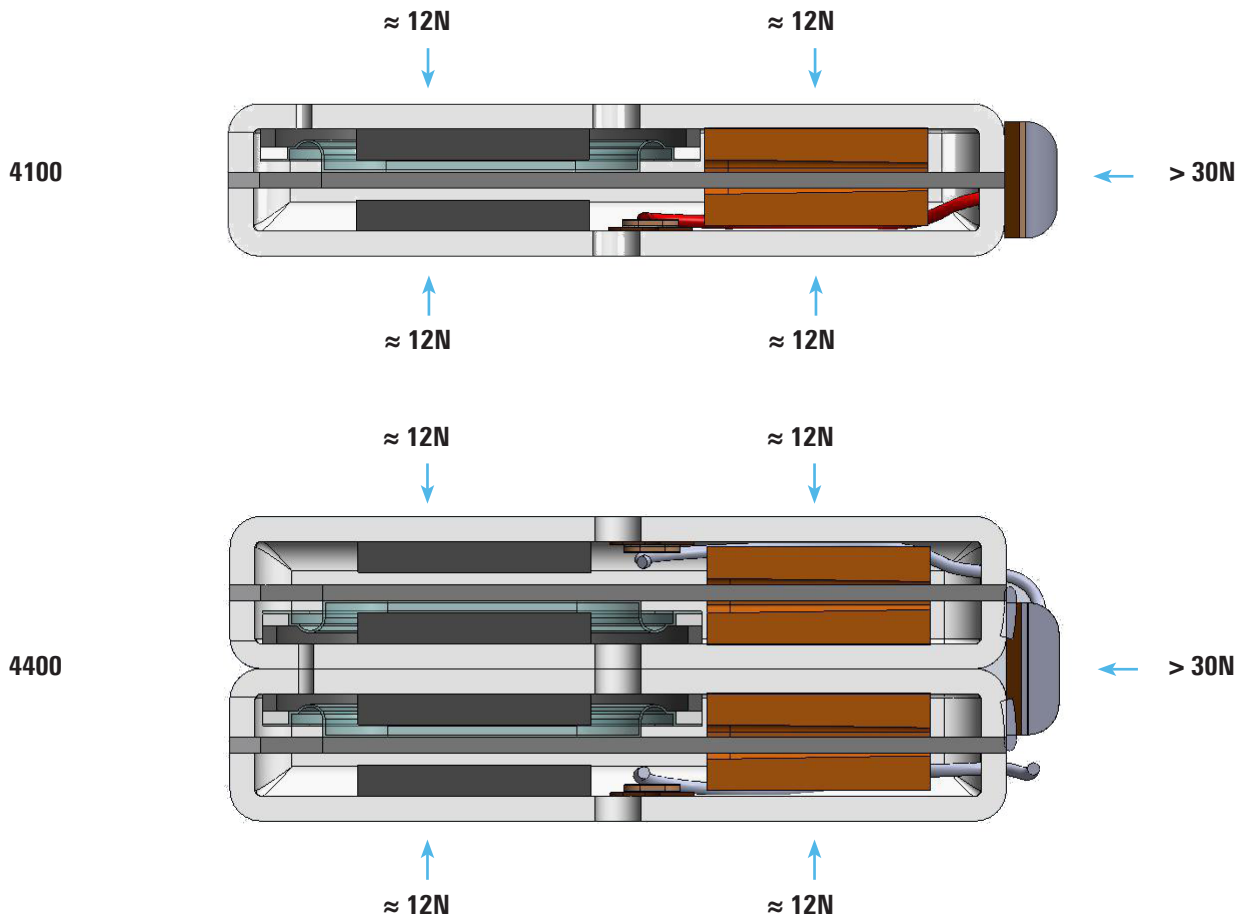
Do not touch red area with sharp tweezers points



Application Note


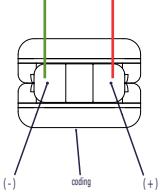
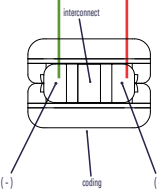

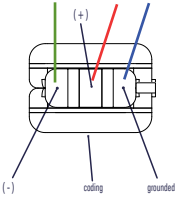
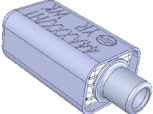
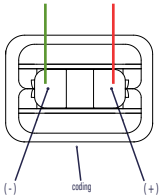
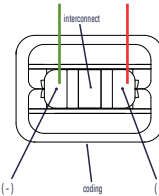
Robustness 4100 & 4400

Mechanical force before receiver gets permanently damaged. The damage will result in increased THD and failure of the part.



Application Note

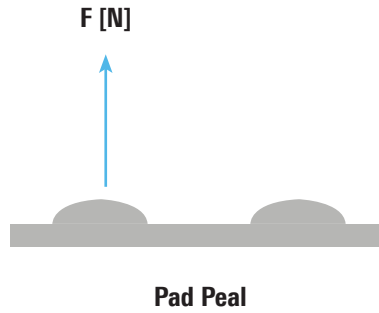
Dual Receiver Wiring

 <p>Sonion 4400 Receiver 44Axxx</p>	
 <p>(-) coding (+)</p>	 <p>interconnect (-) coding (+)</p>
Parallel connection (44A007) <ul style="list-style-type: none"> Connect litz wires to indicated pads 	Series connection (44A015 and 44A030) <ul style="list-style-type: none"> Connect litz wires to indicated pads Don't connect the middle pad, it is used for interconnecting both coils
 <p>Sonion Grounded 4400 Receiver 44AxxxG</p>	
 <p>(-) coding grounded (+)</p>	<p>NOT AVAILABLE</p>
Parallel connection (44A007) <ul style="list-style-type: none"> Connect litz wires to indicated pads Third wire is for grounding only 	Series connection
 <p>Sonion Shielded 4400 Receiver 44Axxx/H1</p>	
 <p>(-) coding (+)</p>	 <p>interconnect (-) coding (+)</p>
Parallel connection (44A007/H1) <ul style="list-style-type: none"> Connect litz wires to indicated pads 	Series connection: 44A015/H1 & 44A030/H1 <ul style="list-style-type: none"> Connect litz wires to indicated pads Don't connect the middle pad, it is used for interconnecting both coils

Application Note

Solder Pad Strength

Pull Strength	4100	4400
Pad Peel [N]	> 1	> 4



The force needed to peel off the solder pad by pulling one of the wires