

# 5G sub-6 GHz cellular infrastructure FEMs using 8SW RF SOI

Differentiate with superior LNA and switch performance

**1st** 

8SW is the industry's first fully qualified high-volume RF SOI foundry solution manufactured on 300 mm wafers.

 **Supply assurance**

High-volume, globally distributed GF manufacturing facilities.



Sleek, already-available 5G mobile devices cannot deliver the blazing-fast download speeds, ultra-low latency and high data throughput that immersive user experiences like 8K HD video streaming and AR/VR require unless the cellular infrastructure they rely on keeps pace. The race is on to deploy, expand and future-proof these networks to ensure 5G lives up to its full potential.

The 8SW RF SOI solution from GlobalFoundries (GF®) delivers best-in-class switch and low-noise amplifier (LNA) performance for 5G sub-6 GHz cellular infrastructure front-end modules (FEMs). Take advantage of these benefits to develop network hardware that delivers the capacity, speed and responsiveness new 5G applications and services demand.

## 8SW at a glance

Platform	Key features
130 nm PD-SOI	<ul style="list-style-type: none"> <li>• Low noise figure &amp; high gain (LNA figure of merit &gt; 200)</li> <li>• Low switch <math>R_{on} \cdot C_{off}</math> (&lt; 90 fs)</li> <li>• High linearity</li> <li>• Small digital footprint, low power logic (1.8 V/1.2 V SC library)</li> </ul>


**Extend coverage:**

8SW combines best-in-class switch  $R_{on} \cdot C_{off}$  with LNA noise figure, gain and linearity benefits for high RF receiver sensitivity and high signal quality, over a broad range.


**Handle 5G complexity and performance demands:**

Get 5G-ready performance by adding the switch arms or modes needed for multimode operation without worrying about loss or isolation impacts and take advantage of the thick copper top-level metals available in 8SW to boost signal amplification and quality.


**Maximize power efficiency:**

Deliver power-efficient system-level hardware by leveraging 8SW's low-voltage standard cell libraries and LNA gate length ( $L_{eff}$ ) options that enable better gain/linearity without affecting power consumption.


**Boost your ROI:**

Get the most from your investments by taking advantage of 8SW's 300 mm manufacturing, advanced processing and controls and more area for test sites and design variations for customer optimization.


**Meet demand, faster:**

Capitalize on GF's globally distributed fabs and comprehensive post-fab RF turnkey services that enable you to tap into unrivaled RF expertise built on two decades of experience to meet supply demands and accelerate time to market.

**LEARN MORE**

GF knows RF. Learn how our extensive cellular infrastructure and SATCOM solutions portfolio can help you extend your 5G leadership at [globalfoundries.com/contact-us](https://globalfoundries.com/contact-us)

**Contact Us**

**GF 5G cellular infrastructure & SATCOM solutions**

Solution	Application	Benefits
45RFSOI	5G mmWave	Superior performance with high $P_{sat}$ (up to 23 dBm) for cellular infrastructure & SATCOM FEMs and beamformers
22FDX® RF	5G mmWave	Superior performance with highest level of integration & high $P_{sat}$ (up to 20 dBm) for cellular infrastructure & SATCOM FEMs and beamformers
8SW RF SOI	5G sub-6 GHz	Outstanding performance for 5G sub-6 GHz cellular infrastructure