5G SUMMIT 2017

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Entering the Connected Era
Inspire creativity to all connected dots

- Enhanced Mobile Broadband
- Ultra Reliable and Low Latency
- Massive M2M Connectivity
Samsung Modem

Strong LTE leadership is the key to 5G success

2009
CMC220

World 1st Commercial LTE
LTE Advanced
(300Mbps)
Carrier Aggregation

2014
Exynos Modem300/303

LTE Advanced
(300Mbps)

2017
Exynos 9

LTE Advanced Pro
(1Gbps)
LTE cat 16, 4x4 MIMO CA

2018
Prototype

5G Trial
Sub-6GHz/mmWave

2019
Exynos 5G

5G New Radio
(5Gbps+)
Ultra high data rate, Low latency
Samsung 5G NR Solution

High data rate and low latency

Global bands for sub-6GHz and mmWave

All legacy RATs (2/3/4G)

Compatibility with 3GPP Rel.15 NR standard

- URLLC: Ultra Reliable and Low Latency
- eMBB: Multi Giga bps data rate
- Hybrid beamforming: fast beam search/tracking
Samsung 5G NR Solution II

Supporting Global Band and Flexible CA
- Interband CA (LTE / Sub-6GHz/28GHz/39GHz)
- Large Number of CCs

Early Launching of Standard Compliant Silicon
- Low Latency in Sub-6GHz
eMBB 5Gbps+
- Hybrid BF Coverage 100+ Meters

Supporting All RATs in Single Modem Chip
- 2/3/4/5G
- Better Power Efficiency
- Saving BOM Cost
Samsung 5G NR Progress

**3GPP Compliant**
Chips, module, platform for trial test

**Feature Validation**
- Advanced channel codes
- Low latency
- Self-contained frame
- Scalable OFDM numerology

**Interoperability Test**
- **Sub-6GHz**
  - LTE to NR refarm band, 3.5GHz, 4.5GHz

**Interoperability Test**
- **mmWave**
  - 28GHz, 39GHz
Samsung 5G NR – the Next Phase

**PHY**

Aggregated BW 1GHz+
Sub-6GHz with 1024QAM
mmWave with 256QAM
Smarter Hybrid BF with Finer Resolution

**Network**

Full Support of SA* Services
Compatible with Option 1/2/3x/etc.
Backhaul Networks

**Service**

Dynamic Mixture of eMBB/URLLC/mMTC Services
Balanced Design between Performance, Power, Cost

* SA : Stand-Alone
Key Takeaways

Strong LTE technology leadership contributes to 5G service stability

Prompt decision on 3GPP specification is always important

Simplification of specification & test cases will expedite 5G deployment