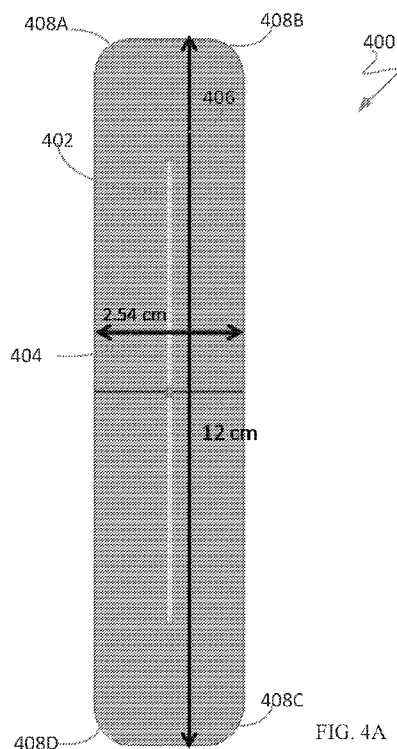




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- (72) Inventors; and
- (71) Applicants : ANDRESEN, Chad David [US/US]; 860 N Shore Drive, Miami Beach, Florida 33141 (US). LE-BARON, Richard [US/US]; 5151 Collins Avenue, Apt 426, Miami Beach, Florida 33140 (US). PERRYMAN, Laura Tyler [US/US]; 1521 Alton Road, Suite 417, Miami Beach, Florida 33139 (US).
- (74) Agents: GREENE, Kevin E. et al.; Fish & Richardson P.C., P.O. Box 1022, Minneapolis, Minnesota 55440-1022 (US).
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[Continued on next page]

(54) Title: ANTENNA ASSEMBLY



(57) Abstract: An antenna assembly includes a metal layer configured to emit linearly polarized electromagnetic energy to a receiving antenna implanted underneath a subject's skin; and a feed port configured to connect the antenna assembly to a signal generator such that the antenna assembly receives an input signal from the signal generator and then transmits the input signal to the receiving dipole antenna, wherein the antenna assembly is less than 200 μm in thickness, and wherein the metal layer is operable as a dipole antenna with a reflection ratio of at least 6dB, the reflection ratio corresponding to a ratio of a transmission power of the antenna assembly in transmitting the input signal and a reflection power seen by the antenna assembly resulting from electromagnetic emission of the input signal.



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International application No.

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A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - A61N 1/36; H01Q 1/27 (2016.01)

CPC - A61N 1/3605, 1/37229

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC(8) - A61N1/36, H01Q1/27, A61N1/372, H01Q1/36, H01Q9/04 (2016.01)

CPC - A61N1/3605, A61N1/37229, H01Q9/065, H01Q9/285, A61N1/36125

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

PatSeer (US, EP, WO, JP, DE, GB, CN, FR, KR, ES, AU, IN, CA, INPADOC Data); Google/Google Scholar, EBSCO Discovery Service, IEEE

Keywords: Dipole, antenna, implant, reflection ratio, linear polarization, bow-tie, micron, μm , 200 μm

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2013/0088304 A1 (HENDERSON, R. et al.) 11 April 2013; figure 1, paragraphs [0008], [0029], [0030], [0056].	1-4 and 6-20
Y	US 2012/0212380 A1 (THEOBOLD, D.) 23 August 2012; paragraphs [0017], [0021], [0043], [0047].	1-4 and 6-13
Y	US 2012/0111950 A1 (WORRALL, D.) 10 May 2012; figure 14, paragraphs [0050], [0068].	1-4 and 6-20
Y	US 2013/0056689 A1 (ZHANG, R. et al.) 07 March 2013; figure 18b, paragraphs [0012], [0092].	1-4 and 6-20
Y	US 2014/0336727 A1 (MICRON DEVICES, LLC.) 13 November 2014; figure 1, paragraphs [0054], [0055], [0058], [0171].	14-20
Y	US 2010/0171675 A1 (BORJA, C. et al.) 08 July 2010; figure 2, paragraphs [0011], [0021], [0041].	2-4, 6 and 16-18
Y	US 2008/0304686 A1 (MESKENS, W. et al.) 11 December 2008; figures 2A and 2B, paragraph [0033].	8 and 15
Y	US 7760152 B2 (SEPPA, H.) 20, July 2010; column 3, lines 56-57.	12
A	US 2011/0250402 A1 (OLDHAM, M. et al.) 13 October 2011; paragraph [0003].	5
A	US 2007/0058686 A1 (CAPASSO, F. et al.) 15 March 2007; paragraph [0056].	5
A	US 2012/281957 A1 (MAYSAMREZA, C. et al.) 08 November 2012; paragraph [0006].	5

☐ Further documents are listed in the continuation of Box C.
 ☐ See patent family annex.

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"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

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Mail Stop PCT, Attn: ISA/US, Commissioner for Patents
P.O. Box 1450, Alexandria, Virginia 22313-1450
Facsimile No. 571-273-8300

Authorized officer

Shane Thomas

PCT Helpdesk: 571-272-4300
PCT OSP: 571-272-7774