



INVESTOR CONFERENCE

MOBILE COMMUNICATIONS

March 2022



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This document contains summary information and should be read in conjunction with the 2020-2021 Universal Registration Document, which was filed on July 5, 2021 with the French stock market authority (Autorité des Marchés Financiers, or AMF) under number D.21 0681. The French version of the 2020-2021 Universal Registration Document and an English courtesy translation for information purposes are both available for consultation on the Company’s website (www.soitec.com).

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The Company’s shares have not been and will not be registered under the Securities Act. Neither the Company nor any other person intends to conduct a public offering of the Company’s securities in the United States.

AGENDA

#01 SOITEC AT A GLANCE

#02 MEGATRENDS FOR MOBILE COMMUNICATIONS

#03 PRODUCT PORTFOLIO

01

SOITEC AT A GLANCE

SOITEC DESIGNS SEMICONDUCTOR MATERIALS TO MAKE THE WORLD



MORE
CONNECTED



MORE
**ENERGY
EFFICIENT**



MORE
INTELLIGENT

FOCUSING ON 3 STRATEGIC MARKETS TO EXPAND OUR PRODUCT PORTFOLIO

MOBILE COMMUNICATIONS



MAIN DRIVERS

- 5G mmW
- 5G sub-6 GHz
- Mobile infrastructure
- Wi-Fi 6

SOITEC PRODUCTS

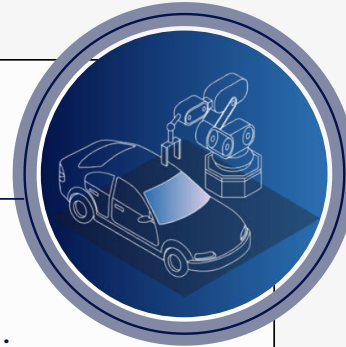
RF-SOI

FD-SOI

POI

GaN

AUTOMOTIVE & INDUSTRIAL



MAIN DRIVERS

- Autonomous cars
- Vehicle electrification
- Infotainment
- Industry 4.0

SOITEC PRODUCTS

Power-SOI

FD-SOI

SiC

GaN

SMART DEVICES



MAIN DRIVERS

- Edge computing
- 3D sensing & Healthcare
- Smart home & Smart cities
- Data centers

SOITEC PRODUCTS

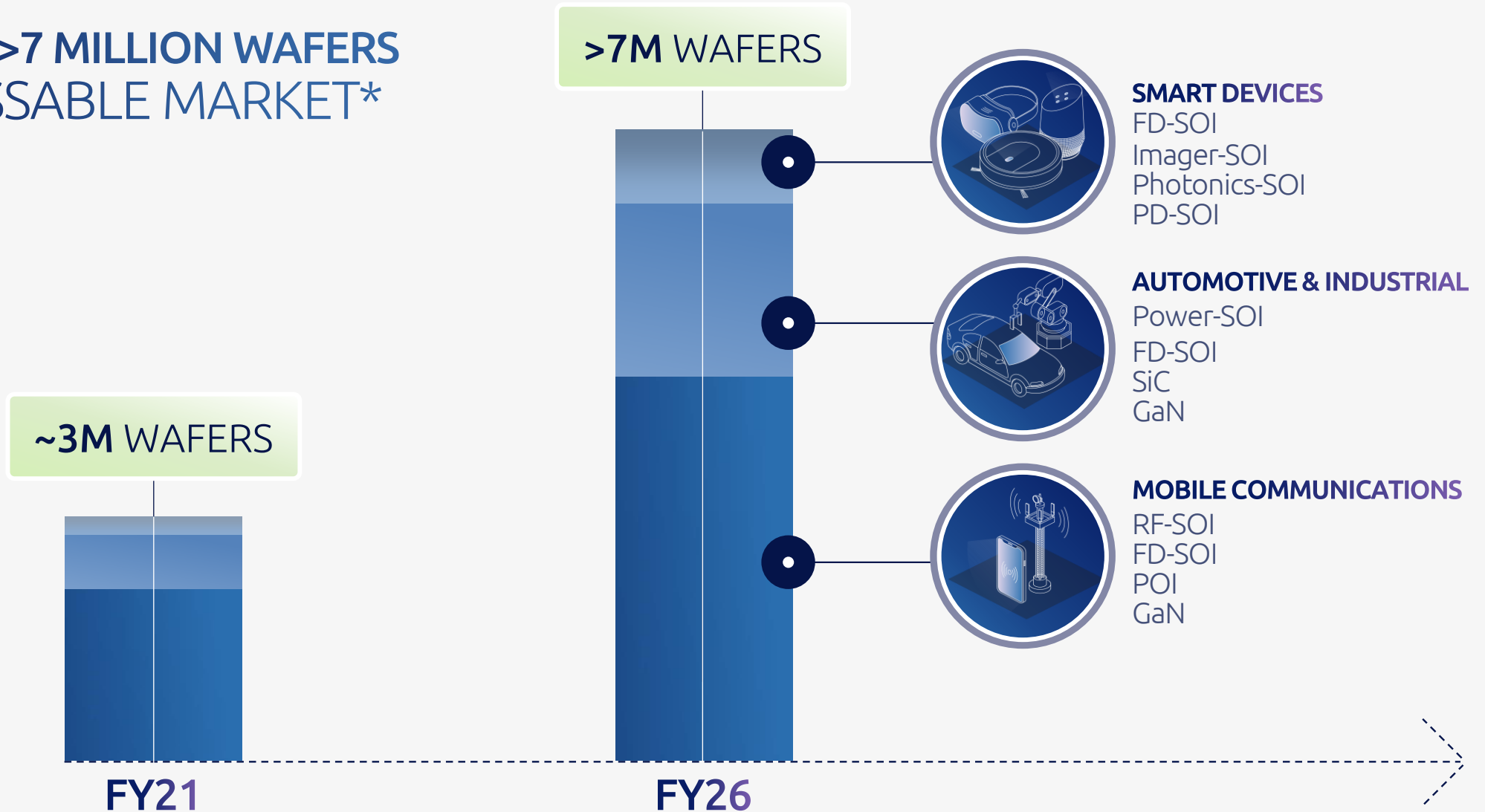
FD-SOI

Imager-SOI

Photonics-SOI

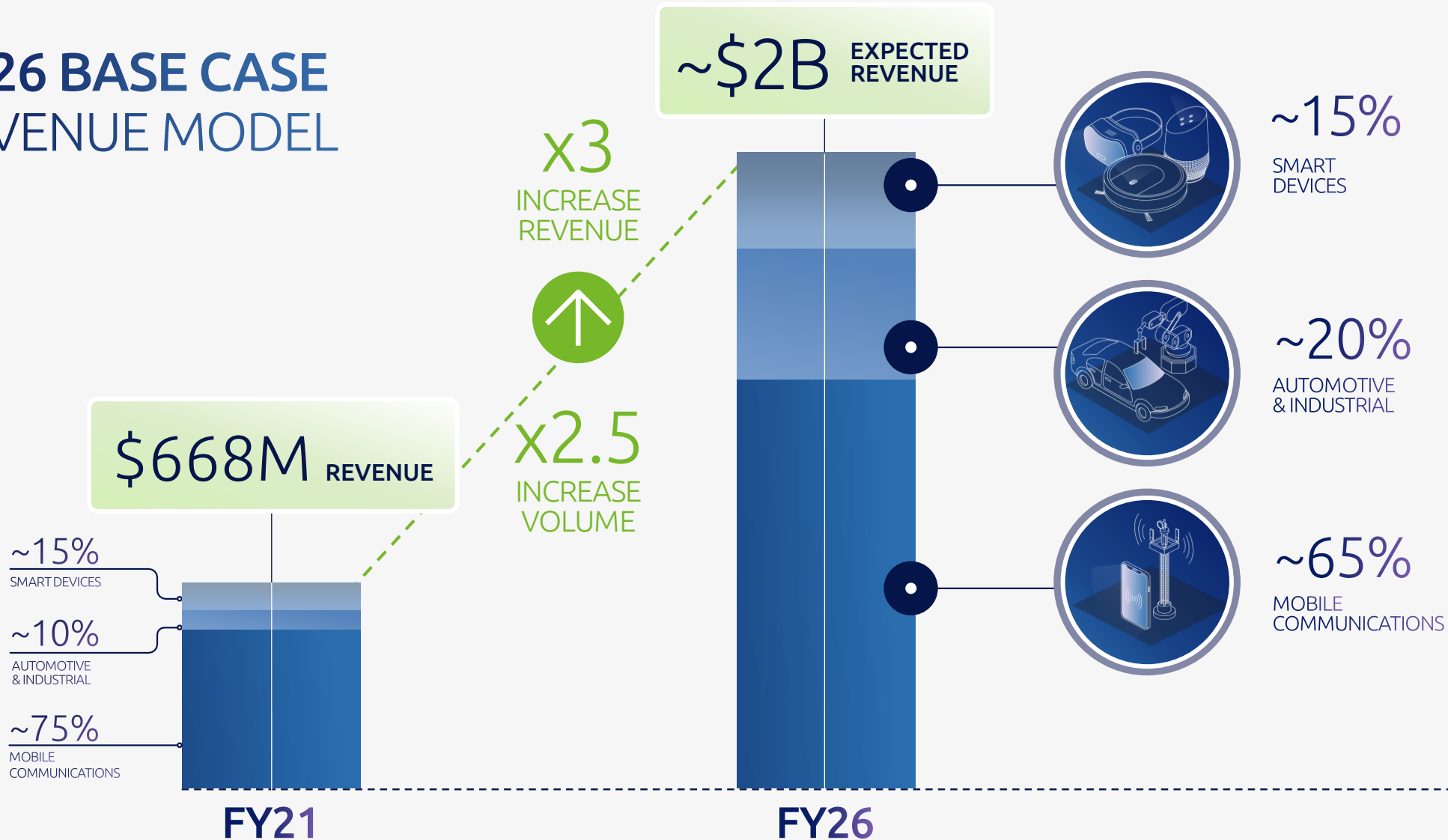
PD-SOI

SERVING >7 MILLION WAFERS ADDRESSABLE MARKET* BY FY26



*Engineered substrates market opportunity

FY26 BASE CASE REVENUE MODEL



DELIVERING ON OUR ESG COMMITMENTS

SHARING VALUE CREATION WITH ALL STAKEHOLDERS

Our corporate purpose voted in July 2021 perpetuates our engagements towards sustainability and all our stakeholders

Soitec is taking action for the
United Nations Sustainable Development Goals



GROUP PRIORITIES



GROWTH

Expand and protect the core business



PROFITABILITY

Protect into adjacent markets



PEOPLE

Adjust the operating model



SUSTAINABILITY

Support our value creation strategy

02 MEGATRENDS FOR MOBILE COMMUNICATIONS

5G – THE NEW ENGINE BEHIND OUR CONNECTED SOCIETY



Public networks

Enhanced Mobile communications



XR (VR/AR/MR)

Remote working and training, virtual fitting, entertainment



Smart transportation

Connected, safer and autonomous vehicles



Fixed wireless access (FWA)

Ultra high-speed connection in areas with no access to fiber



Industry 4.0

Factories, warehouses, predictive maintenance



Massive IoT

Wearables, transports, smart sensors



Private 5G networks

Tailored 5G connection for enterprise individual safer networks

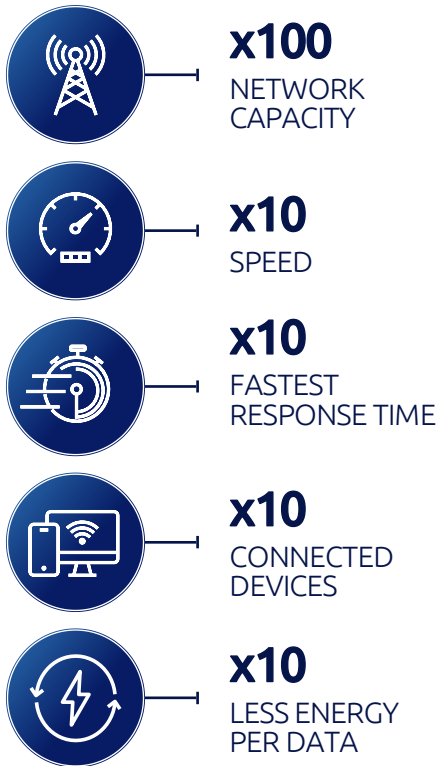


Non-terrestrial networks (NTN)

Interoperable and standardized wireless experience worldwide

5G IS TRANSFORMING THE WORLD

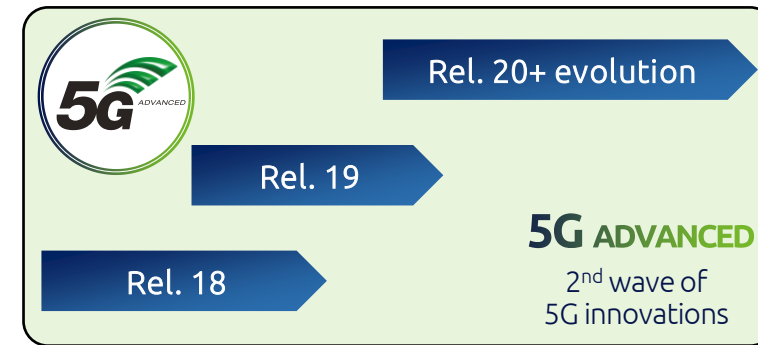
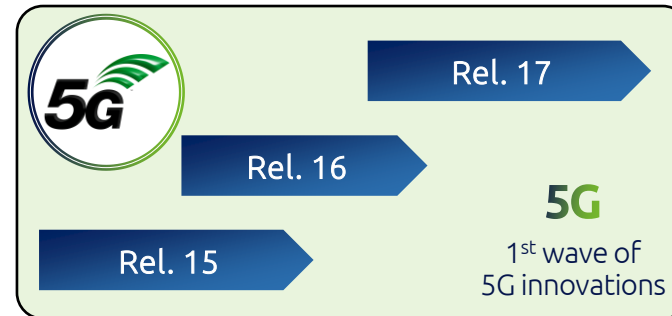
5G PERFORMANCE VS. 4G



MOVING TO AN ALL CONNECTED 5G WORLD

5G roadmap extends for 10+ years

Driving innovation to enhance smartphones and transform other industries



Continued innovation for new vertical deployments, use cases, and spectrums



Sources: IMT-2020, Qualcomm, Orange

5G - THE X FACTOR



x20

MOBILE DATA
TRAFFIC 2020-2030



x2
ANTENNAS

x2
MAX
FREQUENCY

x2
BANDWIDTH

x4
FREQUENCY
COMBINATION

Sub-6GHz



NEW

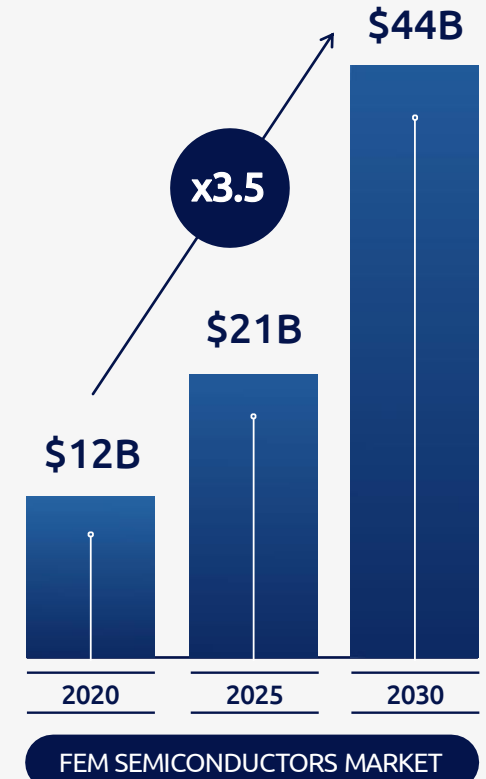
28, 39, ...GHz

mmW

x2
LNA - Switch - Tuner
**Continuous
improvement**

x1.2
Filters
**Need for
integration**

NEW
Active Antenna
in Package
**Need for
disruptions**



Sources: Soitec estimates, Qualcomm 2021, Ericsson Mobility Report 2021, Yole 2021.
Note: Soitec estimates, x factors are on average 5G vs 4G phones, Yole.

5G mmWave – EXPANDING 5G BOUNDARIES

25x MORE BANDWIDTH THAN 4G



HIGH DATA RATES AND LOW LATENCY FOR NEW USE CASES

Crowded area capacity



Last mile fiber complement

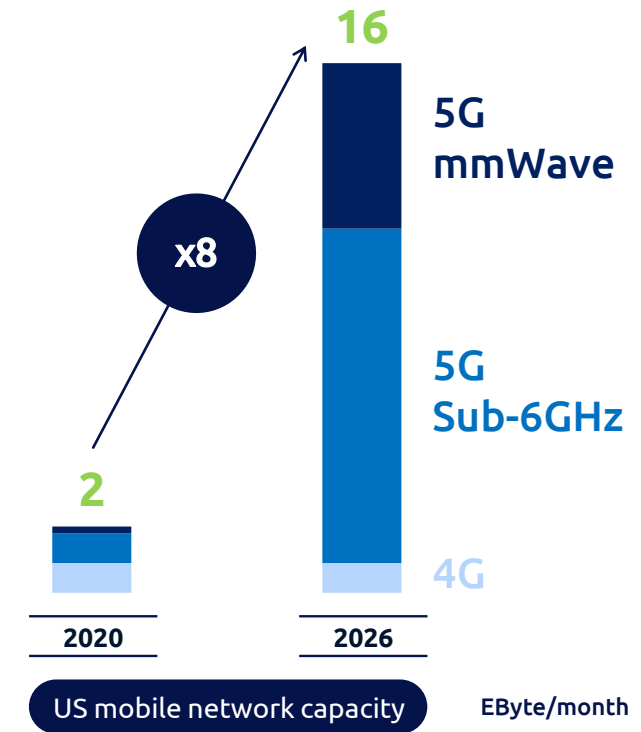
AR/VR everywhere



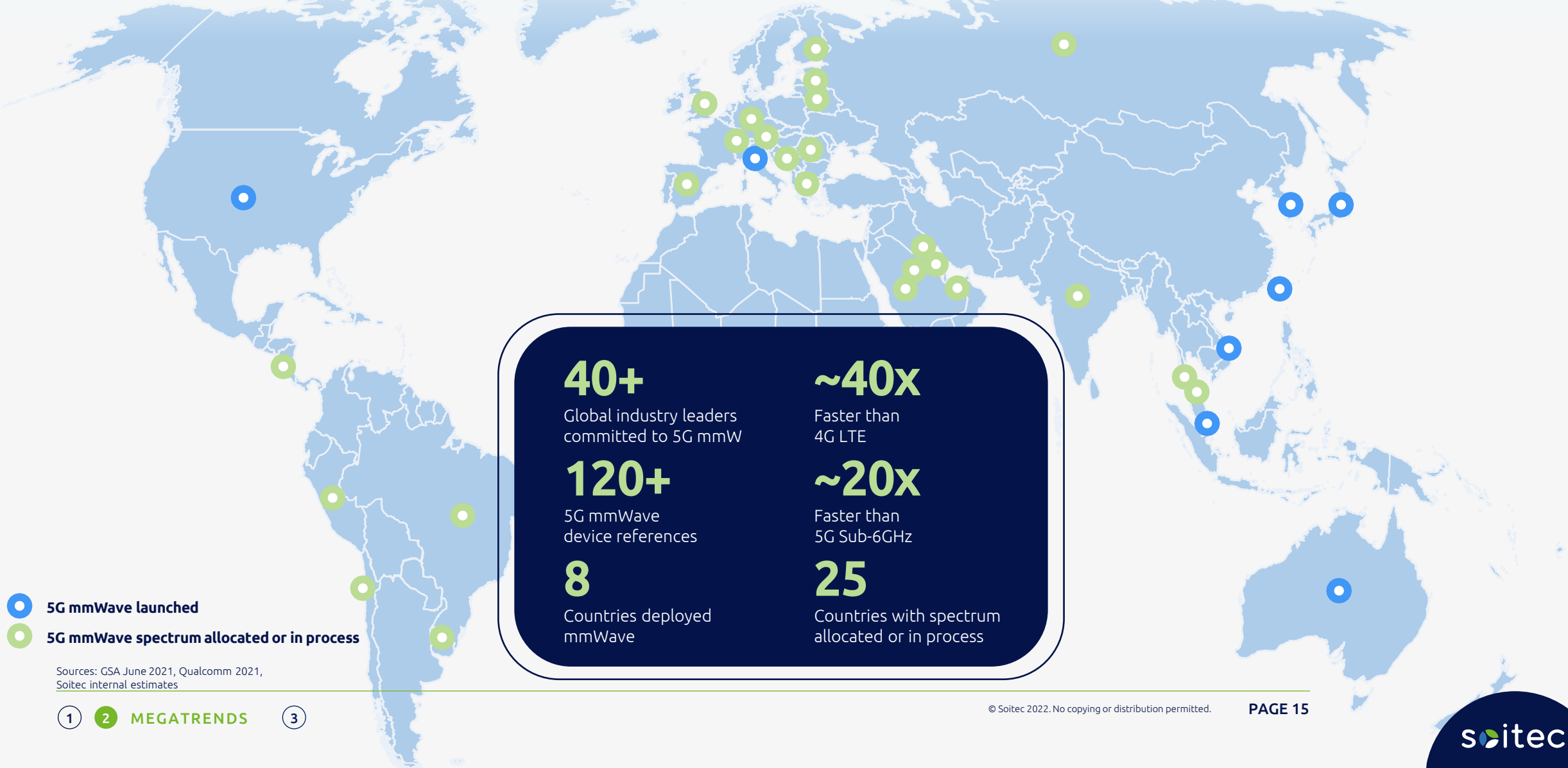
5G smart factory

Source: Mobile Experts

5G mmWave REQUIRED TO ADDRESS GROWING DATA TRAFFIC



5G mmWave GLOBAL DEPLOYMENT IS SHAPING UP



Sources: GSA June 2021, Qualcomm 2021, Soitec internal estimates

GLOBAL SMARTPHONES SALES OUTLOOK

5G ADOPTION IS ACCELERATING

● Total Smartphones (M units)
● 5G Smartphones (M units)



Source: Soitec estimates

5G FOR MOBILITY – ENHANCED CAR CONNECTIVITY



TELEMATICS

Vehicle connectivity to the cloud

- Sensing, positioning
- Data storage, processing and transfer
- NAD (network access device) to secure reliable and robust cellular network communication



INFOTAINMENT

Center console for driver and passenger

- 5G connected NAD: access new broadband frequency channels, with high data rates and low latency
- Access to applications such as high-definition audio and video, internet browsing



VEHICLE-TO-EVERYTHING

Connecting cars with their surroundings

- V2V: vehicle-to-vehicle for collision avoidance
- V2I: vehicle-to-infrastructure for dynamic traffic control signaling
- V2P: vehicle-to-pedestrian for providing warning signals

Wi-Fi 6 AND 7 – THE NEW PARADIGM FOR WIRELESS CONNECTIVITY

Wi-Fi 6 & 6E VS. Wi-Fi 5



x3
FASTER
PERFORMANCE



+75%
FASTER
RESPONSE TIME



x4
CONNECTED
DEVICE



EXTENDED
BATTERY LIFE

MOVING TO NEW USER EXPERIENCES

Wi-Fi 6, 6E and 7 pave the way for new wireless connectivity

Driving innovation to enhance wireless connectivity for new experiences and extended range



Extremely High Throughput,
low latency and/or high reliability
for demanding applications
from VR/AR to industrial IoT



Adding **1GHz spectrum in the 6GHz band**
for higher quality of service (QoS) and secured connectivity



High-speed connectivity technology in 2.4GHz and 5GHz bands for smartphone, laptop, home, consolidating its place in smart home, wearables and automotive

2019

2020

2021

2022

2023

2024

2025

2026

2027+

Source: Intel, 2021

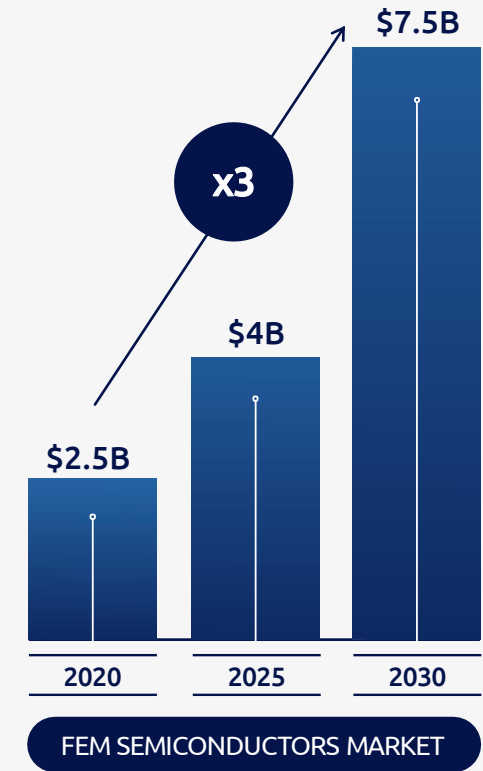
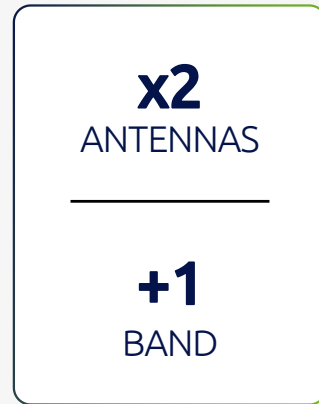
Wi-Fi 6E & 7

Further content opportunity



~45% CAGR

Wi-Fi 6E devices
(2020-2026)



Sources: Soitec estimates, Qualcomm 2021, Ericsson Mobility Report 2021, Yole 2021.
Note: Soitec estimates, x factors are on average 5G vs 4G phones, Yole.

03

PRODUCT PORTFOLIO

SOITEC PRODUCTS PORTFOLIO

MOBILE COMMUNICATIONS

APPLICATIONS

- Smartphones radio-frequency front-end modules
- Networking base stations



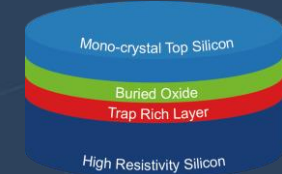
SOITEC PRODUCTS ENABLE

- 4G
- 5G
- Wi-Fi 6 connectivity



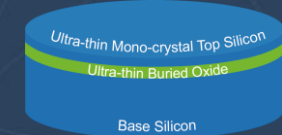
RF-SOI

For highly efficient mobile communications



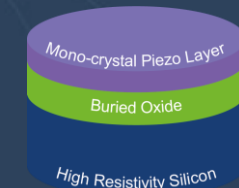
FD-SOI

Integrated technology



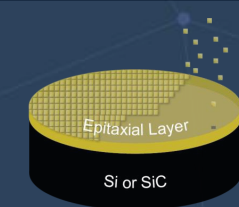
POI

High performance 5G filters



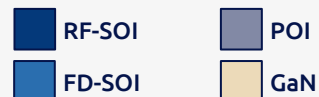
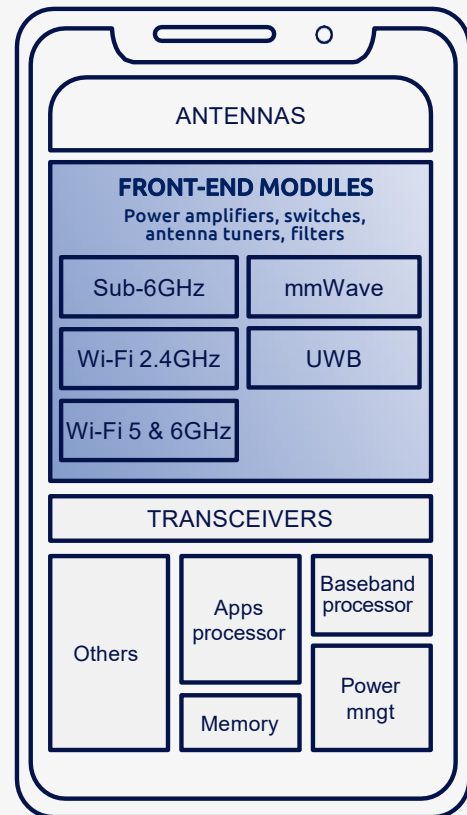
GaN

High performance power amplifiers



SOITEC PRODUCTS ENABLE BEST-IN-CLASS CONNECTIVITY

A COMPREHENSIVE OFFER FOR Sub-6 GHz AND mmWave FRONT-END MODULES



	4G & 5G Sub-6GHz	5G mmW	Wi-Fi & UWB
POWER AMPLIFIER			
LOW NOISE AMPLIFIER			
SWITCH			
ANTENNA TUNER			
FILTER			
ENVELOPE TRACKER			
SYSTEM ON CHIP			
INTEGRATED FRONT-END			

ENGINEERED SUBSTRATES FOR Sub-6GHz

Soitec offers best-in-class RF Front End technologies:

- **RF-SOI** embedded in 100% of 5G smartphones
- **POI** for high performance 5G filters
- **GaN** for extended 5G sub-6GHz ultra high band
- **FD-SOI** for 5G broadband envelope tracker

ENGINEERED SUBSTRATES FOR 5G mmW ADOPTION

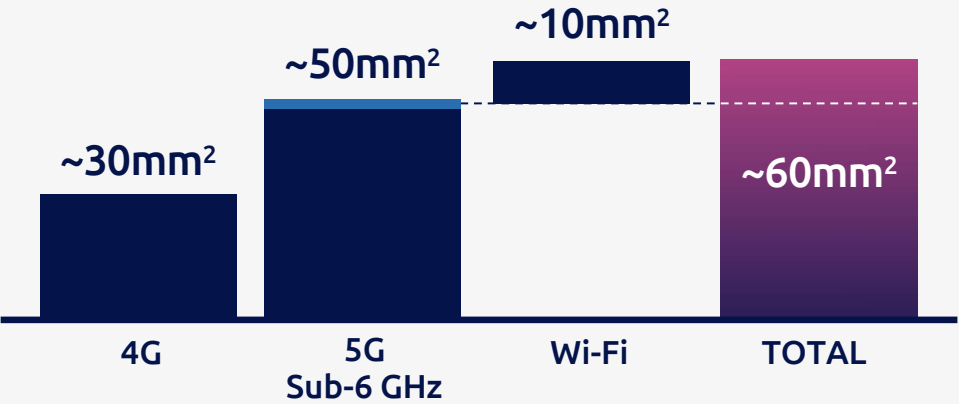
Soitec offers a complete engineered substrate portfolio to support multiple 5G mmW RF Front End architectures:

- Hybrid RF Front End combining **GaN** power amplifier best-in-class efficiency and with **RF-SOI** LNA and switches
- Monolithic **RF-SOI** mmW RF Front End with best-in-class performance vs integration trade-off
- Full chip **FD-SOI** mmW SoC with best-in-class power efficient system integration

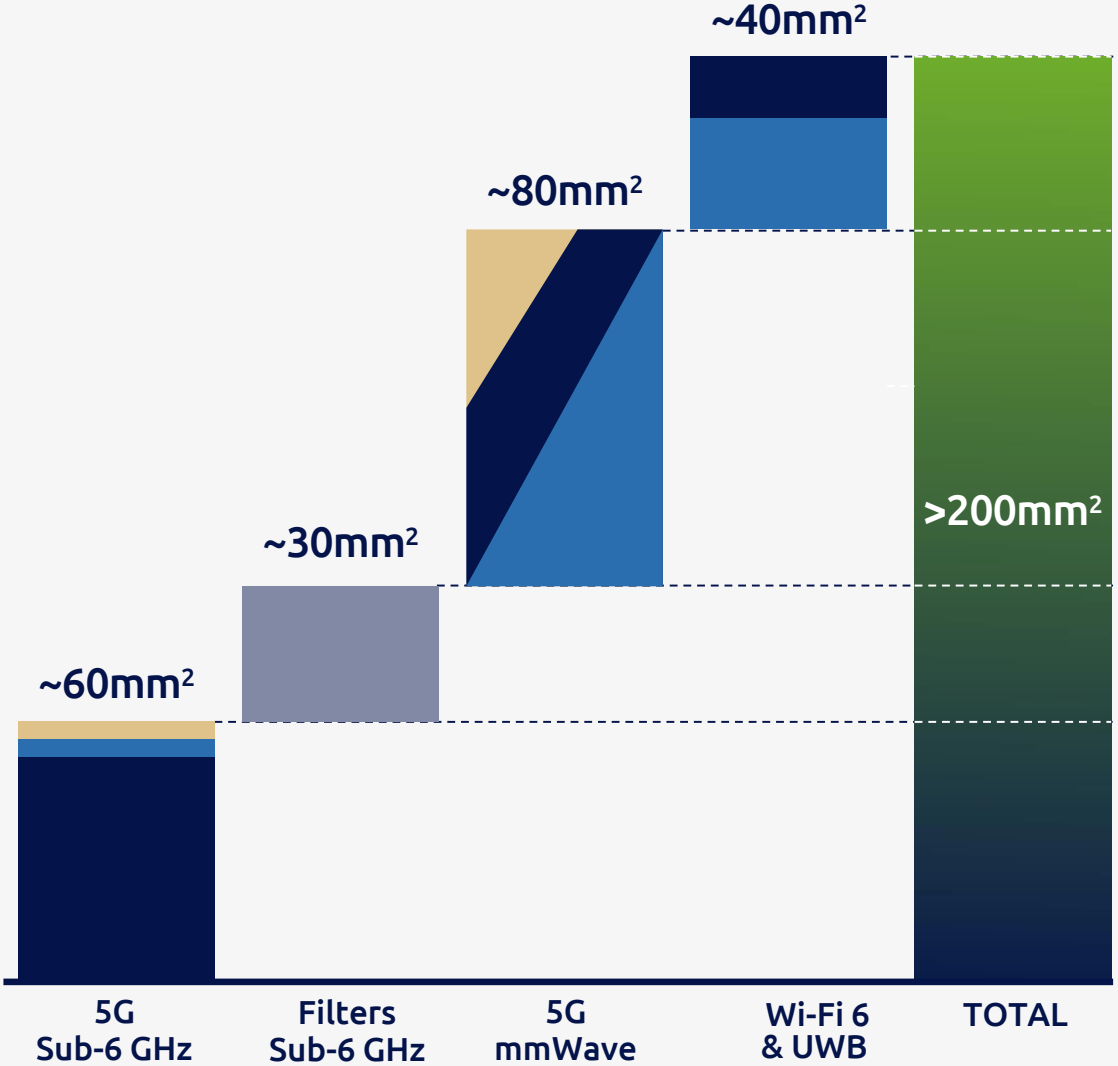
MOBILE CONTENT OPPORTUNITY IN THE NEXT FIVE YEARS IN mm²

High-end smartphones

- RF-SOI
- FD-SOI
- POI
- GaN

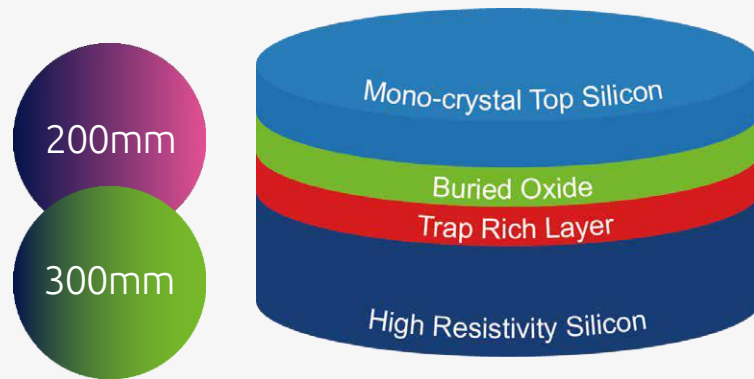


TODAY



WITHIN THE NEXT 5 YEARS

MOBILE COMMUNICATIONS RF-SOI



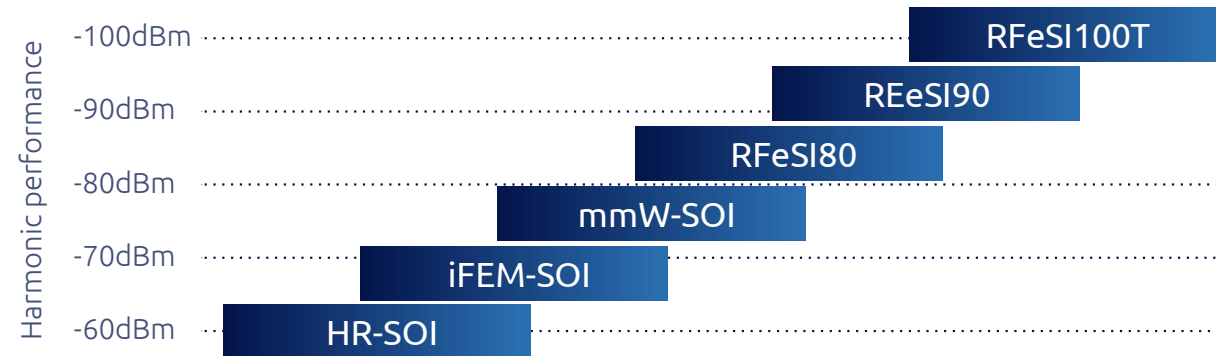
EXISTING AND FUTURE APPLICATIONS

- Standard for 4G and 5G RF Front End
- Wi-Fi 6 / Wi-Fi 6E MU-MIMO
- 5G mmW Front End centric mmW small cells & mobile

VALUE PROPOSITION

- A standard for complex RF signal routing
- 5G Sub-6GHz and mmW integration levels
- Reliable and robust for best antenna performance
- Minimum interference to and from digital and control functions
- Eases mmW and Wi-Fi efficient PA integration

COMPREHENSIVE PRODUCT PORTFOLIO IN 200-300mm



MOBILE COMMUNICATIONS

RF-SOI FOR 5G AND Wi-Fi 6

Enhanced linearity

State-of-the-art
<-90dBm harmonic
distortion thanks to
RFeSITM

RF Signal integrity

Helping 5G and Wi-Fi
digital and RF signal
coexistence with
RFeSITM

Reduced footprint

Best-in-class
performance vs.
integration trade-off

Improved thermal conductivity

New materials
configuration
for RFeSITM

The 5G logo is displayed in a green circle with a white border. The logo itself is black with a green wave-like graphic above the 'G'.

Improved linearity

State-of-the-art
linearity over a large
channel bandwidth

RF signal integrity

Helping 5G and Wi-Fi
digital and RF signal
coexistence with
RFeSITM

Reduced footprint

Best-in-class
performance vs.
integration trade-off

Enhanced power efficiency

SOI transistor stacking
for Power Amplifier

The Wi-Fi 6 logo is displayed in a pink circle with a white border. The logo itself is black with a white '6' in the center of a stylized signal icon.

MOBILE COMMUNICATIONS FD-SOI



EXISTING AND FUTURE APPLICATIONS

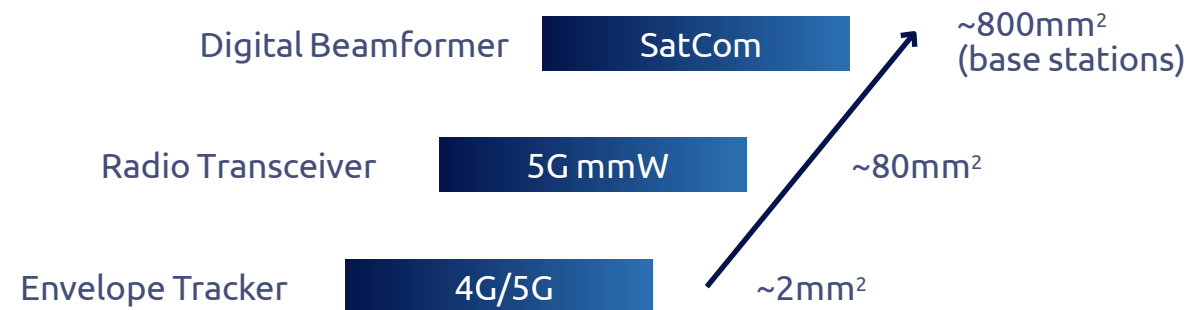
- 5G mmW module
- System on chip (SoC)
- Envelope tracker IC

VALUE PROPOSITION

- Cost efficient integrated radio in 5G mmW
- Energy efficient analog/mixed signal solutions
- Wi-Fi 6 SoC platforms
- Scalable and single chip solution for mmWave and sub-THz design

FD-SOI APPLICATIONS FOR MOBILE APPLICATIONS

Evolution from broadband power management to broadband communications



MOBILE COMMUNICATIONS

FD-SOI FOR 5G mmWave

FIRST 5G SMARTPHONE INTEGRATING FD-SOI BASED mmWave MODULE COMMERCIALISED

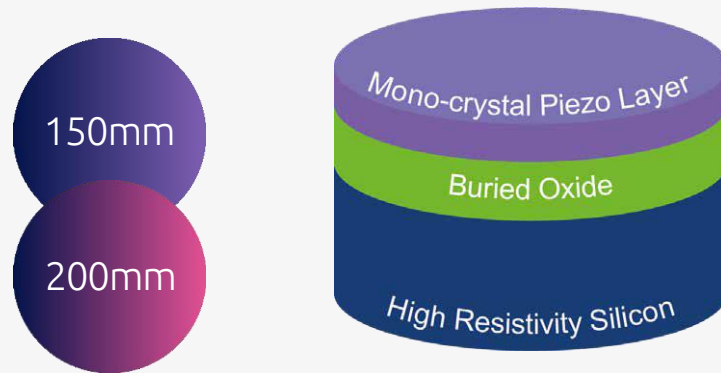
- FD-SOI provides a **fully integrated scheme for 5G mmWave** with higher **energy efficiency**, thereby optimizing **communication quality** while improving **battery life** and reducing **heat dissipation**
- The latest Google Pixel™ 6 Pro 5G smartphone introduced in October 2021 comes with a **5G mmWave FEM that includes a transceiver die integrating Transmit / Receive Path, Signal Input Chain, Voltage-Controlled Oscillator (VCO), MCU and memory** utilizing **FD-SOI substrate**



Google Pixel™ 6 Pro

Sources: Yole, System Plus Consulting, Google

MOBILE COMMUNICATIONS POI



EXISTING AND FUTURE APPLICATIONS

- High performance and/or complex 5G filters

VALUE PROPOSITION

- Superior temperature stability
- Lower insertion loss
- Integration for multiplexers
- Larger bandwidth
- Efficient rejection

APPLICATION IN 5G SMARTPHONE

**POI
Opportunity**

Filters for 5G Smartphones

4G bands

5G low complexity bands

5G high performance bands

Low band

Mid/high band

Ultra high band

MOBILE COMMUNICATIONS

RF GaN



EXISTING AND FUTURE APPLICATIONS

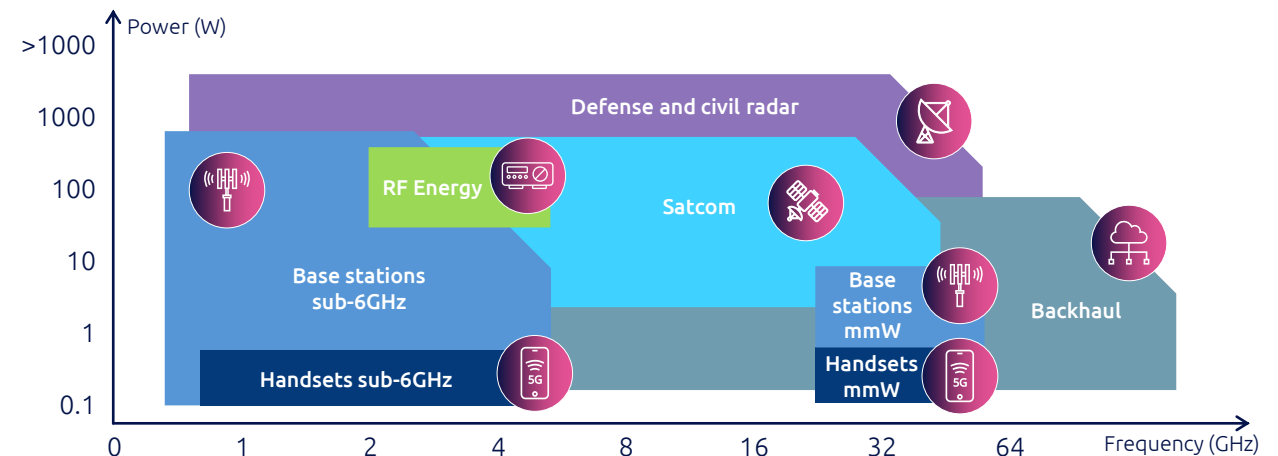
- GaN/SiC is standard for 4G LTE base station power amplifiers
- GaN/Si in R&D for 5G MIMO infrastructure and smartphones
- GaN/SOI to integrate GaN PA / LNA with other Si technologies

Source: Yole

VALUE PROPOSITION

- Superior power amplifier efficiency and power density
- Excellent higher frequency and wide bandwidth performance enabling highest data rates
- Compact size, weight and lowest costs of ownership for 4G/5G infrastructure systems

RF GaN APPLICATION SPACE





INVESTOR CONFERENCE – MOBILE COMMUNICATIONS

THANK YOU

