

SPARCLink Introduction 60 GHz V-Band Transceiver

LETI Innovation Days - July 3rd, 2018

Joël Bielle – RF & mmW marketing



Grenoble Area Ecosystem



Grenoble

- Product development
- Prototype assembly & test
- Marketing

Created in **1973**



Crolles

- Technology R&D
- Manufacturing
- CMOS 200mm – 300mm
- 120nm to 28nm

Created in **1992**

CEA Leti



ST Strengths in RF & mmW

- In-house mmW RF expertise
- Wide range of RF Technologies & IP
- Developing mmW RF solutions for 10+ years

Technologies

- BiCMOS
- RF SOI
- CMOS
- 28-22nm FD-SOI

IP portfolio

- LNA, PA, RF switch
- A/D Converters, SerDes
- Beamformers
- Transceivers

Expertise

- Modeling
- Design & Testing
- Packaging
- Industrialization

mmW RF Solutions

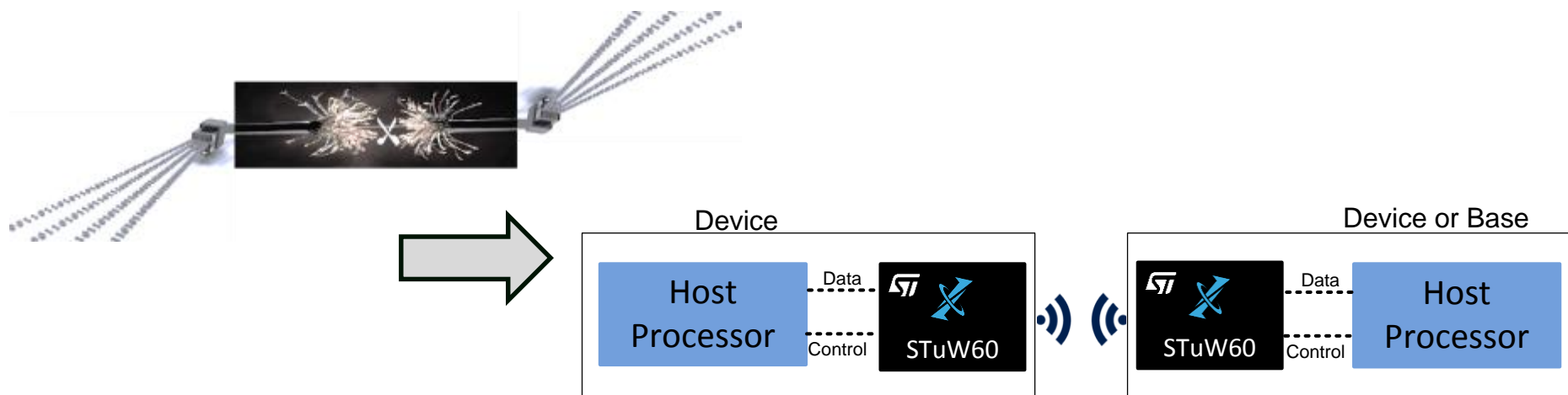
- Transceivers up to 60 GHz
- RF Front-ends
- Ka & Ku-bands SatCom



S.P.A.R.C Link ID Card

Low power, high data rate, short range, point to point wireless link

- 60 GHz V-Band transceiver for short range contactless connectivity
- Compact solution integrating full RF transceiver operating in half-duplex mode
- Low-power ASK modulation scheme supported
- Point-to-point data communication, across two devices and with antennas separated by a physical distance of up to a few centimeters for optimal performance Cable Replacement





S.P.A.R.C Link


Unleashing a wide range of applications



Life Proof
Connector-less Devices



PC 2-in-1
and
Mobile Continuum



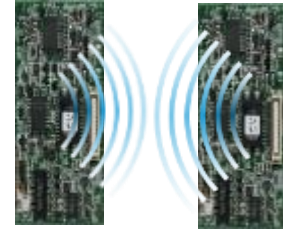
Robust USB type Contactless
Connectors
For Industrial Applications



Smart Connector-less
Docking Stations



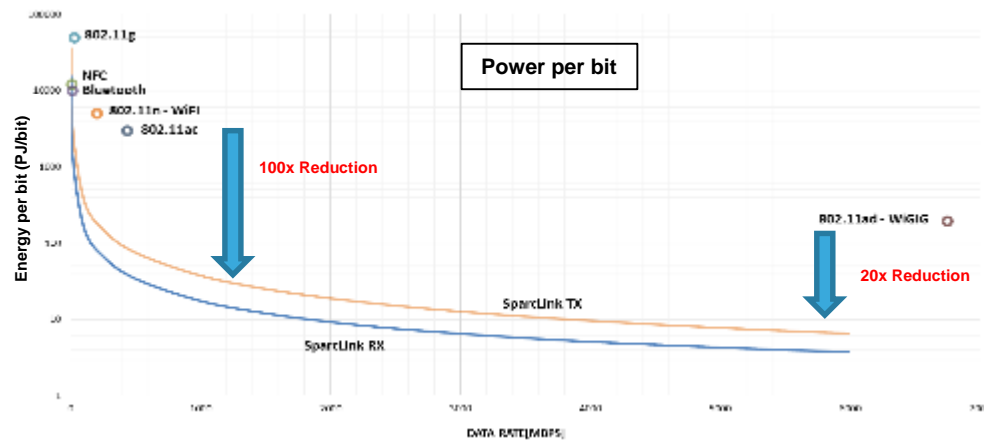
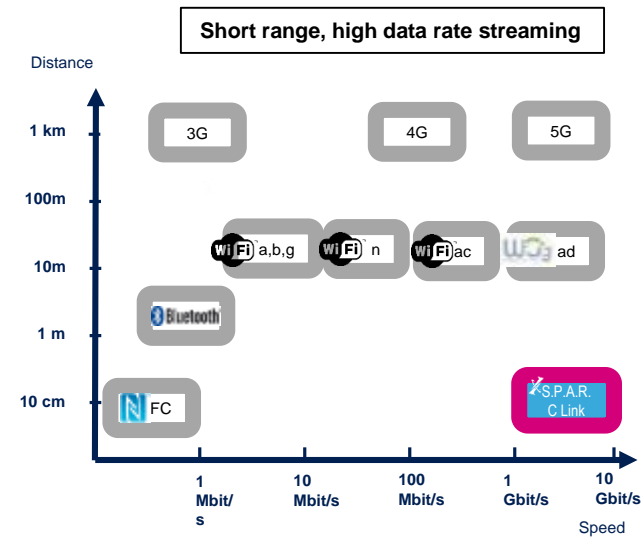
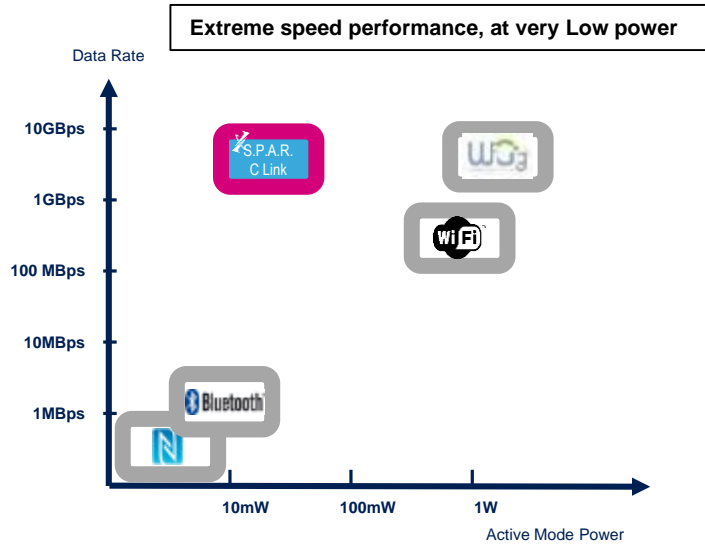
On the go
Device to Device Sync



Board to Board
Connexion

ST Proprietary and Confidential

Wireless Communication Landscape



S.P.A.R.C.Link technology provides the best Industry Power per Bit Ratio



S.P.A.R.C Link ID Card

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• Low power, high data rate, short range, point to point wireless link

- 60 GHz V-Band transceiver for short range contactless connectivity **up to 6 Gb/s**
 - Compact solution integrating full RF transceiver operating in half-duplex mode with ASK modulation
 - SLVS serial IO to host processor supporting 1Mb/s up to 6Gb/s with MIPI m-phy compatibility
 - 60GHz TX/RX single-ended 50Ω RF ports for antenna on PCB
 - Supply voltage : Dual 1.8 V and 1.45 V or single 1.8 V
 - RFIC control through I2C or asynchronous control pin for TX/RX mode
- Very Low power consumption
 - 40 mW in transmit mode, 25 mW in receive mode @ 5Gbps
 - Dedicated RF Wake-UP idle mode with 10 μW average battery consumption
 - 1uW in off mode
- Package: VFBGA 2.2 mm x 2.2 mm x 1.0 mm, 25 balls, F5x5, 0.4 mm pitch



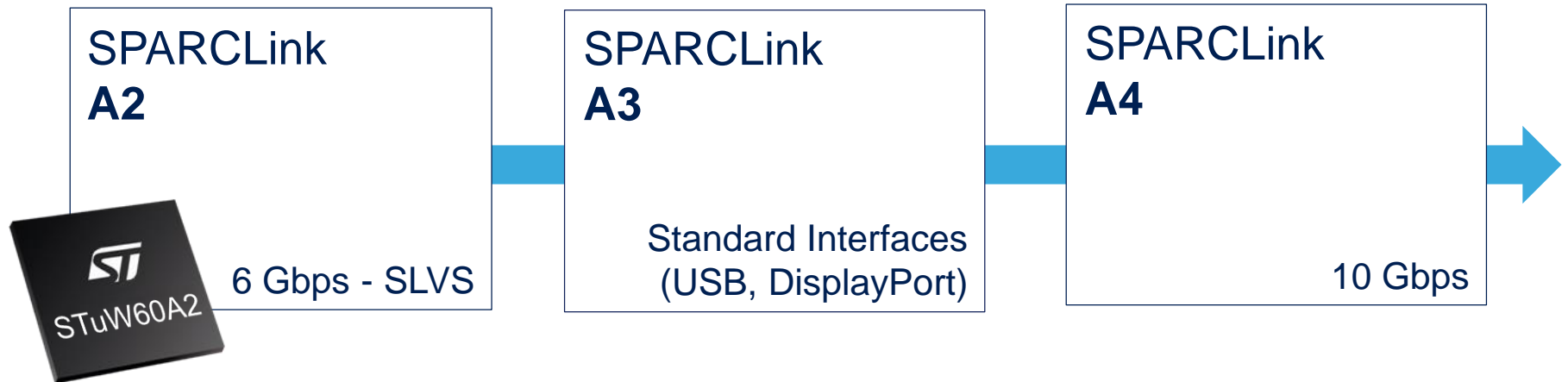


SPARCLink 60 GHz RF Transceiver

RF MmW Short Range Connectivity

High-speed, low-power wireless link for close proximity data transmission

- Instantaneous Data Transfer
- Seamless Docking
- Flex cable replacement



- From 1 Mbps up to **6 Gbps**
- Very low power solution with a power budget of just **40 mW**
- Miniature form factor with **optimized BoM**



life.augmented