Google Inc. v. Rockstar Consortium US LP et al
Doc. 67 Att. 29

EXHIBIT 28

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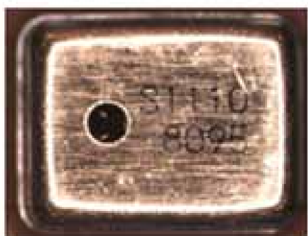
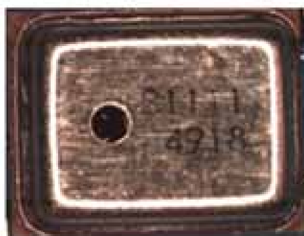
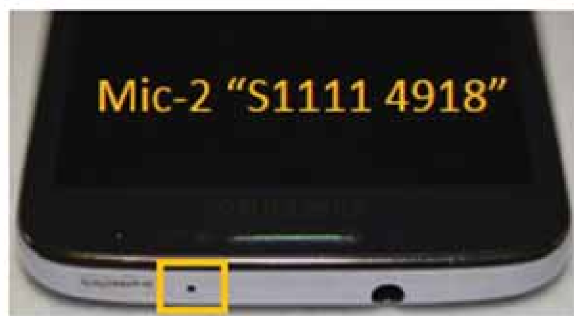
Claim 1	ACCUSED PRODUCTS[1]
1.1 An electronic package comprising:	The Accused Products include an electronic package. For example: The Accused Products include an electronic package (e.g., electronic component(s) covered with an electronic shield). As an example, a teardown of Samsung Ativ S Neo smartphone reveals at least four electronic components covered with an EMI shield. For example only, two of these components are microphones located at the bottom and the top of the phone respectively. The disassembly of Samsung Ativ S Neo reveals two MEMS microphone packages: Mic-1 "S1110 8095" (at the bottom of the device) on a daughter board and Mic-2 "S1111 4918" (near the top of the device) on the main board.

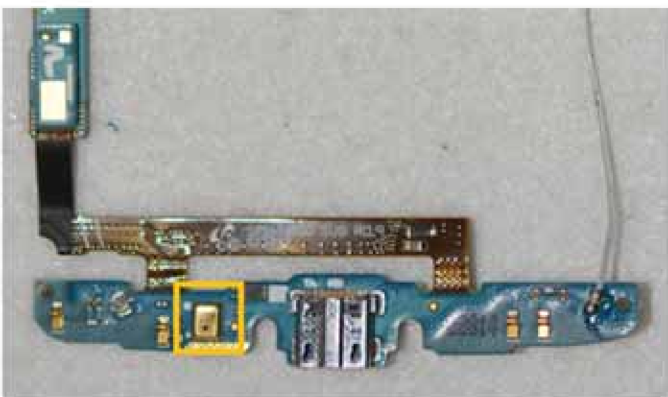
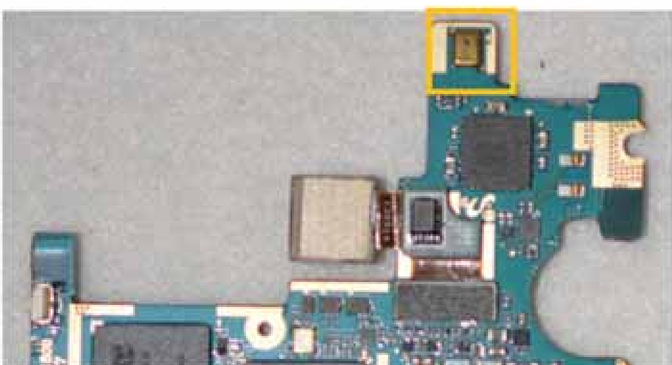
[1] The Accused Products include all of the devices listed in the Accused Products Spreadsheet attached to the '551 patent infringement contentions and any other product uncovered during discovery that includes an electronic component surrounded by an EMI shield/Faraday cage.

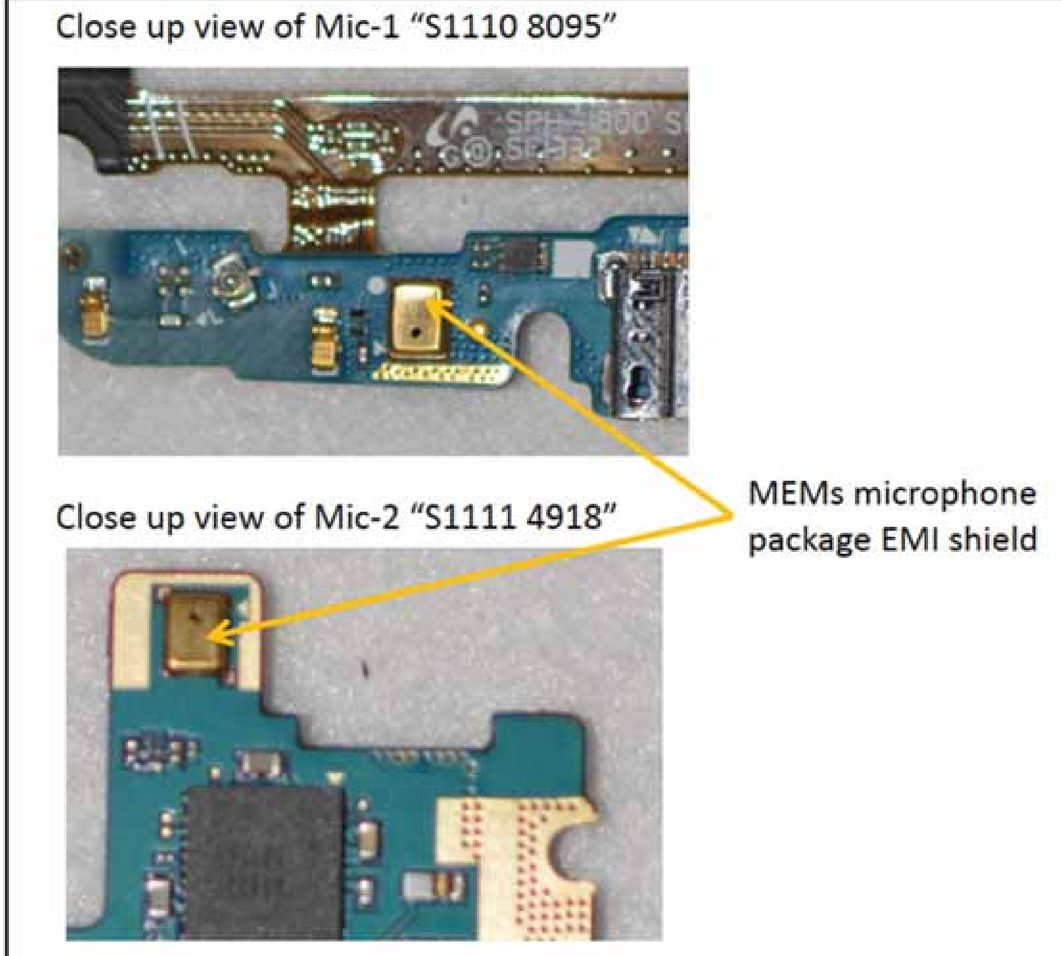
Claim 1	ACCUSED PRODUCTS[1]
	Front and back view of device [2]

[2] All photographs herein are for the exemplary purpose of showing infringement by the Accused Products.

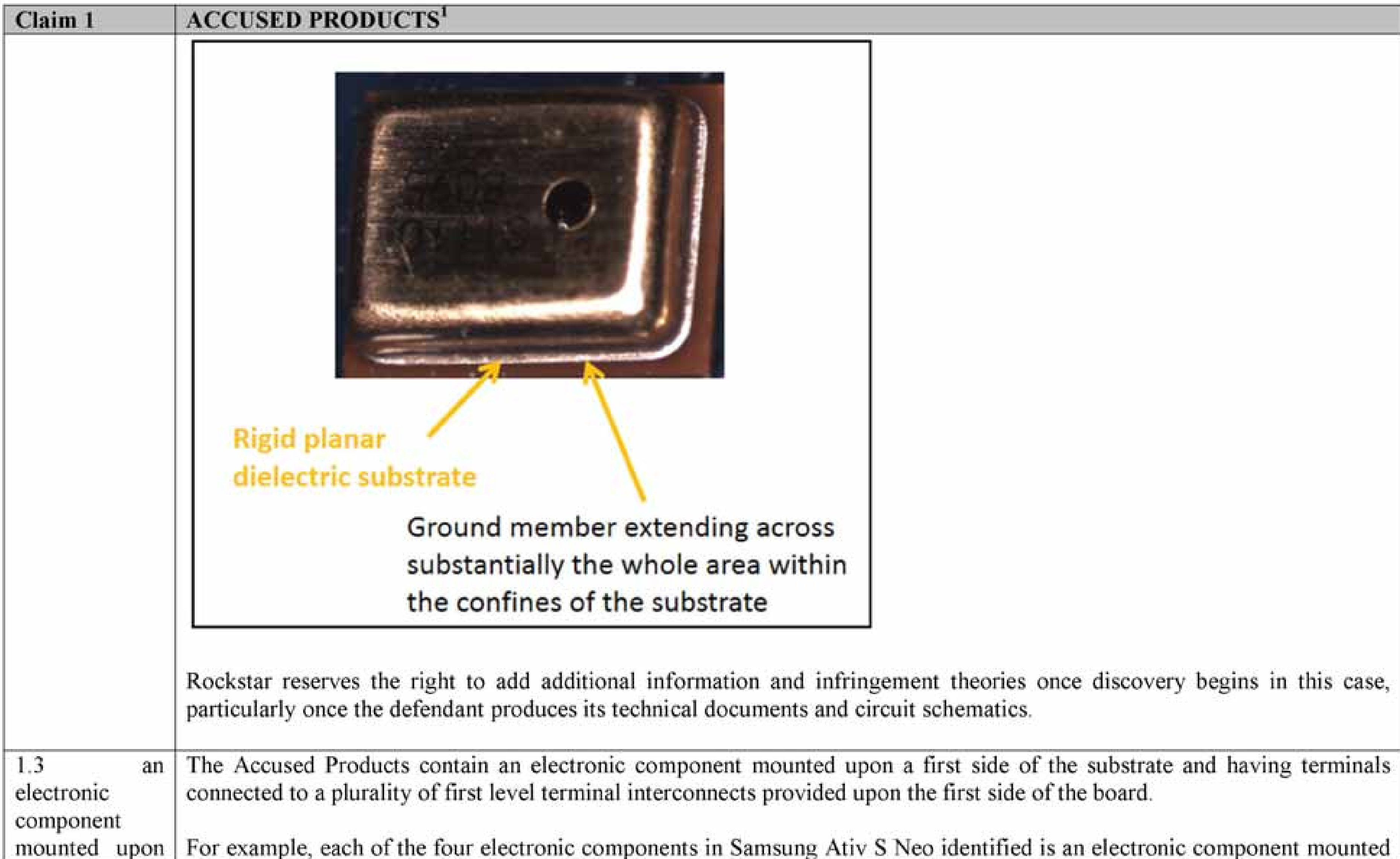
Claim 1	ACCUSED PRODUCTS[1]
	Optical image of the four electronic components covered with an EMI shield   

Claim 1	ACCUSED PRODUCTS[1]

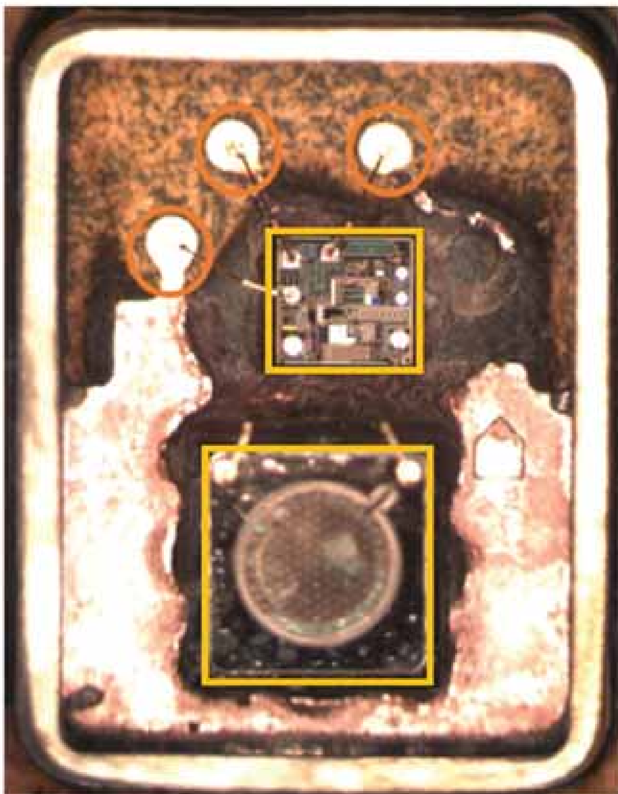
Claim 1	ACCUSED PRODUCTS[1]
	Mic-1 MEMS microphone board placement  Mic-2 MEMS microphone board placement 

Claim 1	ACCUSED PRODUCTS[1]
	 Rockstar reserves the right to add additional information and infringement theories once discovery begins in this case,

Claim 1	ACCUSED PRODUCTS[1]
	particularly once the defendant produces its technical documents and circuit schematics.
1.2 a rigid planar dielectric substrate carrying a ground member extending across substantially the whole area within the confines of the edges of the substrate;	The Accused Products contain a rigid planar dielectric substrate carrying a ground member extending across substantially the whole area within the confines of the edges of the substrate. For example, each of the four electronic components in Samsung Ativ S Neo comprises a rigid planar dielectric substrate carrying a ground member extending across substantially the whole area of the substrate. The perspective image of the electronic package, for example, show the rigid planar dielectric substrate and the ground member extending across the area of the substrate.

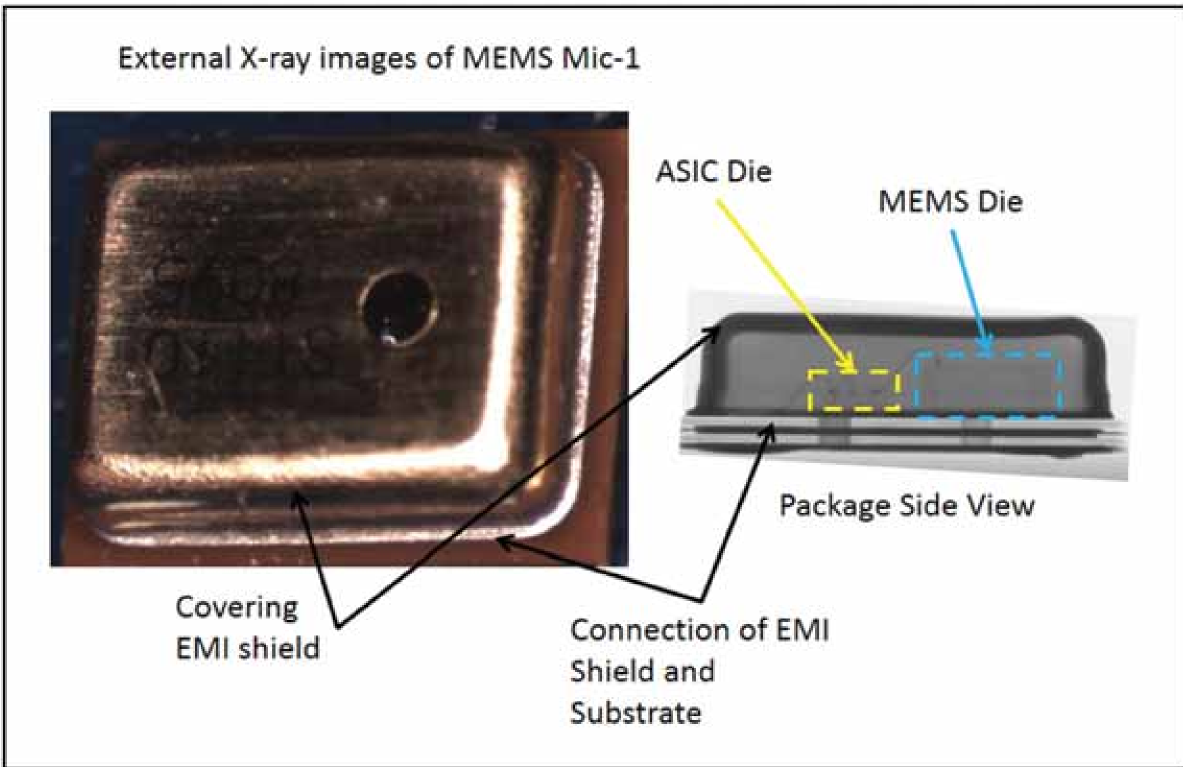
Claim 1	ACCUSED PRODUCTS[1]
	 Rockstar reserves the right to add additional information and infringement theories once discovery begins in this case, particularly once the defendant produces its technical documents and circuit schematics.
1.3 an electronic component mounted upon	The Accused Products contain an electronic component mounted upon a first side of the substrate and having terminals connected to a plurality of first level terminal interconnects provided upon the first side of the board. For example, each of the four electronic components in Samsung Ativ S Neo identified is an electronic component mounted

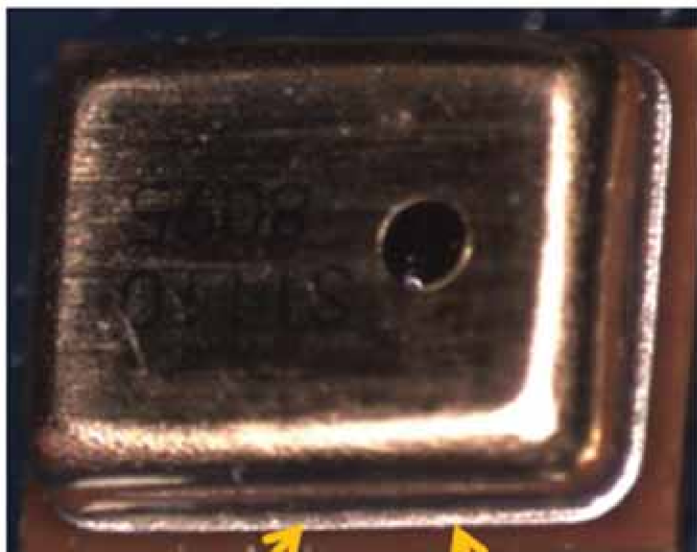
Claim 1	ACCUSED PRODUCTS[1]
a first side of the substrate and having terminals connected to a plurality of first level terminal interconnects provided upon the first side of the board;	upon the top side of the substrate. The external X-ray images for Mic-1, for example, show the ASIC and the MEMS die of Mic-1. External X-ray images of MEMS Mic-1 First Level Interconnects Ground Bond Wire ASIC Die MEMS Die Package Top View Package Side View High resolution images of the decapsulated package also show terminals of Mic-1 that connect to first level interconnects provided on the substrate. Further delayering of the package reveals the first level interconnects on the top layer that are in turn also connected to circuit paths in the substrate.

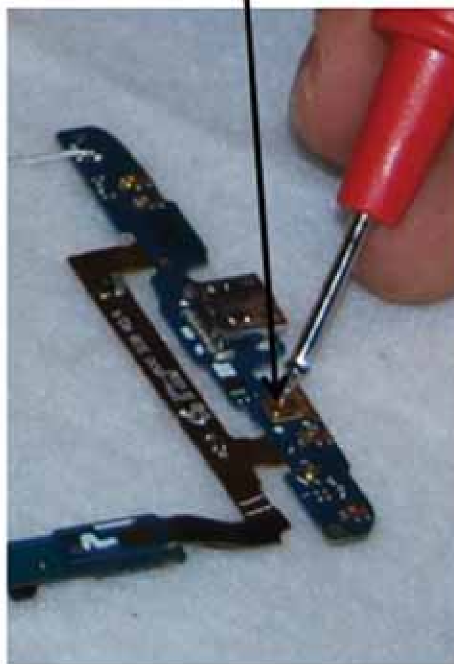
Claim 1	ACCUSED PRODUCTS[1]
	Terminals of Mic-1 are electrically connected to First Level Interconnects 

Claim 1	ACCUSED PRODUCTS[1]
	Delayered image of Mic-1 package First Level Interconnects Layer 1 Rockstar reserves the right to add additional information and infringement theories once discovery begins in this case,

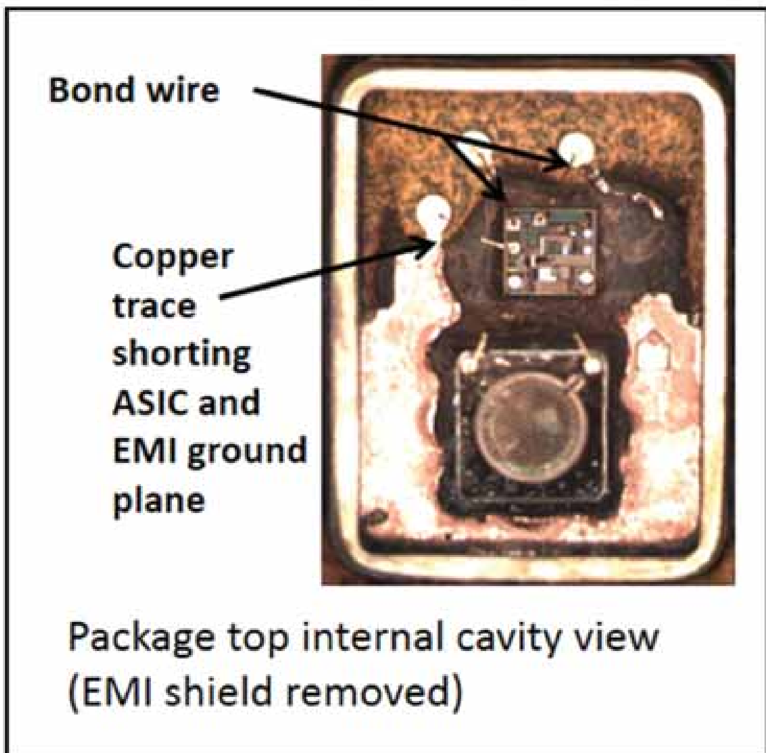
Claim 1	ACCUSED PRODUCTS[1]
	particularly once the defendant produces its technical documents and circuit schematics.
1.4 a covering EMI shield extending over the electronic component to locate the electronic component between the EMI shield and the ground member of the substrate, the EMI shield being electrically interconnected to the ground member of the substrate to form with the ground member, a Faraday cage around the electronic component;	The Accused Products contain a covering EMI shield extending over the electronic component to locate the electronic component between the EMI shield and the ground member of the substrate, the EMI shield being electrically interconnected to the ground member of the substrate to form with the ground member, a Faraday cage around the electronic component. For example, each of the four electronic components in Samsung Ativ S Neo identified above is covered by an EMI shield that locates the electronic component between the EMI shield and the ground member of the substrate. The external X-ray images for Mic-1, for example, shows that the EMI shield extends over the electronic components, the ASIC and the MEMS die of Mic-1.

Claim 1	ACCUSED PRODUCTS[1]
	

Claim 1	ACCUSED PRODUCTS[1]
	

Claim 1	ACCUSED PRODUCTS[1]
	A resistance of 0.1 ohms measured between the top of the EMI shield and the bottom side of the substrate indicates that the EMI shield is electrically connected to the ground member. 0.1 Ω resistance measured between the EMI shield top surface and chassis ground Package EMI shield top  Rockstar reserves the right to add additional information and infringement theories once discovery begins in this case,

Claim 1	ACCUSED PRODUCTS[1]
	particularly once the defendant produces its technical documents and circuit schematics.
1.5 and a plurality of second level interconnects mounted upon a second side of the substrate and electrically interconnected through circuit paths in the substrate to the first level interconnects.	The Accused Products contain a plurality of second level interconnects mounted upon a second side of the substrate and electrically interconnected through circuit paths in the substrate to the first level interconnects. For example, each of the four electronic components in Samsung Ativ S Neo identified above has a plurality of second level interconnects mounted upon the second side of the substrate and electrically interconnected through circuit paths in the substrate to the first level interconnects. For example, for Mic-1, the bond wires connect to the first level interconnects which in turn are connected to second level interconnect on layer 4 of the package on the second side of the substrate through circuit paths.

<table>
<tr><th>Claim 1</th><th>ACCUSED PRODUCTS[1]</th></tr>
<tr><td></td><td>


Package top internal cavity view (EMI shield removed)

Delayering of Mic-1 package, as an example, shows a plurality of second level interconnects mounted upon the second side of the substrate (Layer 4) and electrically interconnected through circuit paths in the substrate to the first level interconnects. The two layers between Layer 1 on the top side of the substrate and Layer 4 on the bottom side both contain at least two interconnects at the identical locations as Layer 1 and Layer 4 to enable the circuit paths.
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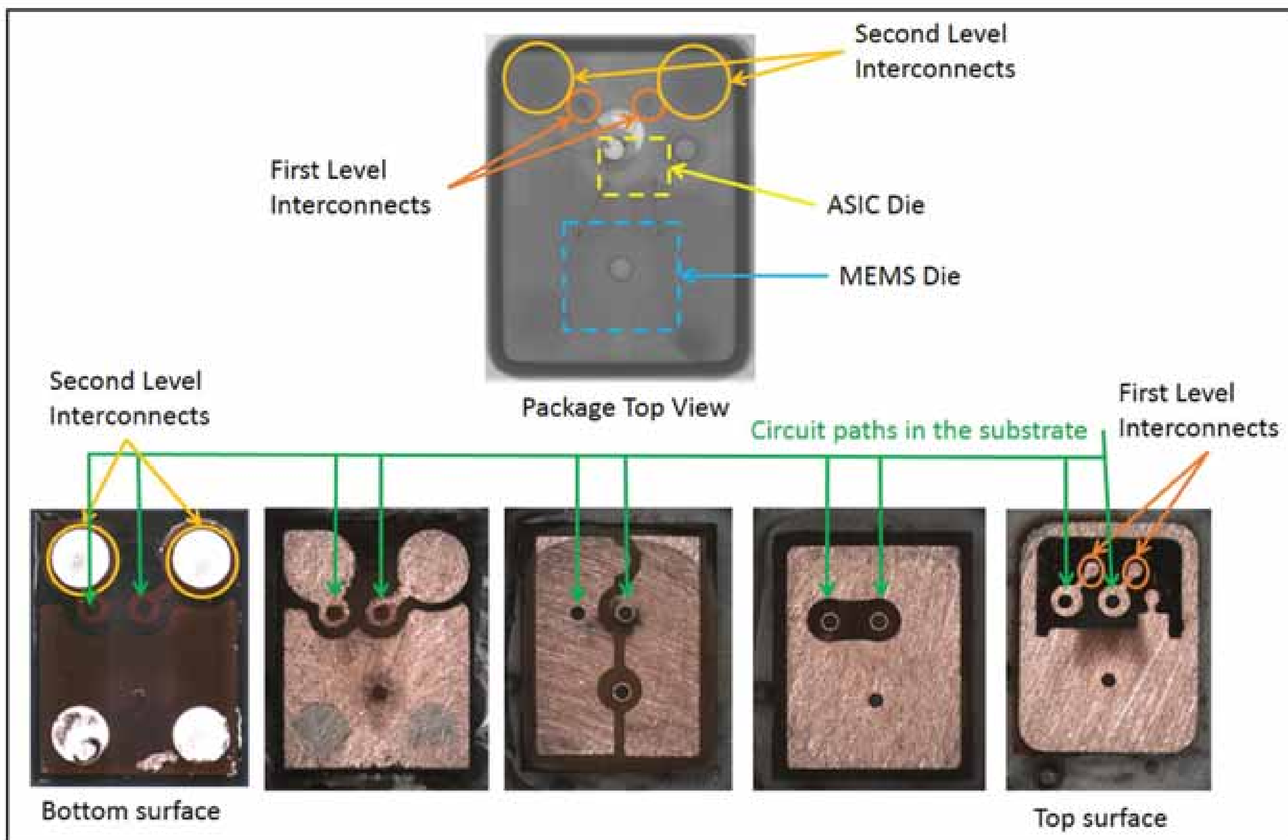
<table>
<tr><th>Claim 1</th><th>ACCUSED PRODUCTS[1]</th></tr>
<tr><td></td><td>

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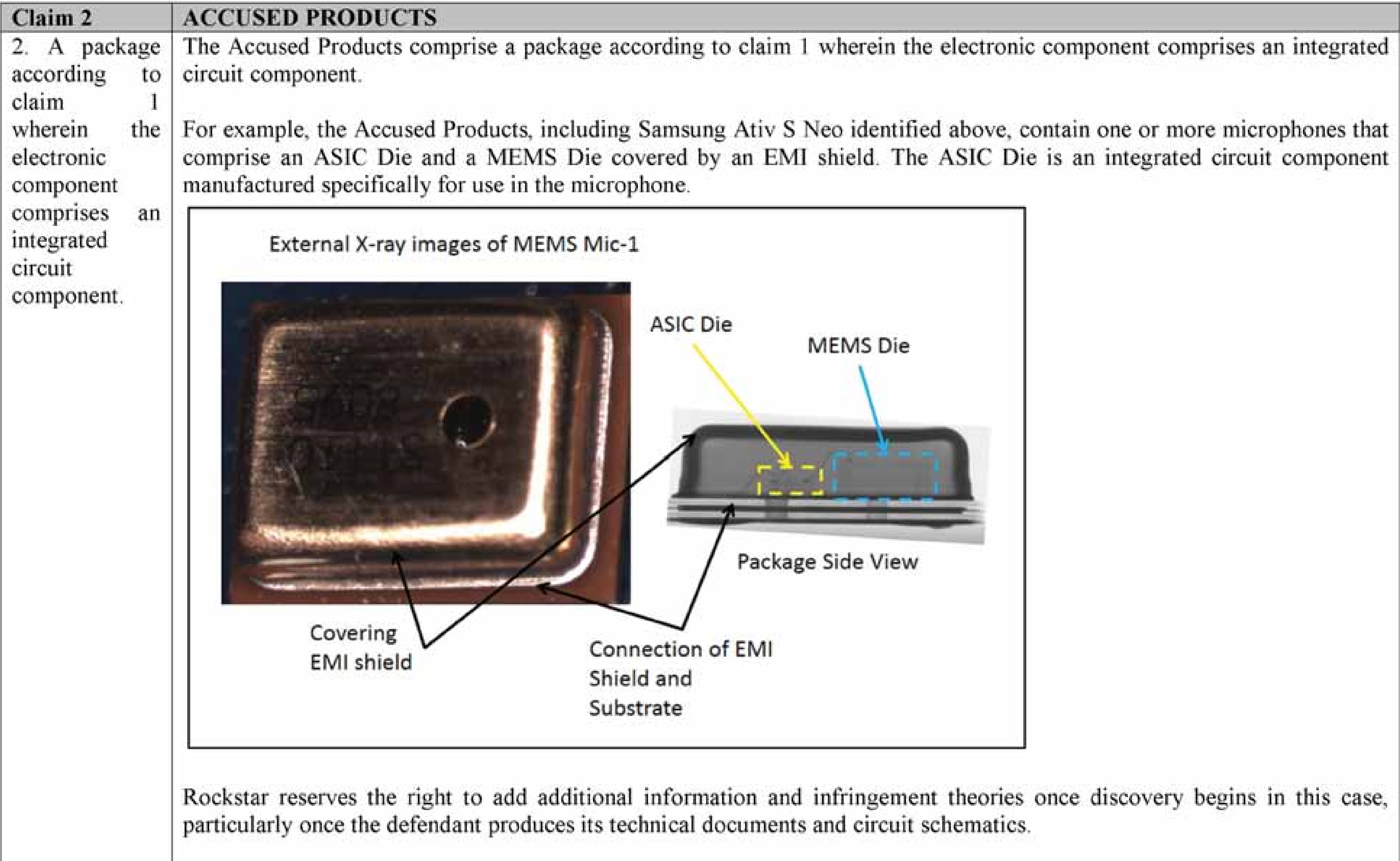
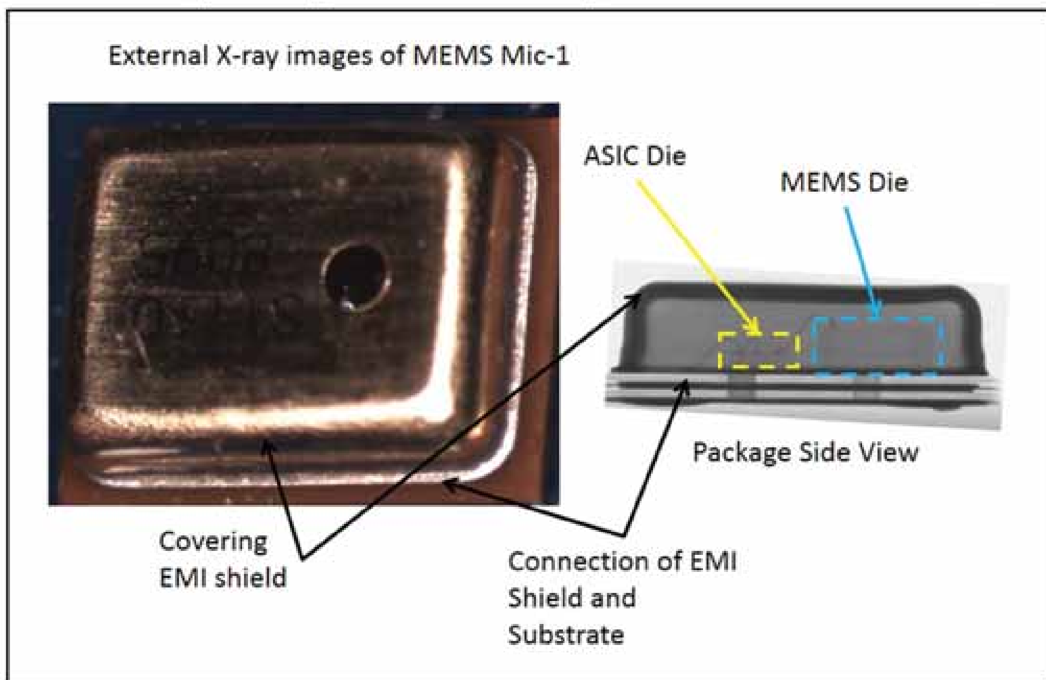
Claim 2	ACCUSED PRODUCTS
2. A package according to claim 1 wherein the electronic component comprises an integrated circuit component.	The Accused Products comprise a package according to claim 1 wherein the electronic component comprises an integrated circuit component. For example, the Accused Products, including Samsung Ativ S Neo identified above, contain one or more microphones that comprise an ASIC Die and a MEMS Die covered by an EMI shield. The ASIC Die is an integrated circuit component manufactured specifically for use in the microphone.  Rockstar reserves the right to add additional information and infringement theories once discovery begins in this case, particularly once the defendant produces its technical documents and circuit schematics.

Claim 3	ACCUSED PRODUCTS
3. A package according to claim 1 comprising two or more electronic components mounted upon the first side of the substrate and at least one of which is an integrated circuit component and all of the components are commonly shielded by the EMI shield.	The Accused Products include a package according to claim 1 comprising two or more electronic components mounted upon the first side of the substrate and at least one of which is an integrated circuit component and all of the components are commonly shielded by the EMI shield. For example, the Accused Products, including Samsung Ativ S Neo identified above, contain one or more microphones that comprise an ASIC Die and a MEMS Die covered by an EMI shield. The ASIC Die is an integrated circuit component manufactured specifically for use in the microphone.  Rockstar reserves the right to add additional information and infringement theories once discovery begins in this case, particularly once the defendant produces its technical documents and circuit schematics.