

# RF-MEMS technology for 5G applications at CMM-FBK

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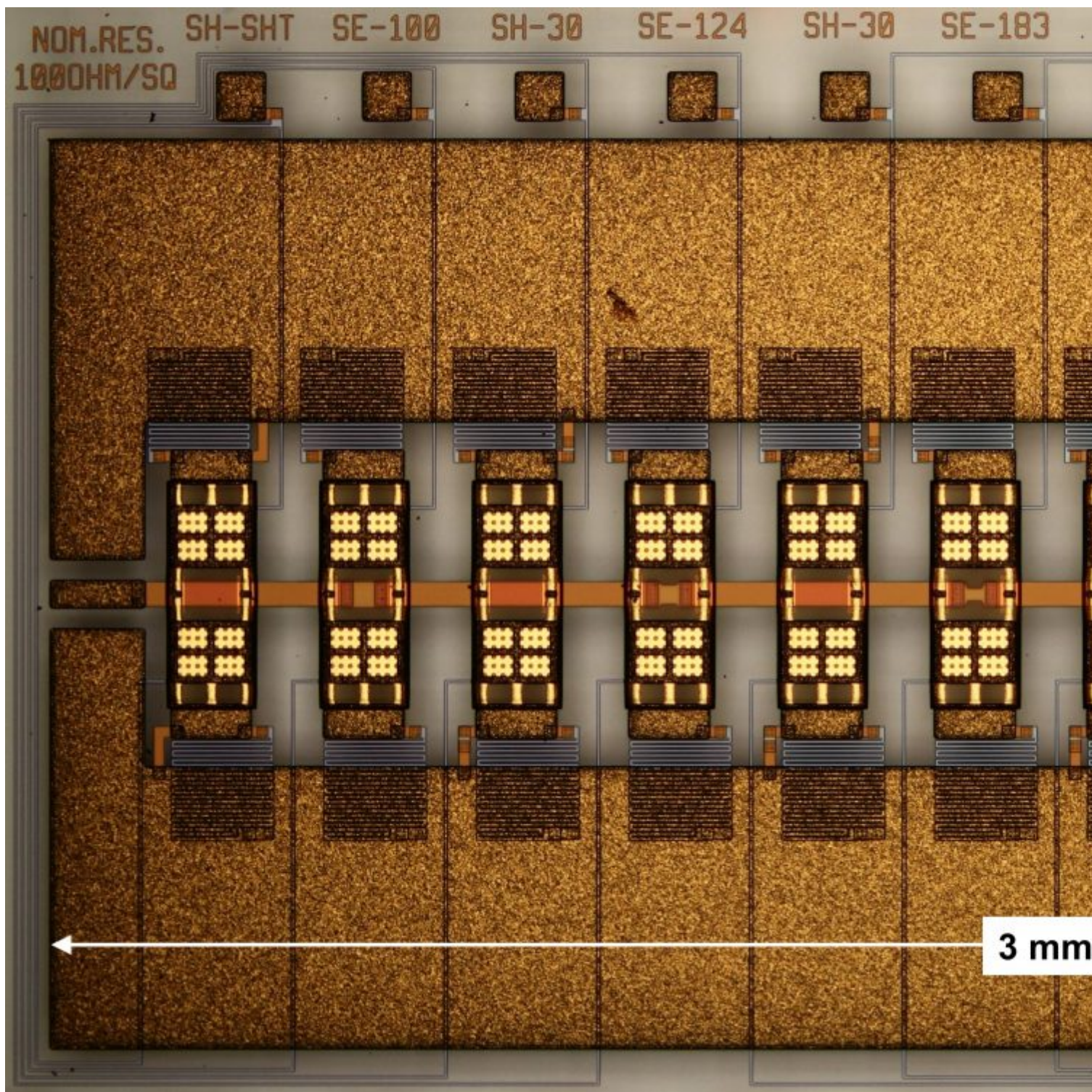
**The upcoming 5G mobile standards will pose challenging demands on hardware components, requiring very boosted performances in terms of high-frequency and wideband operability, low-losses, high-linearity, and so on. The RF-MEMS technology developed at the MST unit of CMM-FBK was recently demonstrated up to 110 GHz, and is a promising candidate to meet the 5G challenges.**

The emerging world of 5G is a field of convergence for diverse demands as rarely the research and industrial community witnessed before. 5G systems are predicted to deliver up to 1000 times the capacity of current 4G networks.

5G protocols will urge for higher operation frequencies (60 GHz and above) and large reconfigurability to cover different services, while reducing hardware redundancy and power consumption. To do so, it is necessary to leverage on passives with boosted characteristics (low-loss, high-isolation, etc.), and RF-MEMS technology is one of the most promising candidates, both for 5G smartphones front-ends and base stations.

An article, authored by the MST unit at CMM-FBK, was published on the December 2016 issue of the prestigious IEEE Electron Device Letters (EDL). The contribution discusses a high-performance reconfigurable 8-bit power attenuator for Radio Frequency (RF) signals, entirely designed and manufactured in the RF-MEMS technology at CMM-FBK, demonstrated up to 110 GHz. It is the first time that such a complex device is reported in the international scientific community.

This important achievement will provide adequate visibility to the CMM-FBK RF-MEMS technology and to its potential in addressing the challenging requirements of 5G future applications.



#### PERMALINK

<https://magazine.fbk.eu/en/news/rf-mems-technology-for-5g-applications-at-cmm-fbk/>

#### TAGS

- #5G

- #digitalsociety
- #mobile
- #sensordevices
- #standard

#### **RELATED MEDIA**

- Article "RF-MEMS for 5G mobile communications: A basic attenuator module demonstrated up to 50 GHz": <http://ieeexplore.ieee.org/xpl/RecentIssue.jsp?punumber=55>
- Article "RF-MEMS Technology for Future Mobile and High-Frequency Applications: Reconfigurable 8-Bit Power Attenuator Tested up to 110 GHz": <http://ieeexplore.ieee.org/document/7726036/>
- MST - Microsystem Technology FBK CMM Research Unit : <http://mst.fbk.eu/>

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