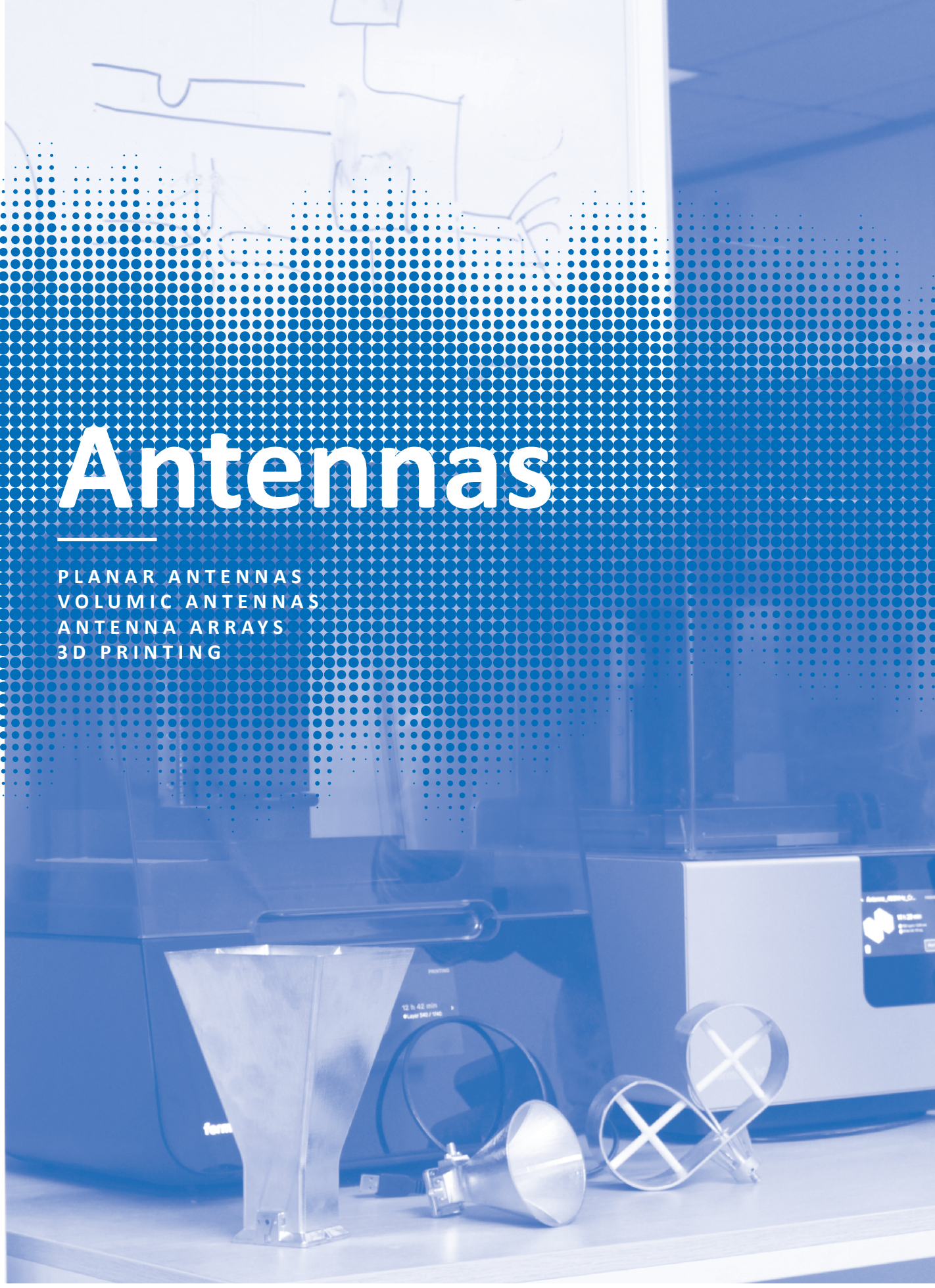
Antennas

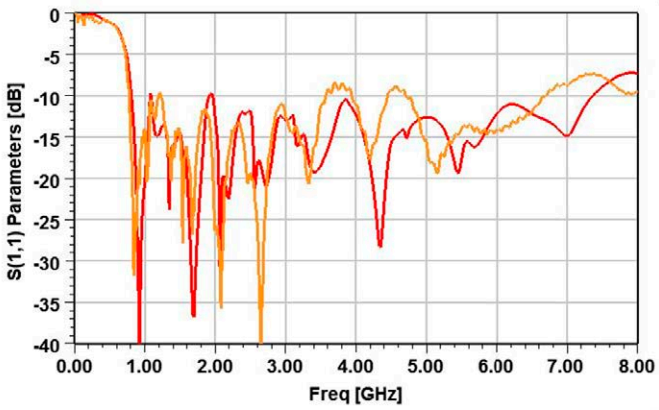
PLANAR ANTENNAS
VOLUMIC ANTENNAS
ANTENNA ARRAYS
3D PRINTING

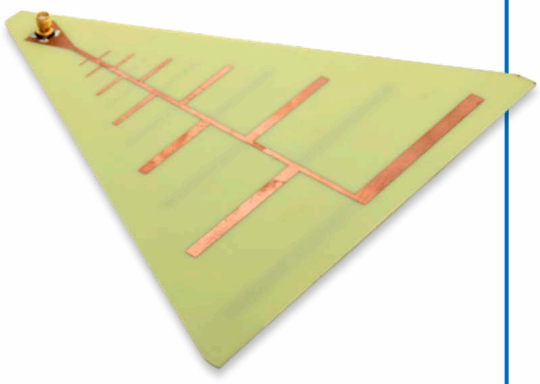


ANTENNES **PLANAIRES**

LOG PERIODIC DIPOLE ANTENNA LPDA

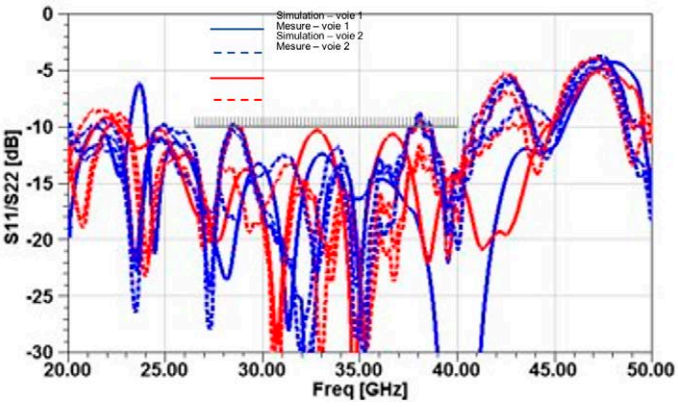
- Low-cost FR4 substrate log periodic dipole antenna
- Operating frequency band from 800 MHz to 6,7 GHz.

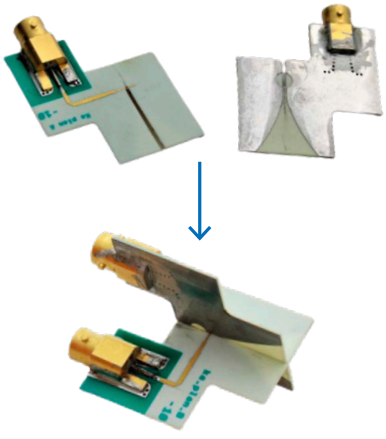




DOUBLE POLARIZED VIVALDI ANTENNA

- Ka band double polarized Vivaldi antenna (26,5 – 40GHz) on 380 µm thick RO4350 substrate.
- The antenna is obtained by assembling two simple polarization Vivaldi antenna parts.



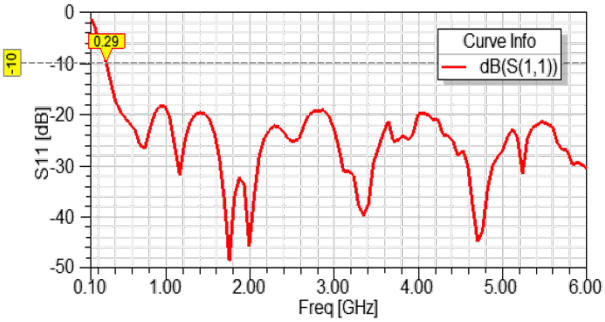


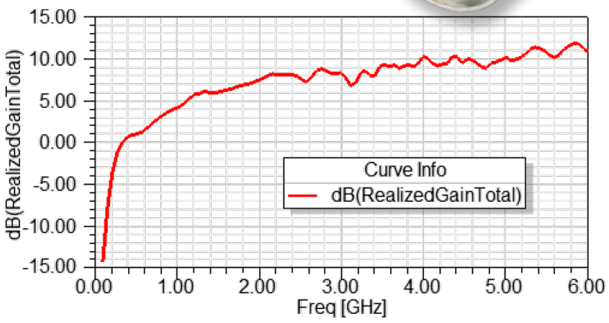
PLANAR TOPOLOGIES	TECHNOLOGIES	FREQUENCY	BANDWIDTH	IMPEDANCE MATCHING	POLARIZATION	GAIN/DIRECTIVITY	MOUNTING TYPES
▪ Monopôle ▪ Dipôle ▪ Patch ▪ Log-périodic ▪ Vivaldi ▪ Slot etc...	▪ Printed circuit microstrip or SIW **Rogers, FR4, Megtron...**	300 MHz ↓ 50 GHz	▪ Narrow band to ultra wide band	S11 < -10dB (typ.) S11 < -15dB S11 < -20dB	▪ Simple polar V, H, LHCP, RHCP ▪ Double polar ▪ Low cross-pol	▪ Omnidirectionnal / Bidirectional / Directional ▪ Gisement et Élévation selon besoin ▪ Lobes secondaires faibles sur demande	▪ SMA, 3,5mm, 2,92mm, SMP, ... ▪ Surface mount

VOLUMIC ANTENNAS

FOLDED BUTTERFLY ANTENNA

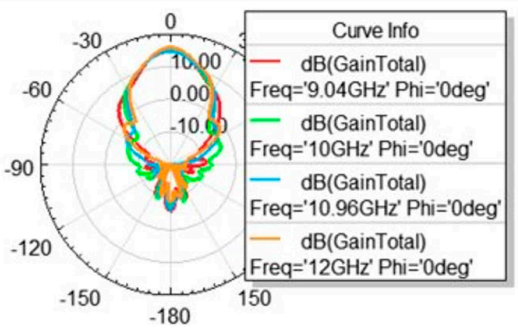
• Additive manufacturing ultra wide band (300 MHz – 6+ GHz).
• Gain varying between 0dBi at 300 MHz to 11dBi at 6GHz.

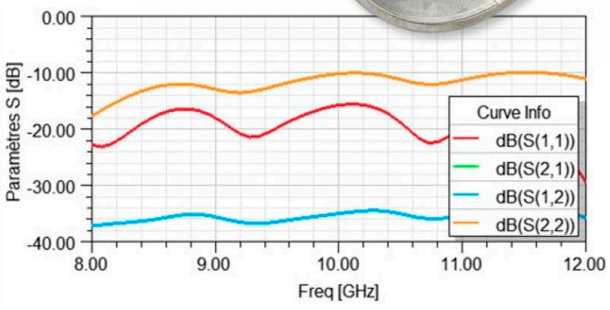




DUAL POLARIZATION DOUBLE RDGED HORN ANTENNA

• X band operating bandwidth (8 - 12 GHz) with a maximun gain of 15dBi and < -35dB cross-pol.





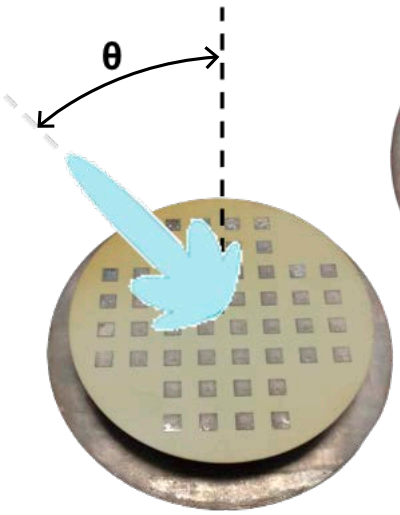
PLANAR TOPOLOGIES	TECHNOLOGIES	FREQUENCY	BANDEWIDTH	IMPEDANCE MATCHING	POLARIZATION	GAIN/DIRECTIVITY	MOUNTING TYPES
▪ Horn ▪ Ridged horn ▪ Corrugated horn ▪ Waveguide slot ▪ Helix ▪ Parabolic etc…	▪ 3D printing ▪ Machining	300 MHz ↓ 120 GHz	▪ Narrow band to ultra wide band	▪ S11 < -10dB **(typ.)** ▪ S11 < -15dB ▪ S11 < -20dB	▪ Simple polar **V, H, LHCP, RHCP** ▪ Double polar ▪ Low cross-pol	▪ Omnidirectional / Bidirectional / Directional ▪ Gisement et Élévation selon besoin ▪ Lobes secondaires faibles sur demande	▪ SMA, 3,5 mm, 2,92 mm, SMP, Guide…

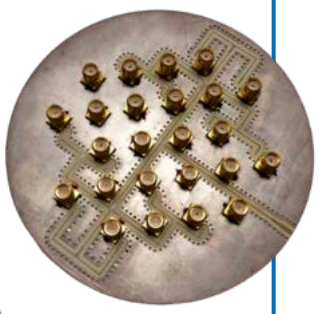
ANTENNA **ARRAYS**

PLANAR ANTENNA ARRAY

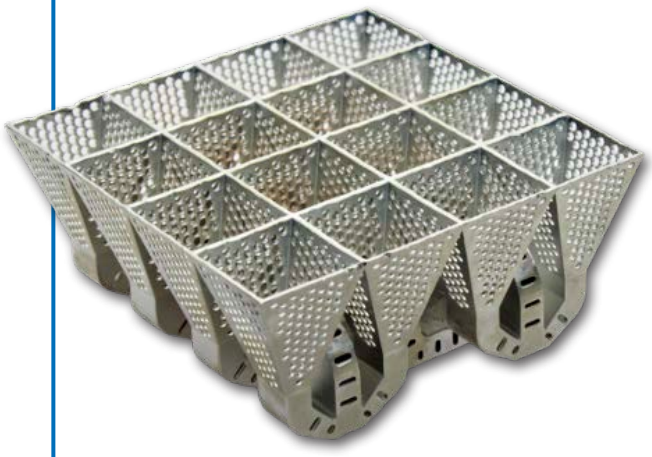
• Antenna arrays are realized for beam steering, beam switching, beamforming and/or high gain applications.

• Opposite, a 24 channels electronic beam steering Ku band antenna array for radar application.





Ci-contre, un réseau radar 24 voies sur substrat Rogers 4350 en bande Ku (12 – 18 GHz).



VOLUMIC ANTENNA ARRAY

• 4x4 bande Ka (26,5 – 40 GHz) antenna array.

• 16 antennas and their feeding network ar realized in one bloc thanks to the additive manufacturing.

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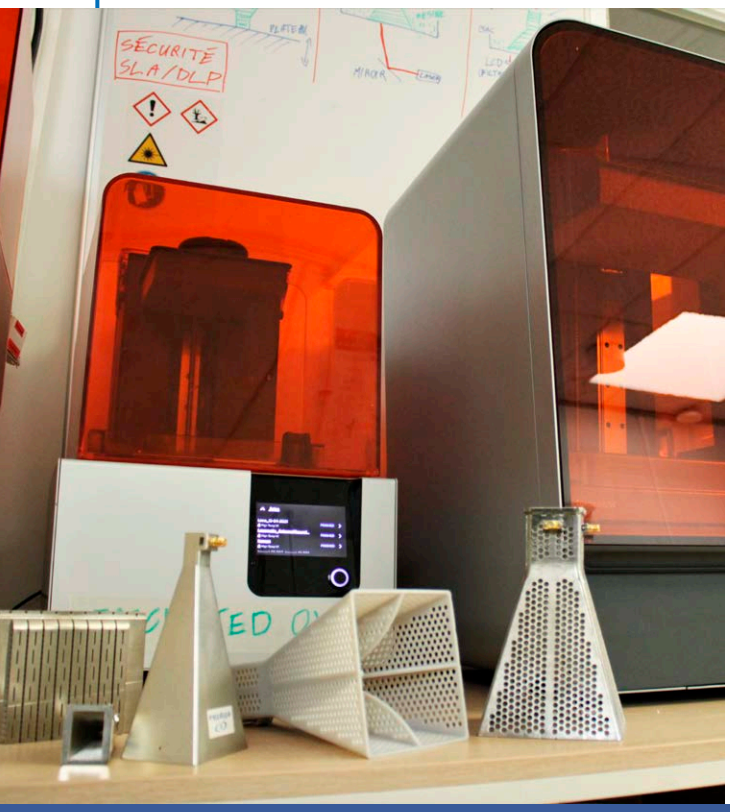
▪ Horn ▪ Ridged horn ▪ Corrugated horn ▪ Waveguide slot ▪ Helix ▪ Patch etc…	▪ 3D printing ▪ Machining	**300 MHz** ↓ **120 GHz**	▪ Narrow band to ultra wide band	S11 < -10dB **(typ.)** S11 < -15dB S11 < -20dB	▪ Simple polar **V, H, LHCP, RHCP** ▪ Double polar ▪ Low cross-pol	▪ Directionnelle ▪ Gisement et Élévation selon besoin ▪ Lobes secondaires faibles sur demande	▪ SMA, 3,5mm, 2,92mm, SMP, Guide, ▪ Waveguide, ▪ Surface mount …

3D PRINTING



CUSTOM ANTENNA

• Recognized expert in the design of microwave components thanks to its teams of doctors and engineers, Elliptika offers customized solutions for your antenna needs.

• Elliptika also offers the design and production of dynamic hanging and placement customized systems.

REDUCED COST, INCREASED PERFORMANCE!

• 3D printing allows Elliptika to offer a range of off-the-shelf components (antenna, guide, transition), custom at very competitive prices.

• Additive manufacturing also makes it possible to offer extremely short lead times and to overcome certain manufacturing constraints to offer compact and lightweight antennas.

CO-DESIGN

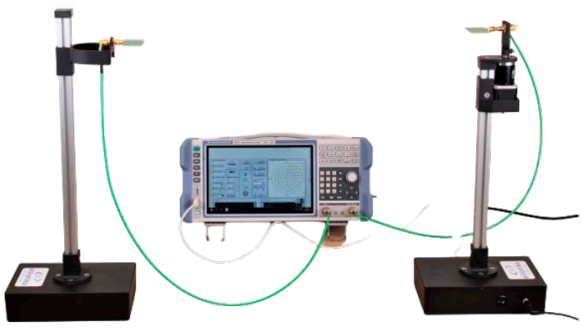
Elliptika also offers to adapt your models or existing antennas for 3D printing in order to benefit from the advantages of additive manufacturing while maintaining the existing function.

3D PRINTING

With a maximum print volume of 300 x 300 x 400 mm3 and a wide choice of materials, Elliptika will offer you a suitable solution tailored for your needs.

METALLIZATION OF PLASTIC PARTS

Elliptika offers various metallic finishes for its 3D printed antennas (tin, copper, nickel, etc.).



ANTENNA MEASUREMENT BENCH

• 3D printing also makes it possible to create all the mechanical part associated with RF devices. Elliptika has developed static or dynamic antenna placement systems.

Opposite, a radiation pattern measuring bench.

CONTACT US :

ELLIPTIKA
2, rue Charles Jourde
29200 Brest
France

Tél : 02 98 02 03 40
Mob : 06 64 79 64 02

alexandre.manchec@elliptika.com

www.elliptika.com