

CLAIMS**What is claimed is:**

1. A housing assembly, comprising:
5 a first conductive layer, wherein the first conductive layer comprises a first coefficient of thermal expansion (CTE);
a second conductive layer over the first conductive layer, wherein the second conductive layer comprises a second CTE that is different than the first CTE; and
a plurality of openings through the housing assembly, wherein each opening
10 passes through the first conductive layer and the second conductive layer.
2. The housing assembly of claim 1, wherein the first conductive layer is mechanically coupled to the second conductive layer.
- 15 3. The housing assembly of claim 2, wherein the first conductive layer is bolted to the second conductive layer.
4. The housing assembly of claim 1, further comprising:
an electrical gasket between the first conductive layer and the second conductive
20 layer.
5. The housing assembly of claim 1, wherein the first CTE is approximately 10ppm or less and wherein the second CTE is approximately 20ppm or greater.
- 25 6. The housing assembly of claim 5, wherein the first conductive layer comprises titanium, and wherein the second conductive layer comprises aluminum.
7. The housing assembly of claim 1, wherein the first conductive layer comprises a gas distribution network.
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8. The housing assembly of claim 1, wherein the second conductive layer comprises a fluidic channel.
9. An assembly, comprising:
35 a source array, wherein the source array comprises a dielectric plate and a

plurality of dielectric resonators extending up from a surface of the dielectric plate; and
a housing assembly over the source array, wherein the housing assembly
comprises:

- 5 a first conductive layer over the surface of the dielectric plate, wherein the
first conductive layer comprises a first coefficient of thermal expansion (CTE);
a second conductive layer over the first conductive layer, wherein the
second conductive layer comprises a second CTE that is different than the first CTE; and
a plurality of openings through the housing assembly, wherein each opening
passes through the first conductive layer and the second conductive layer, and wherein
10 each opening accommodates one of the plurality of dielectric resonators.
10. The assembly of claim 9, wherein the dielectric plate has a third CTE, and wherein a
difference between the first CTE and the third CTE is smaller than a difference between
the second CTE and the third CTE.
- 15 11. The assembly of claim 9, wherein the housing is separated from the surface of the
dielectric plate by a thermal interface material.
12. The assembly of claim 9, wherein the first conductive layer is mechanically coupled to
20 the second conductive layer.
13. The assembly of claim 12, wherein the first conductive layer is bolted to the second
conductive layer.
- 25 14. The assembly of claim 9, wherein the first conductive layer comprises titanium, wherein
the second conductive layer comprises aluminum, and wherein the dielectric plate
comprises aluminum oxide.
15. The assembly of claim 9, wherein the plurality of openings pass through an entire
30 thickness of the housing assembly.
16. The assembly of claim 9, wherein the plurality of dielectric resonators and the dielectric
plate are a monolithic structure.

17. A processing tool, comprising:
a chamber; and
an assembly interfacing with the chamber, wherein the assembly comprises:
a source array that comprises:
5 a dielectric plate having a first surface and a second surface
opposite from the first surface, wherein the second surface is exposed to an interior
volume of the chamber, and wherein the first surface is exposed to an exterior
environment; and
a plurality of dielectric resonators that extend out from the first
10 surface of the dielectric plate, wherein the plurality of dielectric resonators and the
dielectric plate are a monolithic structure; and
a housing assembly over the monolithic source array, wherein the housing
assembly comprises:
a first conductive layer over the surface of the dielectric plate,
15 wherein the first conductive layer comprises a first coefficient of thermal expansion
(CTE);
a second conductive layer over the first conductive layer, wherein
the second conductive layer comprises a second CTE that is different than the first CTE;
and
20 a plurality of openings through the housing assembly, wherein
each opening passes through the first conductive layer and the second conductive layer,
and wherein each opening accommodates one of the plurality of dielectric resonators.
18. The processing tool of claim 17, wherein each dielectric resonator comprises a hole, and
25 wherein a monopole antenna is disposed in each hole.
19. The processing tool of claim 18, wherein each monopole antenna is coupled to a different
high-frequency emission module.
- 30 20. The processing tool of claim 17, further comprising:
a plate over a surface of the housing facing away from the monolithic source
array.