



US00D798846S

(12) **United States Design Patent** (10) **Patent No.:** US D798,846 S  
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(54) **ANTENNA ASSEMBLY**(71) Applicant: **Airgain, Incorporated**, San Diego, CA (US)(72) Inventors: **Wei Chang**, Zhang Jia Gang (CN); **Jindan Zhao**, Zhang Jia Gang (CN); **Xiangjie Bian**, Zhang Jia Gang (CN)(73) Assignee: **Airgain Incorporated**, San Diego, CA (US)(\*\*) Term: **14 Years**(21) Appl. No.: **29/509,424**(22) Filed: **Nov. 17, 2014**(51) LOC (10) Cl. ..... **14-03**

(52) U.S. Cl.

USPC ..... **D14/230**(58) **Field of Classification Search**

USPC ..... D14/230, 231, 232, 233, 234, 235, 236,

D14/237, 238, 138, 299, 358, 240;

D12/42, 43

CPC ..... H01Q 7/00; H01Q 13/10; H01Q 9/285;

H01Q 9/26; H01Q 19/30; H01Q 19/12;

H01Q 1/38; H01Q 1/36; H01Q 1/42;

H01Q 1/242; H01Q 1/243; H01Q 1/2266;

H01Q 1/20; H01Q 1/08; H01Q 1/1235;

H01Q 15/161; H01Q 15/162

See application file for complete search history.

(56) **References Cited**

## U.S. PATENT DOCUMENTS

7,061,437 B2	6/2006	Lin et al.
7,148,849 B2	12/2006	Lin
7,215,296 B2	5/2007	Abramov et al.
D546,821 S	7/2007	Oliver
D549,696 S	8/2007	Oshima et al.
7,333,067 B2	2/2008	Hung et al.
7,336,959 B2	2/2008	Khitrik et al.
D573,589 S	7/2008	Montgomery et al.

7,405,704 B1 7/2008 Lin et al.  
D582,400 S \* 12/2008 Takisawa ..... D14/230  
7,477,195 B2 1/2009 Vance  
(Continued)

*Primary Examiner — Karen S Acker**Assistant Examiner — Jerry Hsu**(74) Attorney, Agent, or Firm — Clause Eight IPS;  
Michael Catania*(57) **CLAIM**

The ornamental design for an antenna assembly, as shown and described.

**DESCRIPTION**

FIG. 1 is a top plan view of an antenna.

FIG. 2 is a side elevation view of the antenna of FIG. 1.

FIG. 3 is a bottom plan view of the antenna of FIG. 1.

FIG. 4 is an exploded perspective view of the antenna of FIG. 1.

FIG. 5 is an isolated isometric view of a first antenna element of the design shown in FIGS. 1-4.

FIG. 6 is an isolated front elevation view thereof.

FIG. 7 is an isolated side elevation view thereof.

FIG. 8 is an isolated bottom view thereof.

FIG. 9 is an isolated isometric view of a second antenna element of the design shown in FIGS. 1-4.

FIG. 10 is an isolated front elevation view thereof.

FIG. 11 is an isolated side elevation view thereof.

FIG. 12 is an isolated bottom plan view thereof.

FIG. 13 is an isolated isometric view of a third antenna element of the design shown in FIGS. 1-4.

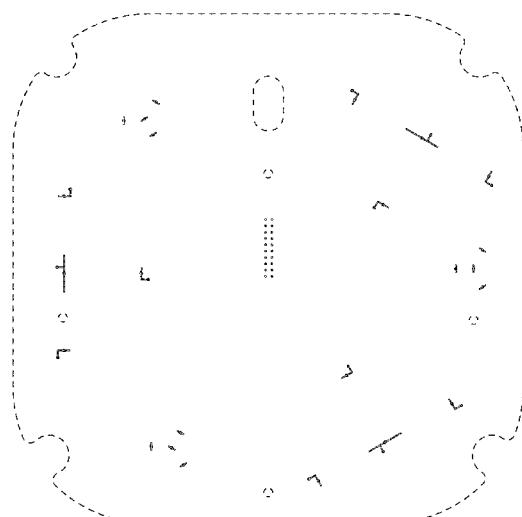
FIG. 14 is an isolated front elevation view thereof.

FIG. 15 is an isolated side elevation view thereof.

FIG. 16 is an isolated side elevation view thereof; and,

FIG. 17 is an isolated top plan view of the antenna connector element of the design.

The broken lines illustrate environment that forms no part of the claimed design.

**1 Claim, 6 Drawing Sheets**

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(56)	<b>References Cited</b>	8,482,471 B2 *	7/2013 Su .....	H01Q 7/00
	U.S. PATENT DOCUMENTS			343/700 MS
7,498,987 B2 *	3/2009 Svilgelj .....	H01Q 1/38	D689,474 S	9/2013 Yang et al.
		343/700 MS	D692,870 S	11/2013 He
D592,195 S	5/2009 Wu et al.		D694,738 S	12/2013 Yang
7,570,215 B2	8/2009 Abramov et al.		D695,279 S	12/2013 Yang et al.
D599,334 S	9/2009 Chiang		D695,280 S	12/2013 Yang et al.
D606,053 S	12/2009 Wu et al.		D703,195 S	4/2014 Zheng
D607,442 S	1/2010 Su et al.		D703,196 S	4/2014 Zheng
D608,769 S	1/2010 Bufo		D706,247 S	6/2014 Zheng et al.
D612,368 S	3/2010 Yang et al.		D706,750 S	6/2014 Bringuir
7,705,783 B2	4/2010 Rao et al.		D706,751 S	6/2014 Chang et al.
7,729,662 B2	6/2010 Abramov et al.		D708,602 S	7/2014 Gosalia et al.
D621,819 S	8/2010 Tsai et al.		D709,053 S	7/2014 Chang et al.
7,843,390 B2	11/2010 Liu		D710,832 S	8/2014 Yang
D633,483 S	3/2011 Su et al.		D710,833 S	8/2014 Zheng et al.
D635,127 S	3/2011 Tsai et al.		8,854,265 B1	10/2014 Yang et al.
7,907,971 B2	3/2011 Salo et al.		D716,775 S	11/2014 Bidermann
7,911,402 B2 *	3/2011 Rowson .....	H01Q 1/243	D733,104 S *	6/2015 Yang .....
		343/700 MS	9,077,077 B2 *	H01Q 1/243
D635,560 S	4/2011 Tsai et al.		D754,108 S *	4/2016 Yang .....
D635,963 S	4/2011 Podduturi		2002/0003499 A1	D14/230
D635,964 S	4/2011 Podduturi		2004/0222936 A1	1/2002 Kouam et al.
D635,965 S	4/2011 Mi et al.		2005/0073462 A1	11/2004 Hung et al.
D636,382 S	4/2011 Podduturi		2005/0190108 A1	4/2005 Lin et al.
7,965,242 B2	6/2011 Abramov et al.		2005/0237258 A1 *	2005/0190108 A1
D649,962 S	12/2011 Tseng et al.		10/2005 Abramov .....	H01Q 3/24
D651,198 S	12/2011 Mi et al.			343/834
D654,059 S	2/2012 Mi et al.		2006/0044196 A1 *	3/2006 Grant .....
D654,060 S	2/2012 Ko et al.			H01Q 1/3275
D658,639 S	5/2012 Huang et al.			343/713
D659,129 S	5/2012 Mi et al.		2006/0208900 A1	9/2006 Tavassoli Hozouri
D659,685 S	5/2012 Huang et al.		2007/0030203 A1	2/2007 Tsai et al.
D659,688 S	5/2012 Huang et al.		2008/0150829 A1	6/2008 Lin et al.
8,175,036 B2	5/2012 Visuri et al.		2009/0002244 A1	1/2009 Woo
8,184,601 B2	5/2012 Abramov et al.		2009/0058739 A1	3/2009 Konishi
D662,916 S	7/2012 Huang et al.		2009/0135072 A1	5/2009 Ke et al.
8,248,970 B2	8/2012 Abramov et al.		2009/0262028 A1	10/2009 Mumbru et al.
D671,097 S	11/2012 Mi et al.		2010/0188297 A1	7/2010 Chen et al.
8,310,402 B2	11/2012 Yang		2010/0309067 A1	12/2010 Tsou et al.
D676,429 S	2/2013 Gosalia et al.		2011/0006950 A1	1/2011 Park et al.
D678,255 S	3/2013 Ko et al.		2012/0038514 A1	2/2012 Bang
8,423,084 B2	4/2013 Abramov et al.		2012/0229348 A1	9/2012 Chiang
D684,565 S	6/2013 Wei		2012/0242546 A1	9/2012 Hu et al.
D685,352 S	7/2013 Wei		2012/0287000 A1 *	11/2012 Ando .....
D685,772 S	7/2013 Zheng et al.			H01Q 21/08
D686,600 S	7/2013 Yang			343/700 MS
			2013/0176177 A1 *	7/2013 Cetiner .....
				H01Q 19/005
			2014/0210687 A1 *	7/2014 Chiu .....
				H01Q 1/2283
				343/872

\* cited by examiner

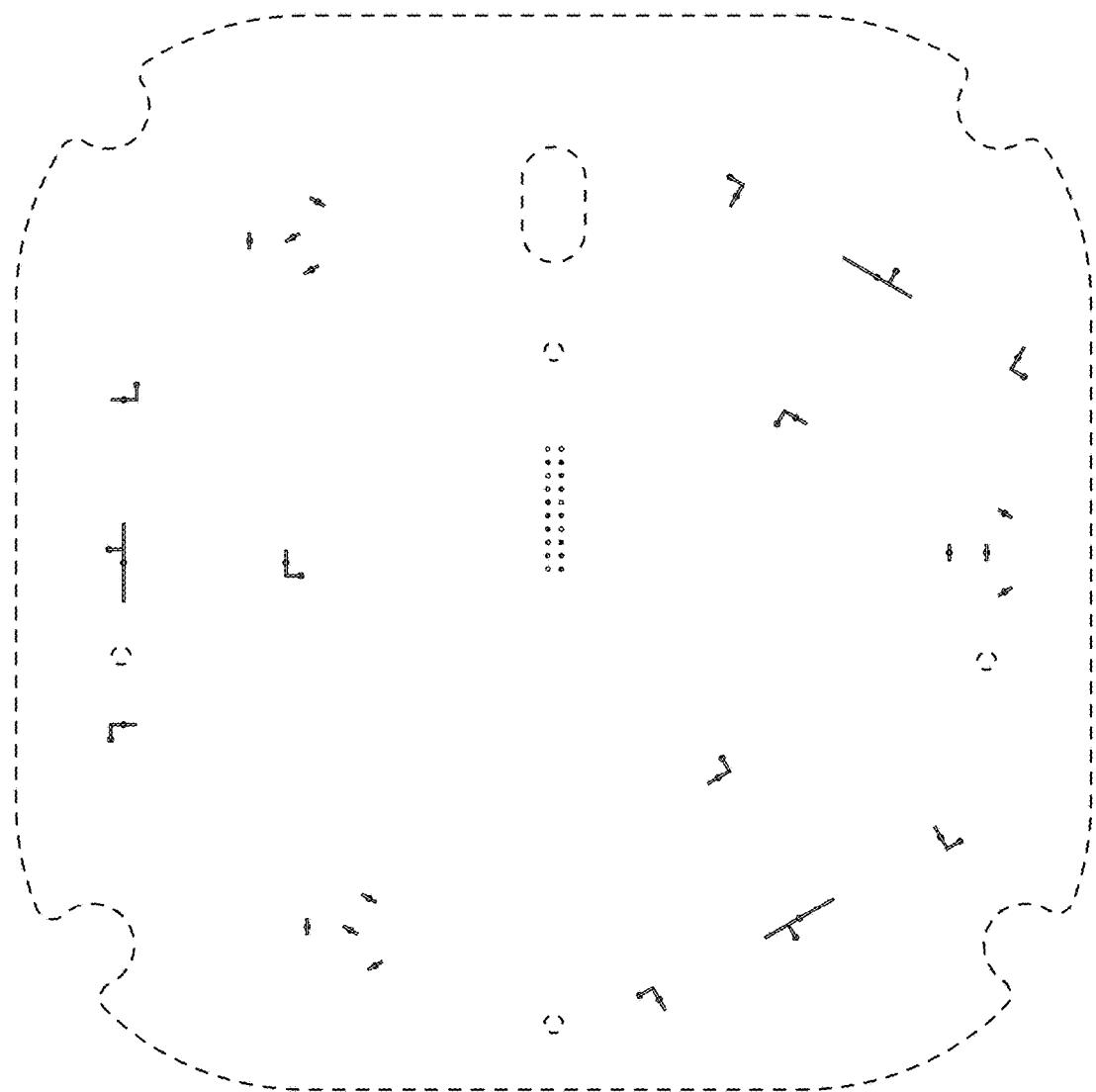
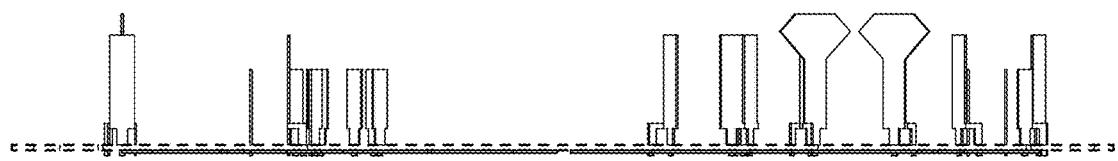


FIG. 1



**FIG. 2**

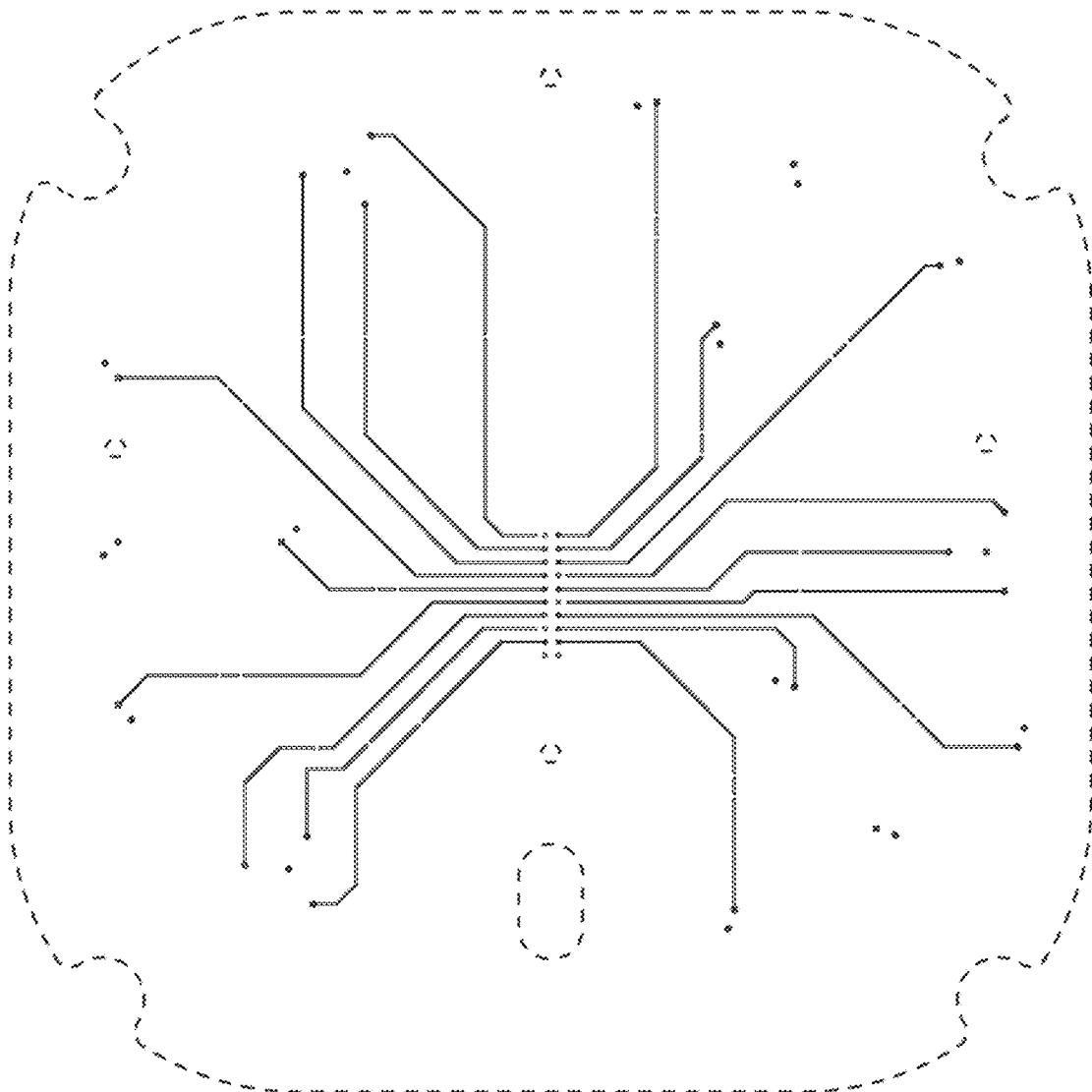


FIG. 3

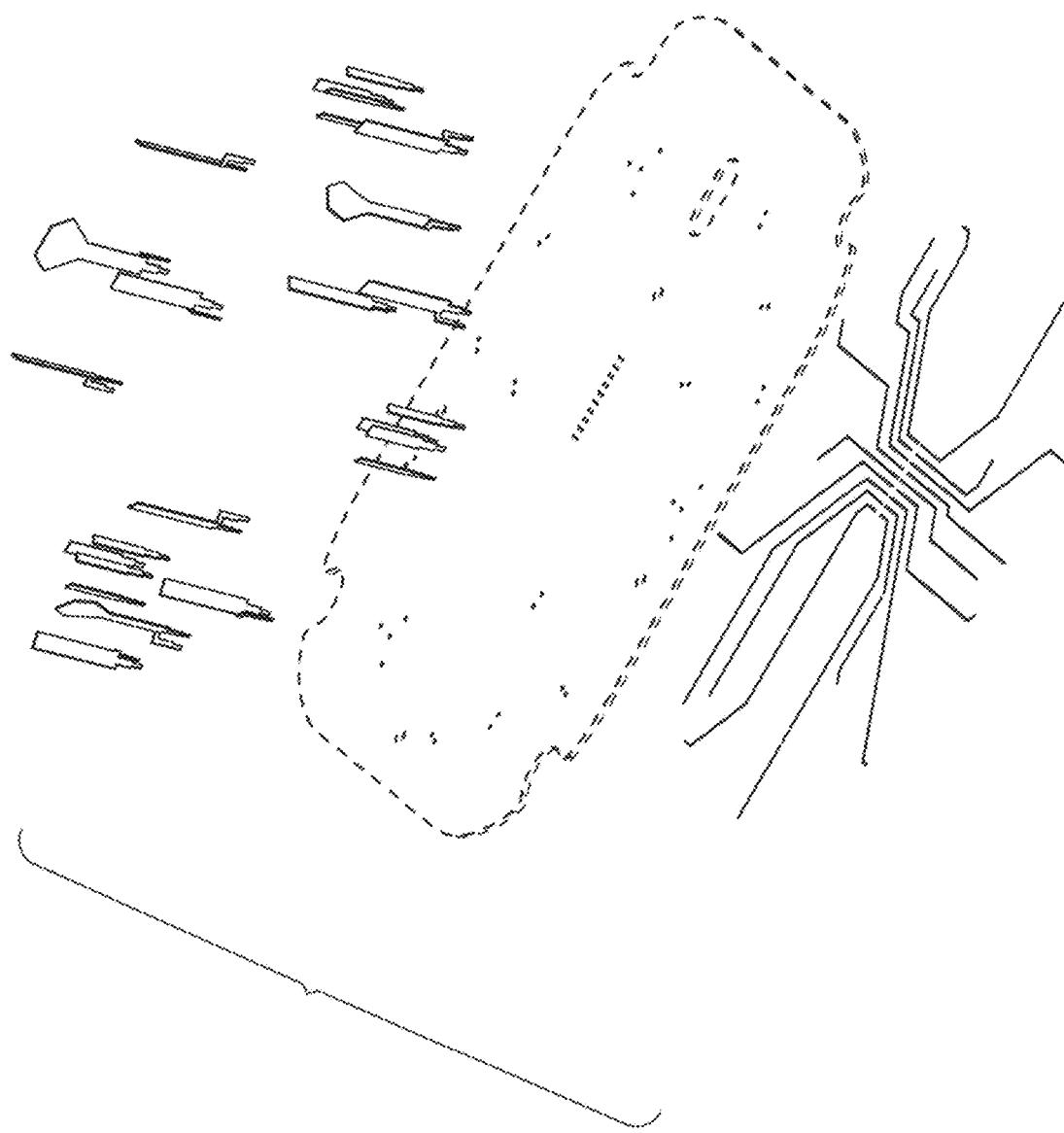


FIG. 4

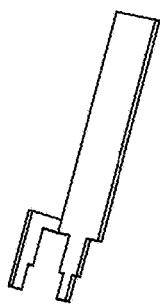


FIG. 5

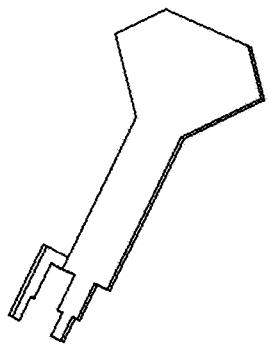


FIG. 9

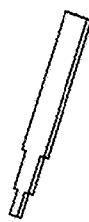


FIG. 13



FIG. 6

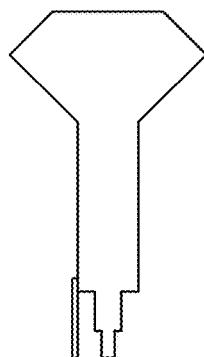


FIG. 10



FIG. 14



FIG. 7



FIG. 11

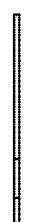


FIG. 15



FIG. 8

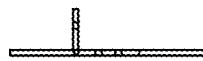
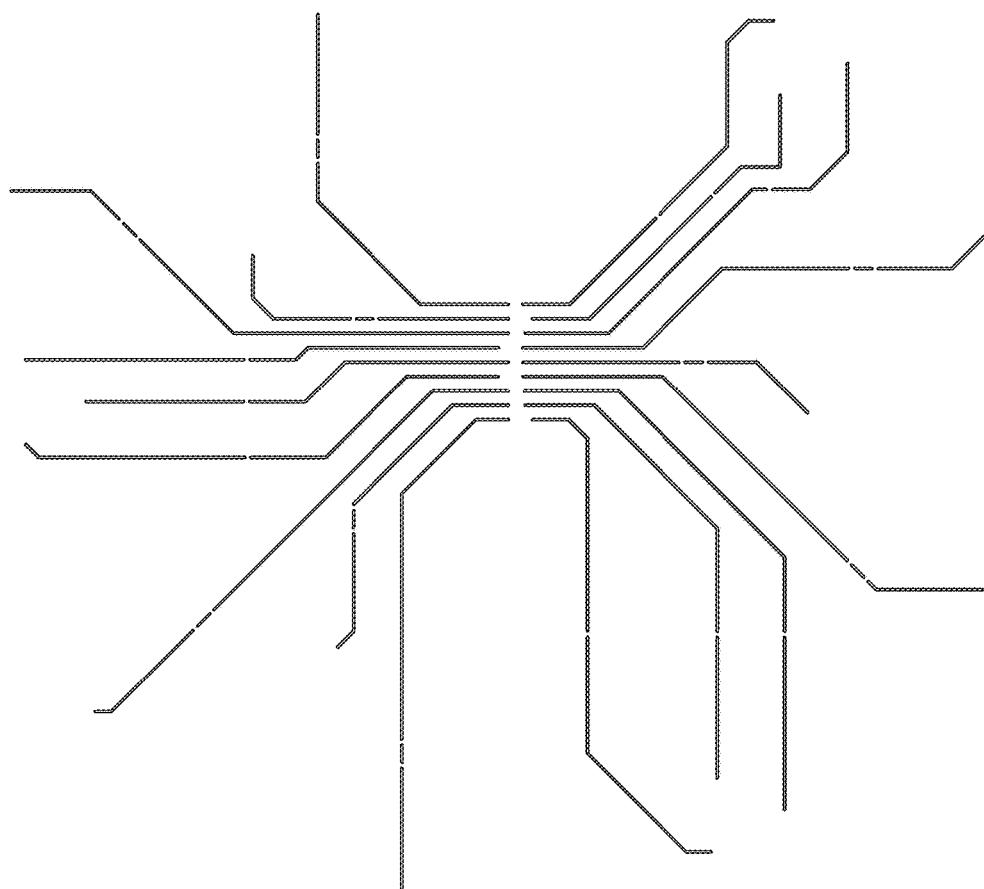


FIG. 12



FIG. 16



**FIG. 17**