

Impression 3D de blindages électromagnétiques

REX sur des cas d'usage: simulations et mesures

C.Alayrac & D. Chariag – 17/03/2026 – version 1.0

Réf du document : Atelier_Imp3D_Blindage_CA_V1p0_20260317.odp

Le CRT CRESITT est soutenu par :



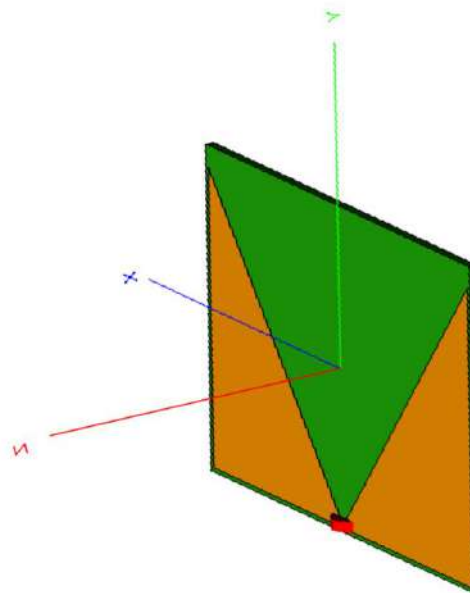
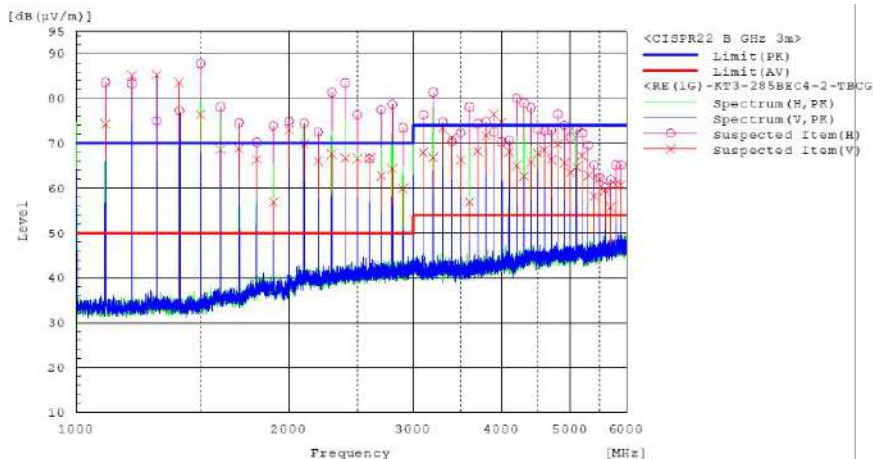
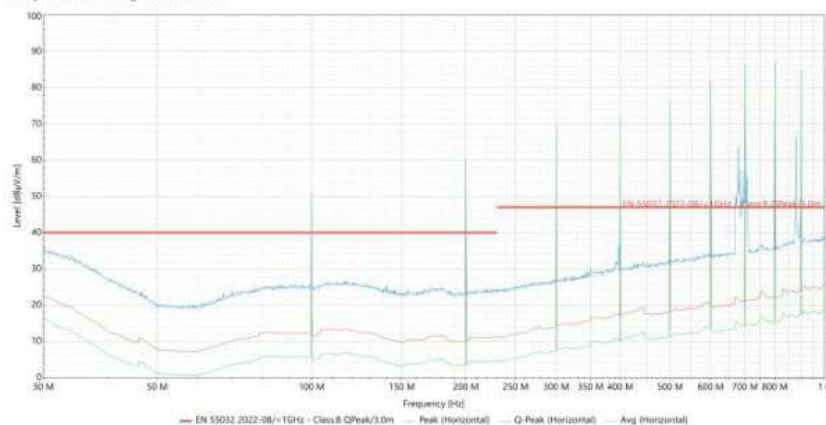
Cofinancé par
l'Union européenne



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L'Europe s'engage en région Centre-Val de Loire avec le Fonds européen de développement régional.

- Les moyens (mesure, simulation)
- Les modèles imprimés
- Les résultats

Graph for subrange Horizontal



TBCG1-100MHz



- | | |
|------------------------------|-----------------------------------|
| Base frequency: | 100MHz |
| Characterized comb spectrum: | 30MHz - 6 GHz |
| Tolerance: | +/- 2.5 dB |
| Power supply: | 9V PP3 (E-block) alkaline battery |
| Current consumption: | 175mA |
| Dimensions: | 80mm x 61mm x 27mm |
| Weight including battery: | 76g |

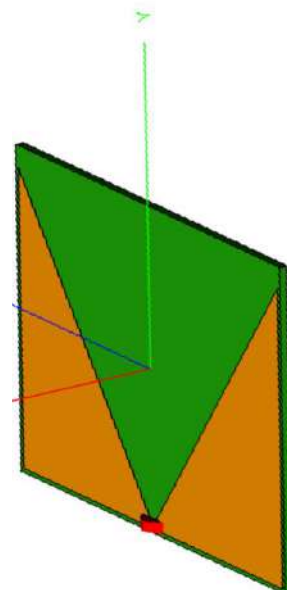


E4407B

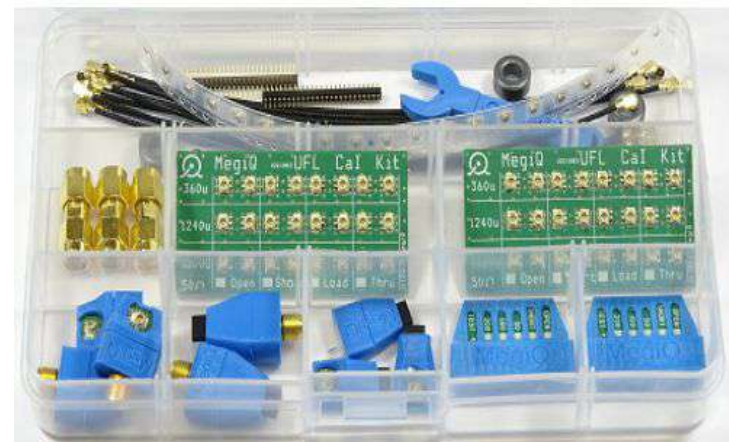
9 kHz to 26.5 GHz



Balayage 100MHz-20GHz
Pas 100MHz
Span 100kHz
RBW 1kHz
Recherche du max



UFL-BAL-CAL



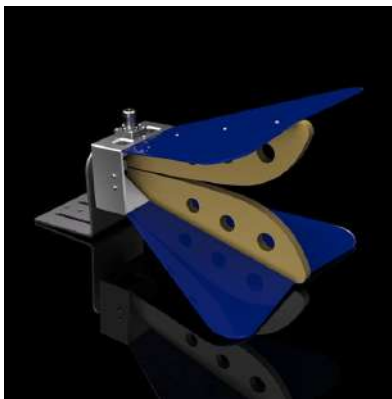
R&S® ZND-K6

Full test set, 8.5 GHz	bidirectional measurement capabilities for units with a frequency range of 8.5 GHz
Frequency range	100 kHz to 8.5 GHz
Bidirectional measurements	yes
Prerequisites	R&S® ZND base unit with R&S® ZND-K1



E4407B 9 kHz to 26.5 GHz

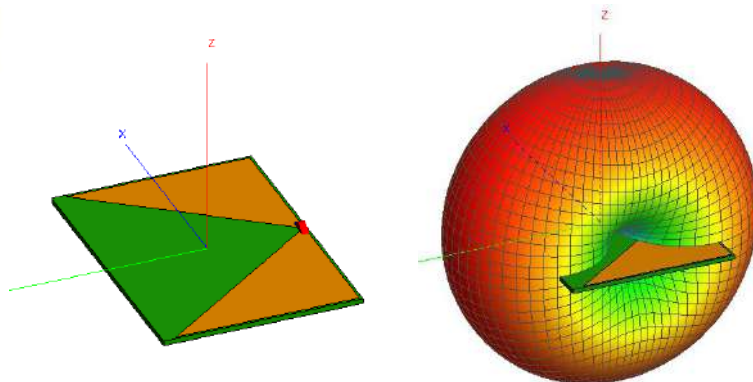
AARONIA PowerLog 70180
700MHz-18GHz



8360 L-Series Swept CW Generator
100kHz-26GHz

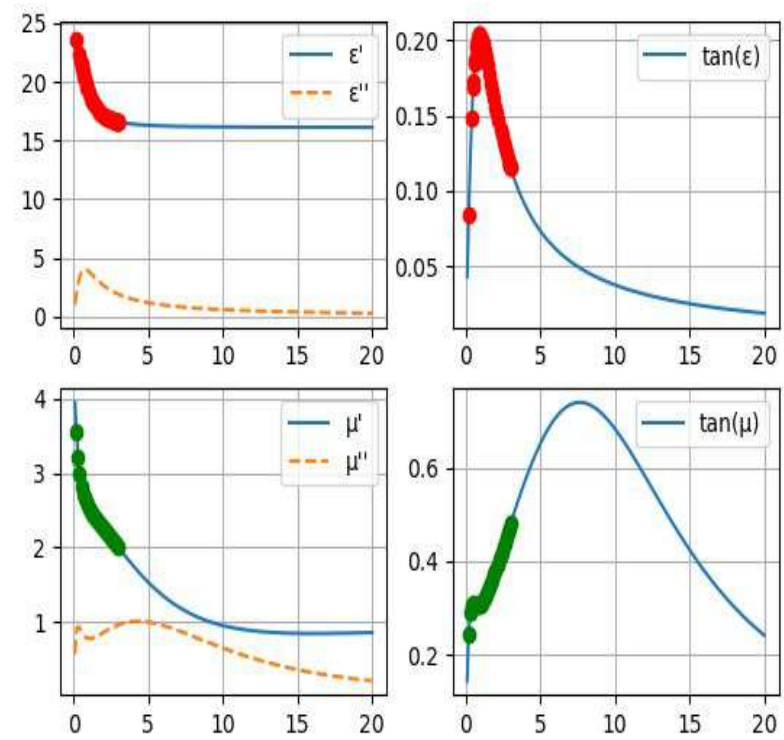
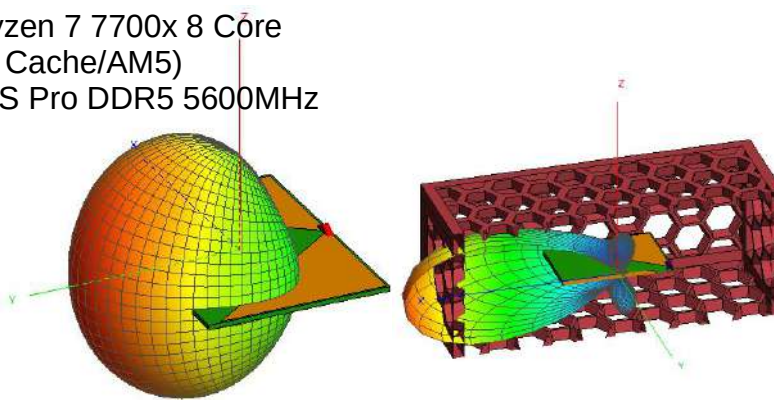


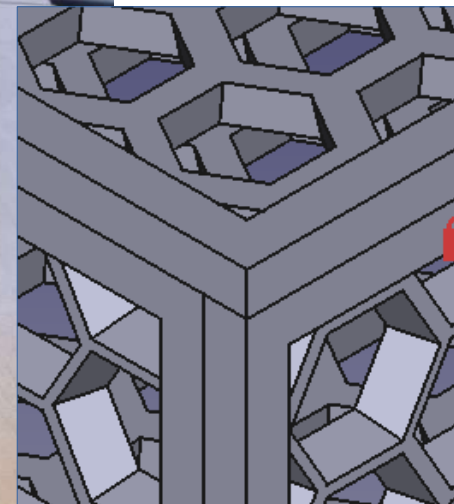
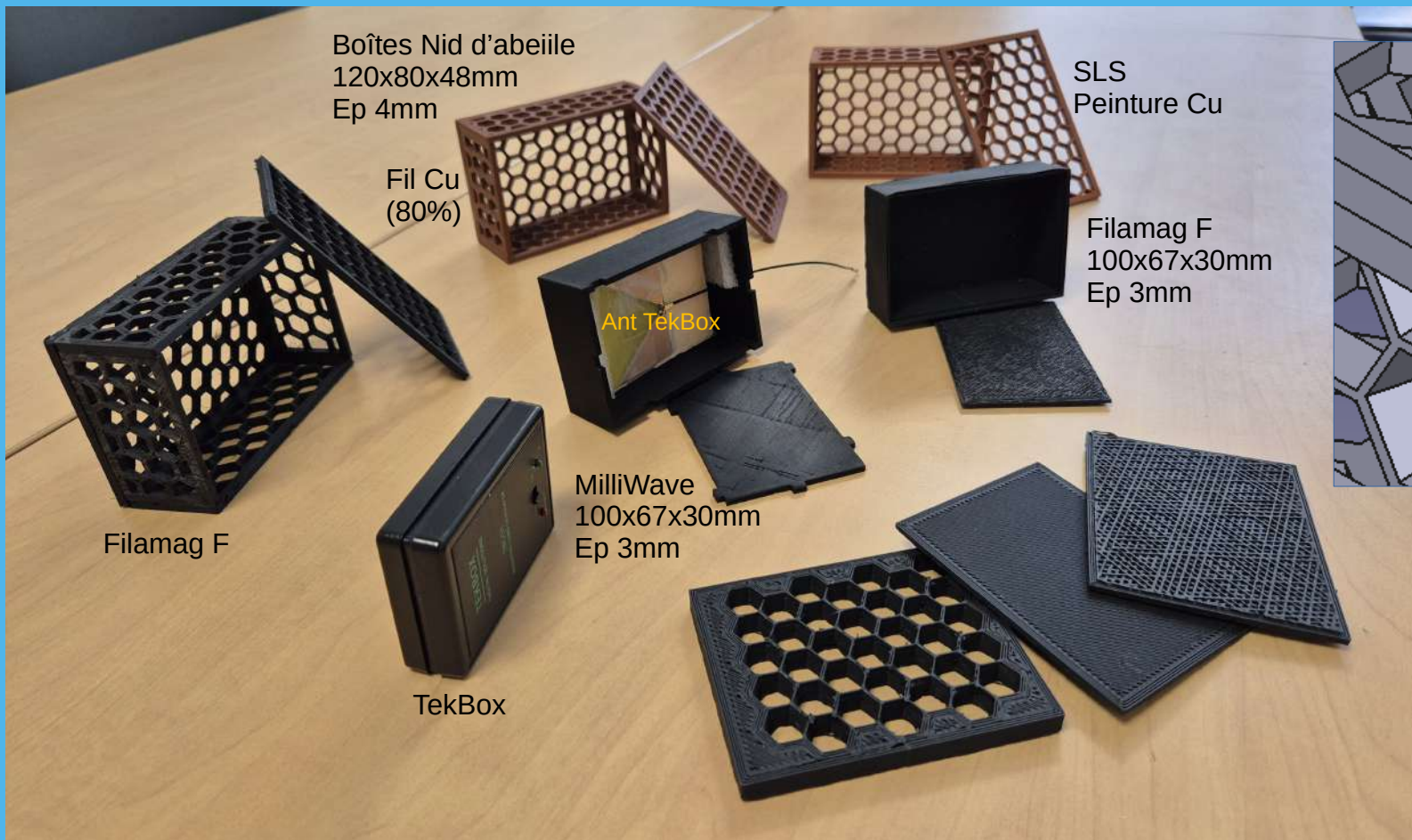
Balayage CW 100MHz-20GHz
Pas 20MHz
Span 100kHz
RBW 1kHz



PC :
Processeur AMD Ryzen 7 7700x 8 Cœur
(4,5-5,4GHz/40Mo Cache/AM5)
Mémoire : 32Go PCS Pro DDR5 5600MHz

35 Jetons Altair

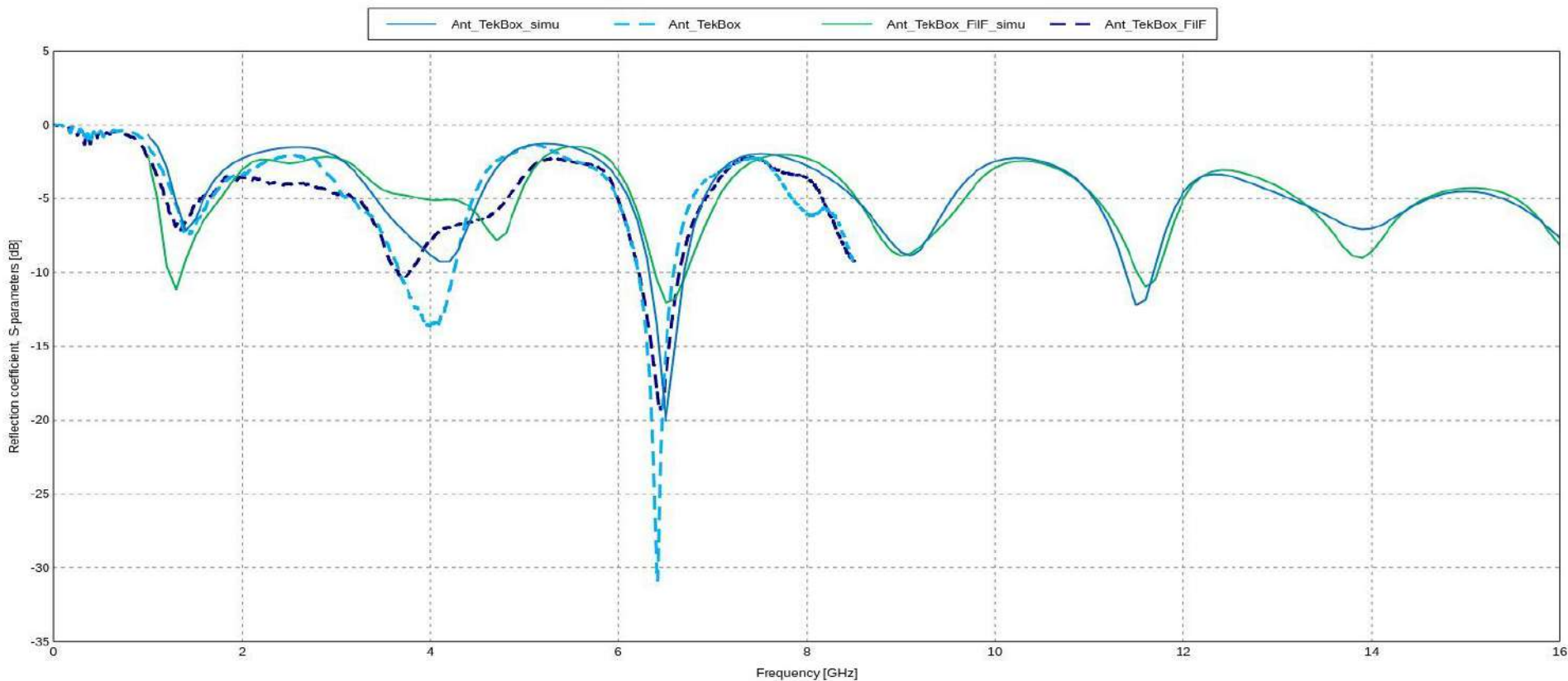




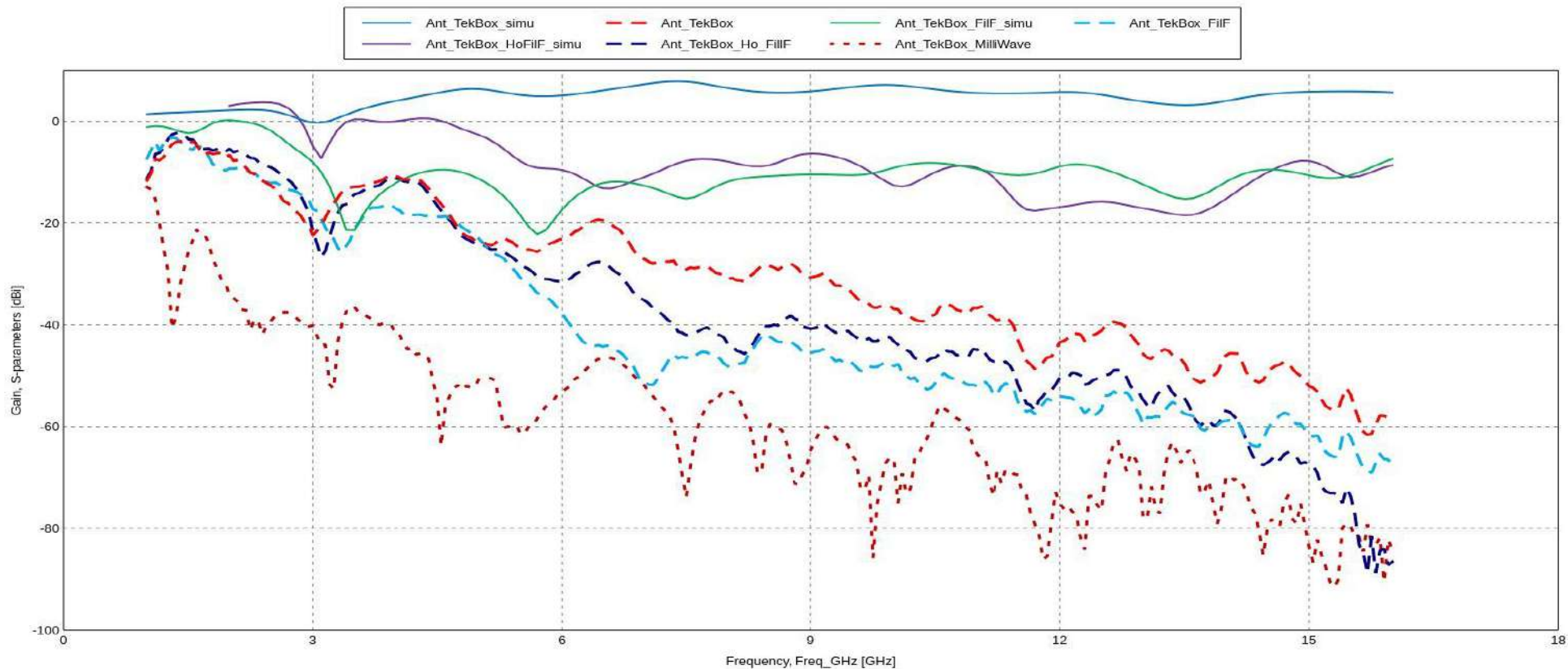
Nid d'abeille :
Rayon 6mm
Base largeur 3mm
Sommet largeur 1mm
Hauteur 4mm



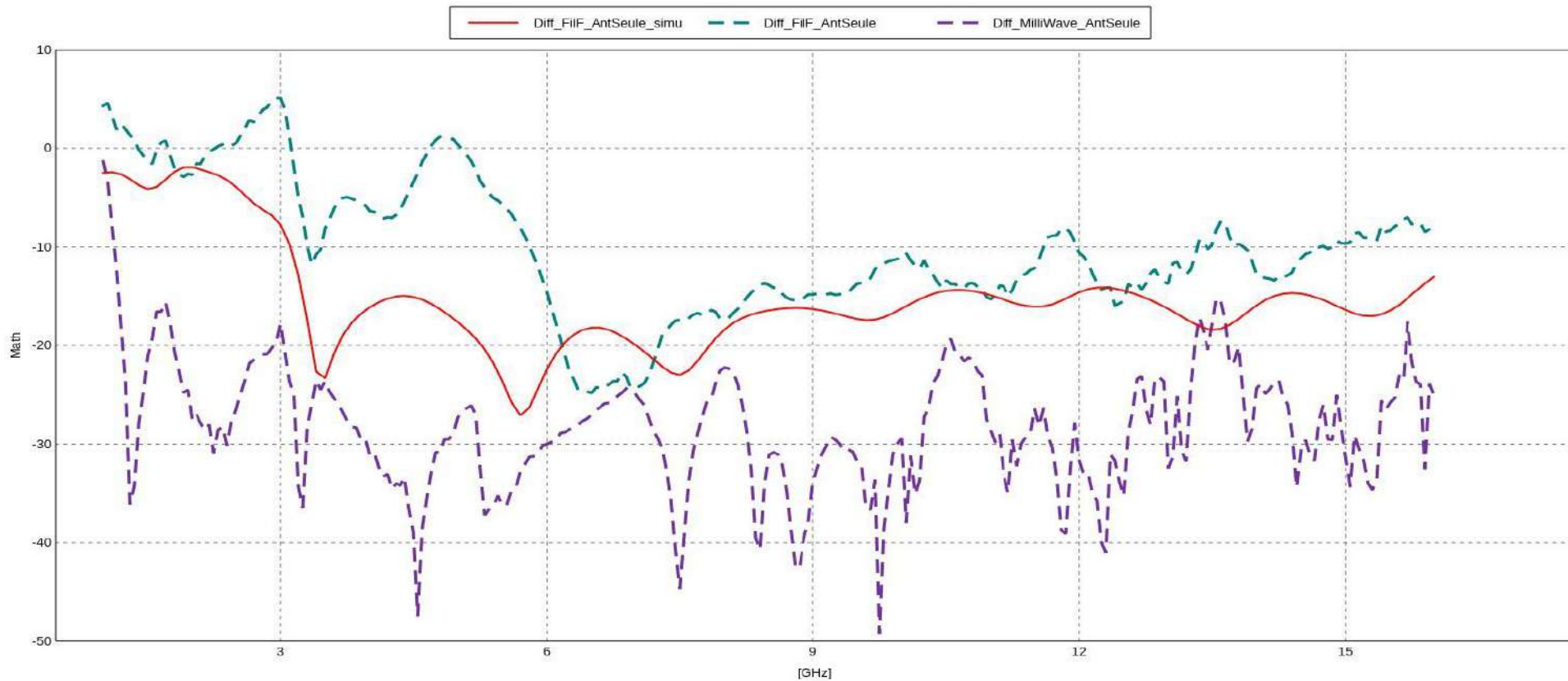
Paramètre S11 (dB)



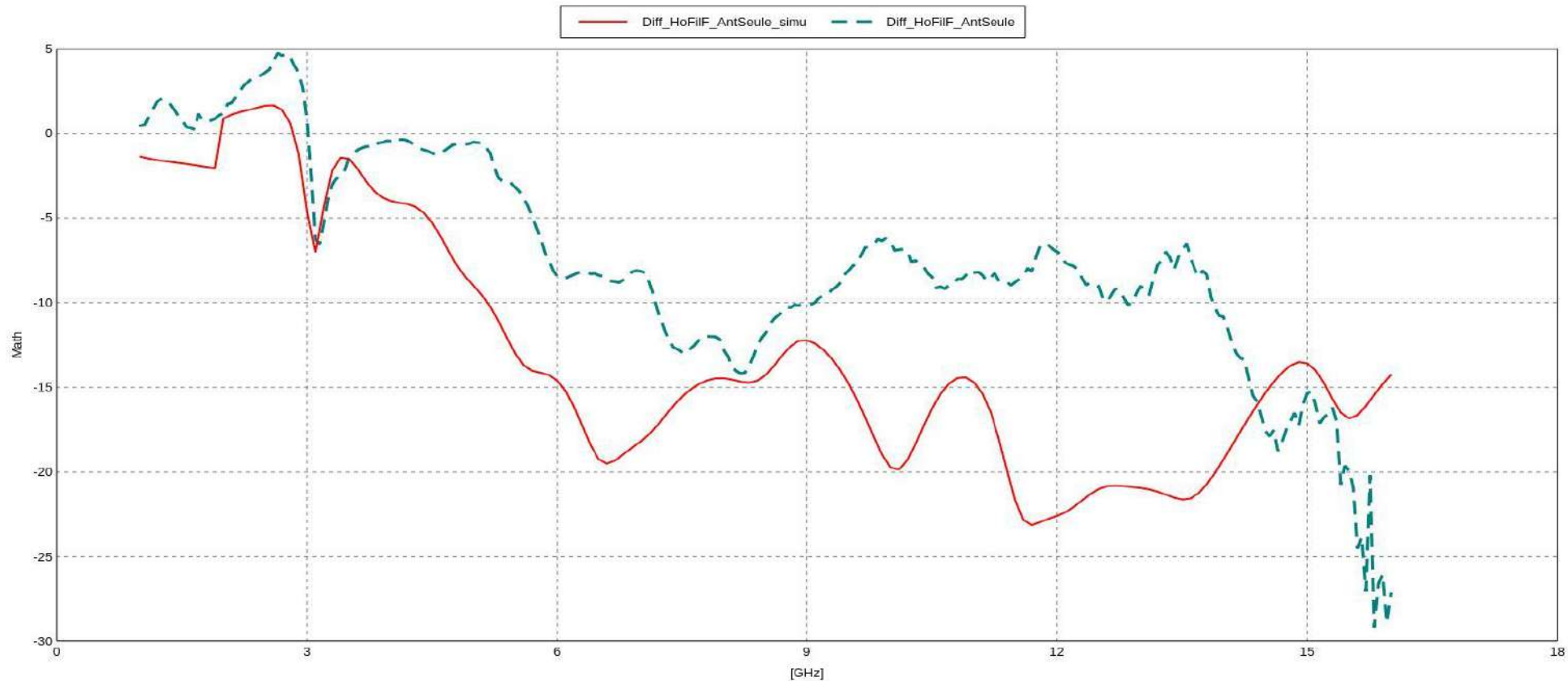
Comparaison boîtes



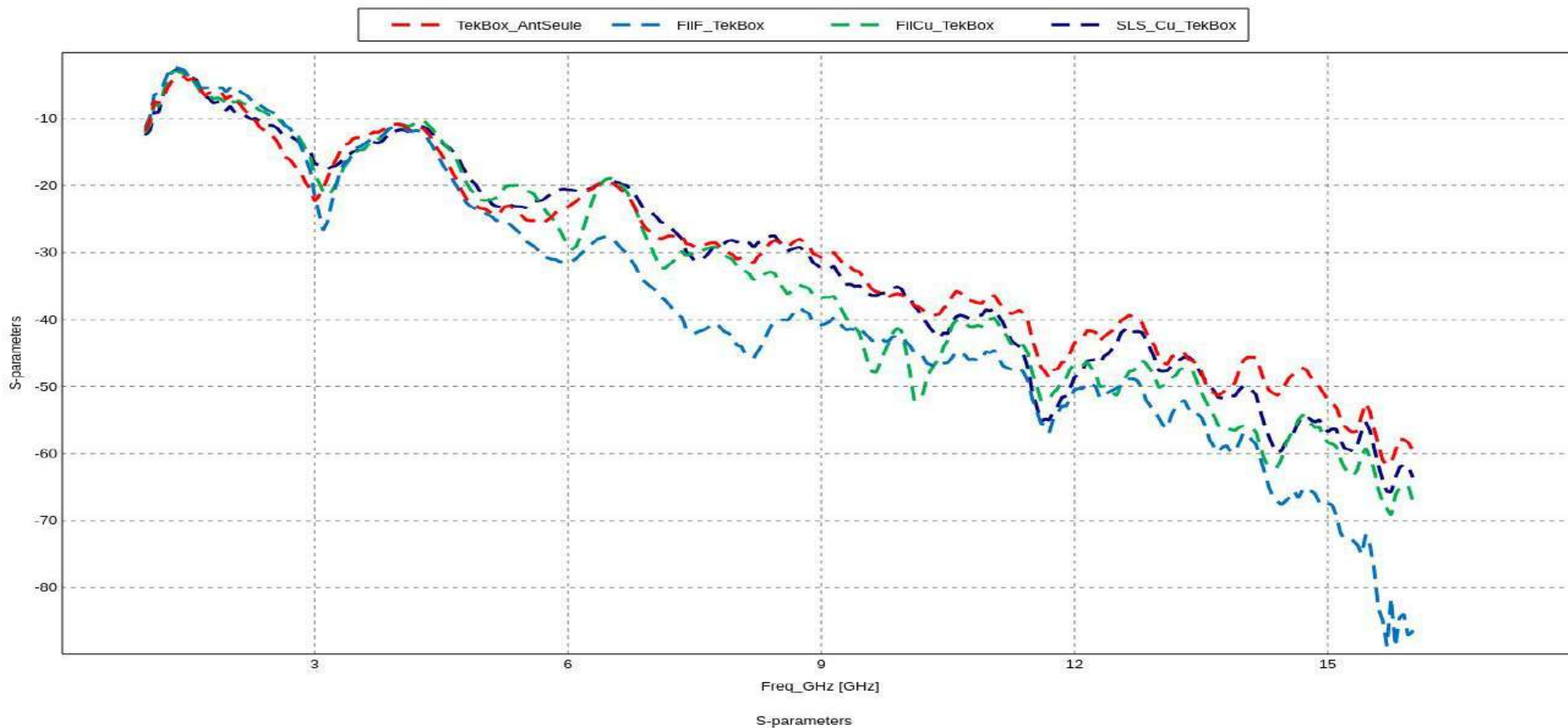
Différence boîtes pleine



Différence Nid d'abeille



Comparaison Nid d'abeille



- Atténuation de 5 à plus de 20dB
- L'épaisseur améliore la performance
- formes géométriques → résonance
- Prototypage rapide
 - accès au poudres pour fabrication série
- Application
Prototype blindage, annulation résonance cavité, séparation antennes...

A disposition pour discuter de vos besoins.