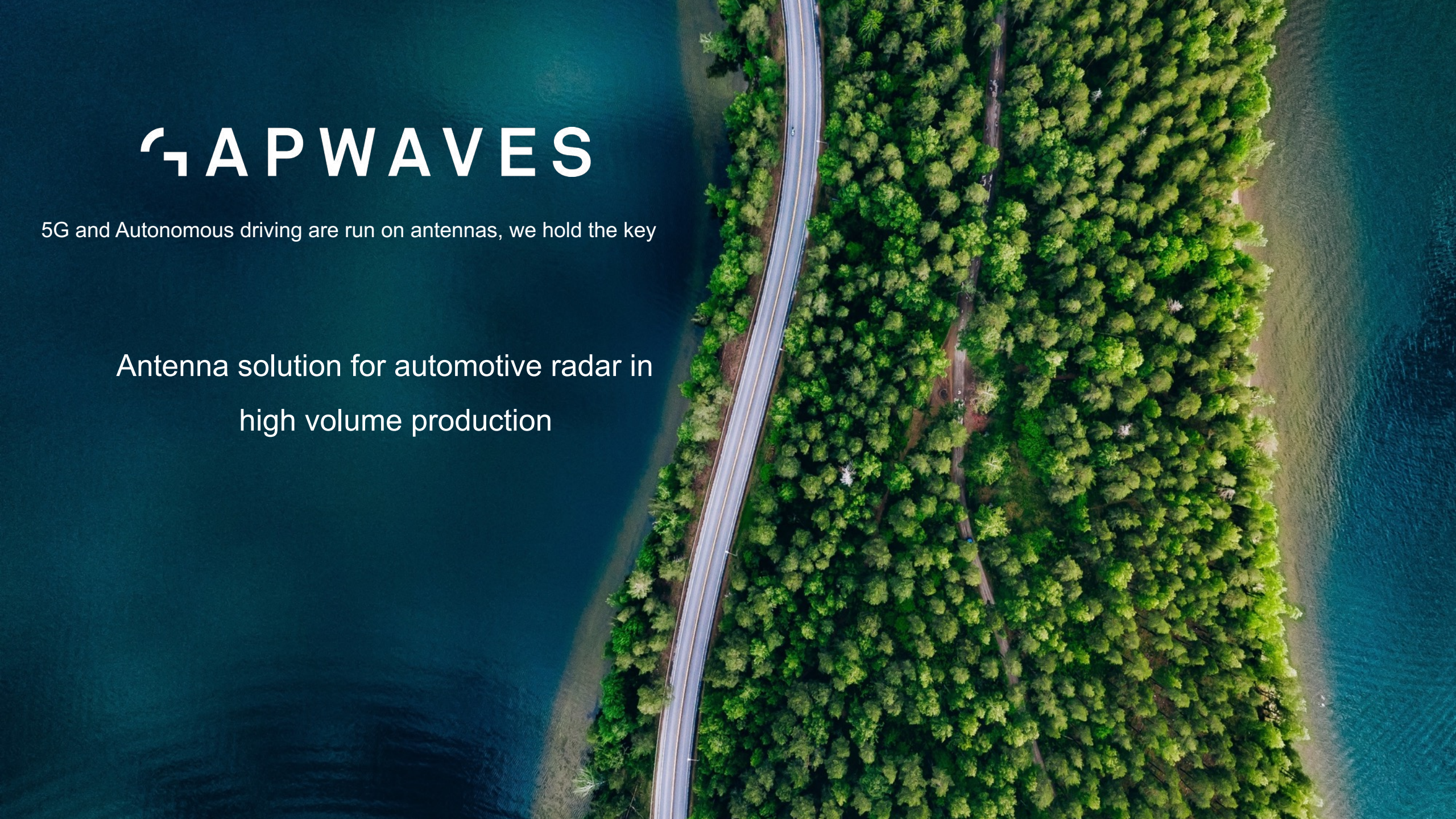
GAPWAVES

5G and Autonomous driving are run on antennas, we hold the key

Antenna solution for automotive radar in high volume production



Waveguide antennas are essential for tomorrows 77 & 79 GHz automotive radars

- ✓ Broader view
- ✓ Reduced size
- ✓ Higher resolution

Compact, efficient, high gain antennas for automotive radar solutions

Customer first

- ✓ Dedicated team for each customer project
- ✓ Well experienced in antenna design, project- & production management
- ✓ Customer involved from design start to volume production
- ✓ ISO 9000
- ✓ ISO 14001

Unique technology

- ✓ Patented waveguide technology
- ✓ Robust design for easy integration in radar
- ✓ Custom made design; corner radar to high resolution radar, 76-81GHz
- ✓ Reduced cost compared to excisting technologies

High volume production

- ✓ Rapid prototyping
- ✓ Inhouse production up to 150k/year
- ✓ IATF worldwide partners for massproduction
- ✓ Established volume production processes with high quality inspection

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Unique design applicable for all radar types

Enabling NCAP 5-star vehicles and next generation automated driving functions

Corner radar (76-81 GHz)

- Wide field of view
- Compact formfactor
- Included robust transition to PCB
- Reduces overall radar cost

Front radar (76-81 GHz)

- High gain
- Compact formfactor (40x50x4mm)
- Included robust transition to PCB

High resolution radar (76-81 GHz)

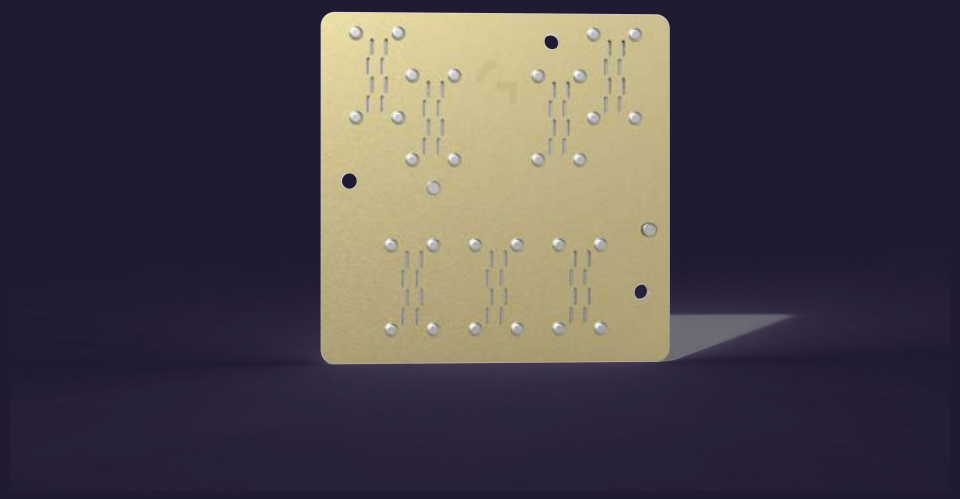
- Low losses
- Complex routing made simple
- Included robust transition to PCB

Custom made antennas based on your specification - Typical Front radar design

Front radar antenna (76-81 GHz)

Gain	15 dB
Azimuth beamwidth	60 degree (HPBW)
Elevation beamwidth	20 degree (HPBW)
Compact formfactor	40x50x4mm

Included robust transition to PCB (FR4)



Gapwaves high gain antenna enable a radar supporting NCAP applications as forward collision warning. The compact formfactor is a key for easy integration all over the vehicle platform.

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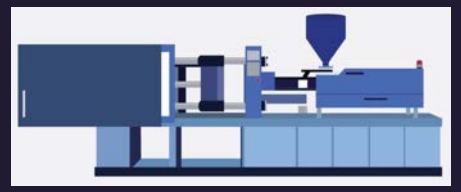
Gapwaves antenna production cell

- Cover the complete value chain
- Using only existing volume production processes
- All processes run within standard process window
- Custom material suitable and sustainable for high volume

Injection moulding



Metallization

Ultrasonic welding

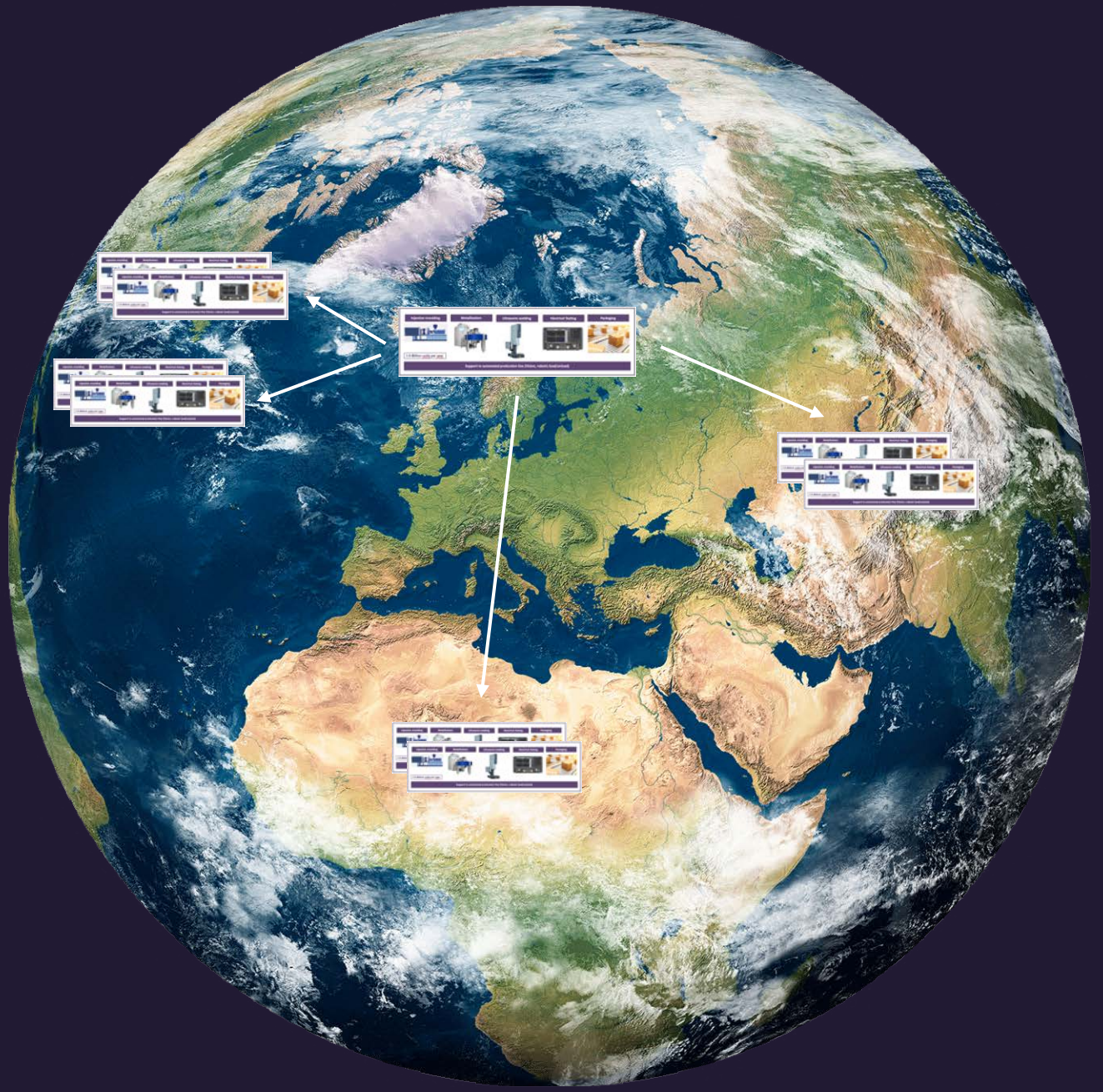
Electrical Testing

Packaging

Support to automated production line (Vision, robotic load/unload)

Scaling production

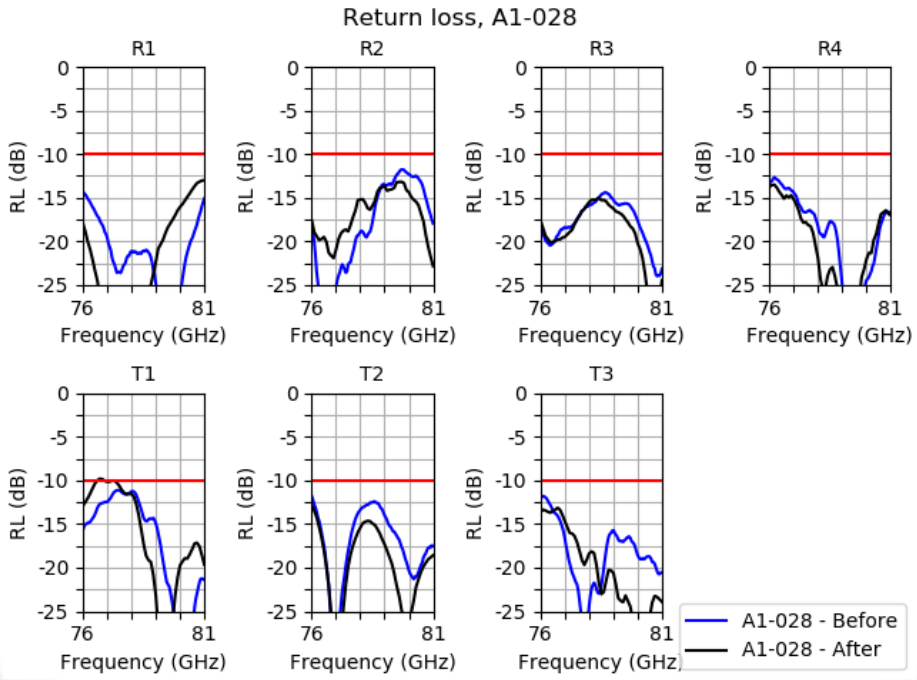
- We scale for you
- You scale yourself



Product qualification – Environmental test

Test conducted according to IEC60068-2 specifications

Temperature cycling	-40°C to +125°C
Rapid temp. change	-40°C to +125°C
Damp heat constant	+85°C, 85% humidity
Vibration	IEC60068-2- 64
Mechanical shock	IEC60068-2-27



Want to know more?

Whether you are looking for an antenna for your short, mid, long-range radar or your imaging radar we are your dedicated development partner offering our know-how, technology and patents to develop customer specific antennas fulfilling your requirements.

In other words: there is no use case we can’t support and we would love to be your development partner.

Contact us and we tell you more;

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www.gapwaves.com