TECHNOLOGY PARTNERSHIP PROGRAM (NN-TPP)

INCREASE YOUR LIST OF VIRTUAL ANTENNA™ PRODUCT SUPPLIERS

16TH of APRIL, 2020
Outline

Get Virtual Antenna™ from your current supplier
- Why joining a Technology Partnership Program?
- About Virtual Antenna™

NN’s Technology Partnership Program
- NN-TPP, a flexible model to fit your business
- Program Features
- Program Benefits

Virtual Antenna™ in IoT
- Cellular IoT made simpler: Thingy & mangOH
- Virtual Antenna™ applications & markets
- About FRACTUS ANTENNAS
Get Virtual Antenna™ from your current supplier

- Do you want to reduce the design time & manufacturing cost of your newest IoT/cellular wireless products by using the latest multipurpose, off-the-shelf chip antenna technology?

- Do you want to enhance the flexibility and reliability of your supply chain by getting the same antenna part from multiple sources?

- Do you want to make sure you get access to the latest antenna innovation with the best local technical support and price conditions?

Ask your current antenna supplier to join FRACTUS ANTENNAS’ TECHNOLOGY PARTNERSHIP PROGRAM and start being sourced today with the latest VIRTUAL ANTENNA™ PRODUCTS.
About Virtual Antenna™

Virtual Antenna™: the latest generation of miniature, multiband, multipurpose chip antenna components for sub 6 GHz cellular/IoT

A game changing technology

- **Off-the-shelf**
  Ready to be delivered 'as is' with no need for customization.

- **Up to 10 times smaller**
  A booster can be 5mm² providing the same connectivity.

- **Versatility**
  A phone can be designed with several architectures yet still using the same component.

- **Scalability**
  The 'heart' of the design can be reused across multiple device models.

- **Modular**
  Modules or standard building blocks can be reused in the design of multiple devices.

- **Multiband**
  A single antenna provides connectivity in 2G, 3G and 4G band.

- **Full performance**
  The same performance in a much smaller, off-the-shelf and versatile component.

- **Pick & place**
  No manual assembly is needed, only a conventional SMT machine.
About Virtual Antenna™

Use the same antenna in every device, regardless of the form factor. Change platform by just changing the matching network.

One antenna
Any band
Any device

Use the same antenna for every frequency band, even for multiple of them all together (multiband design). Change protocol and frequency by just changing the matching network.
NN TECHNOLOGY PARTNERSHIP PROGRAM

NN-TPP is FLEXIBLE: Your current antenna partner might become an official Virtual Antenna™ supplier by choosing the NN TPP program that better fits his and your needs.

RESELLER PROGRAM

BRANDING PROGRAM

LICENSING PROGRAM

... or start with RESELLER and move on according to your business evolution...
## NN TPP Features for Antenna Manufacturers

### RESELLER PROGRAM
- Get access to the full range of FRACTUS ANTENNAS (NN) off-the-shelf chip antenna products.
- Agree on a list of customers to supply. List can be expanded according to your business evolution.
- Purchase NN’s products and resell them in the most favourable conditions.
- Use NN Wireless Fast-Track service to speed-up your project offering. Get a design in 24h, free of charge.
- Get your R&D team trained by NN on the new technology to effectively provide a solution to your clients.

### BRANDING PROGRAM
- Supply your full range of NN’s products customized with your own TRADEMARK AND LOGO.
- Identify your products with the original ‘by NN’ technology brand to discourage and detect unfair counterfeits (copy).
- Purchase branded products to NN in the most favourable conditions. Sell to any client worldwide.
- Get access to all technical info, marketing materials. Get your R&D and sales teams trained by NN.
- Use NN Wireless Fast-Track service to speed-up your project offering. Get a design in 24h, free of charge.
- Join the program by investing in a refundable access fee (1 payment) and maintenance fee (yearly).

### LICENSING PROGRAM
- Supply your full range of NN’s products customized with your own TRADEMARK AND LOGO.
- Identify your products with the original ‘by NN’ technology brand to discourage and detect unfair counterfeits.
- Manufacture your own branded products and sell to any client worldwide through a flexible royalty (FRAND price list).
- Design-in project/customer acquisition protection program included.
- Get access to all technical info, marketing materials. Get your R&D and sales teams trained by NN.
- Use NN Wireless Fast-Track service to speed-up your project offering. Get a design in 24h, free of charge.
- Join the program by investing in a refundable access fee (1 payment) and maintenance fee (yearly).
Shorten your **Time-to-Market** and **reduce your manufacturing costs** by embedding a Virtual Antenna™ chip component in your next IoT/cellular wireless product.

- Get Virtual Antenna™ from your preferred antenna supplier.
- Readily implement a *multi source, multi region supply chain* by choosing any local or worldwide supplier of Virtual Antenna products within the NN-TPP program.
- Chose from a variety of antenna suppliers within the NN-TPP to ensure you always get the **best technical support** and the **best business conditions**.
- Benefit from the **open and transparent non-discriminatory** conditions to all NN-TPP participants.
Outline

Becoming a Virtual Antenna™ supplier
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Virtual Antenna™ in the market:

Already introduced in the market the following products and applications:
- fleet management
- smart tracking
- smart metering
- headsets
- smart home
- smart cities
- alarms
- IoT/Mobile modules
- medical devices
- IoT sensors

- Thingy91 by Nordic Semi
- TRIO mXTEND by NN
- Cellular IoT module
- Mobile + GPS in a single antenna component.

- mangOH Yellow by Sierra Wireless
- RUN mXTEND by NN
- Global Cellular IoT in a small package (<CR80)
Virtual Antenna™ in the media:
One antenna. Any band. Any device.

- FRACTUS ANTENNAS (NN) is a leading antenna technology supplier for the IoT and Mobile wireless industries.
- Leading mobile/wireless OEMs worldwide have licensed antenna technology created by our team.
- Virtual Antenna™ is the proprietary trademark for the patented ‘antenna-less’ chip antenna technology by NN™.
- Virtual Antenna™ is aiming to become the embedded antenna standard for sub 6 GHz IoT and Mobile/Cellular: One Antenna fits Any Band and Any Device
- Virtual Antenna™ is available to antenna manufacturer through NN’s flexible Technology Partnership Program
Want to join the Virtual Antenna™ revolution?

Josep Portabella, CEO

Join the FRACTUS ANTENNAS’ TECHNOLOGY PARTNERSHIP PROGRAM (NN-TPP)

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