EU 5G Communication Green Base Station Project

What is 5G & how does it work?
With 5G, communication on the ground is to merge with space for the first time to form non-terrestrial networks, in which satellites can completely take over the role of base stations.

How do satellites connect to the 5G network?
These newer concepts for integrating satellites into the terrestrial 5G infrastructure are based on direct connectivitybetween satellites and 5G-enabled user equipment (UE) such as smartphones or vehicles. These devices then have access to the 5G network at all times - even when there is no terrestrial base station nearby.

How does Europe compare with other countries in 5G development?
On a range of technical and other criteria,Europe compares wellwith other leading countries and economies in 5G development,such as the USA,China,Japan,the Republic of Korea,Singapore and Taiwan.

Is 5G transforming Europe's digital future?
Following the publication of the EU toolbox for 5G cybersecurity, the Commission launched in February 2020 the strategy "Shaping Europe's digital future", with the objective of making EU a global leader in the digital economy. Connectivity, and 5G in particular, is identified as one of the most fundamental building blocks.

Could LSI be the foundation of a 5G base station?
Those LSI substrates for the software-defined radio modem,RF integrated circuits and MIMO antenna chips could be the foundationof every 5G base station and 5G smartphone,both for their own smartphone sales (Samsung,LG,etc) but also to sell to every other smartphone vendor,including the Chinese and Taiwanese.

What is 5G standardisation?
The three initial phases of 5G standardisation have now been completed, with the publication of 3GPP Release-15, Release-16 and Release-17 sets of specifications. This first phase focused on enhanced mobile broadband while also supporting ultra-reliability and low latency.

Mobile traffic volume is increasing by around 10 % every year. The infrastructure needed to support this - 5G base stations as well as end devices (mobile terminals, sensors and ...

5G is about more than smartphones. It can connect our industries, from automated cars to wireless robots, offering opportunities for sustainable growth and jobs across Europe. The ...

It compares 5G deployment in the EU with other leading economies - the USA, China, Japan, the Republic of Korea, Singapore and Taiwan. On a range of indicators, the EU compares well.

However, a significant reduction of ca. 42.8% can be achieved by optimizing the power structure and base station layout strategy and reducing equipment power consumption. ...

The German-French innovation project 5G-RACOM is investigating solutions for the efficient, reliable and sustainable use of the Future Railway Mobile Communication System (FRMCS) ...

In the future, however, not all satellites will be powerful enough to act as complete base stations. As part of the TRANTOR project funded by the European Commission, ...

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