TELGUARD

2G SUNSET PRIMER

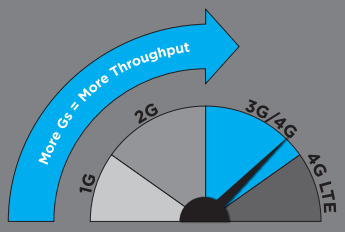
Introduction

Cellular alarm communicators are one of the few tools that reward security dealers with increased productivity, reduced maintenance and access to many revenue generating services for such a low cost. They are based on quality technology that, along with other high-grade electronics, will eventually evolve to an even higher level. December 31, 2016, the official date of the 2G Sunset, is when today's 2G products will be forced to evolve.

This primer will explain the essential details security dealers need to understand as they weigh the decision to either continue installing 2G (GSM or GPRS) or to make the wise switch to products for 3G/4G networks. We hope this document helps security dealers understand the scope of the change that is afoot and motivates them to join Telguard in moving to products for 3G/4G (UMTS, HSPA, or HSPA+) networks as soon as possible.

The Importance of Cellular Generations

Throughput is at the heart of a cellular generation. A generation is defined when a new technology is invented that achieves a significantly higher level of throughput. For example, 2G is similar to dial-up modems; 3G delivers multi-megabit speeds; and 4G is characterized by hundreds of megabits of throughput.

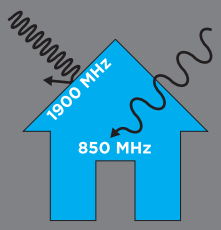


The important thing to remember is that what carriers call 4G is just a faster 3G. Both 3G and what is being called 4G are based on HSPA technology, therefore 4G will not last longer than 3G. For the security intrusion industry, faster 3G speeds aren't necessary: *the longevity offered by the 3G network is*.

The Importance of Cellular Frequencies

As the 2G Sunset approaches, *spectrum refarming* by the cellular carriers will dramatically alter the performance of 2G hardware based on their allocation of cellular frequencies.

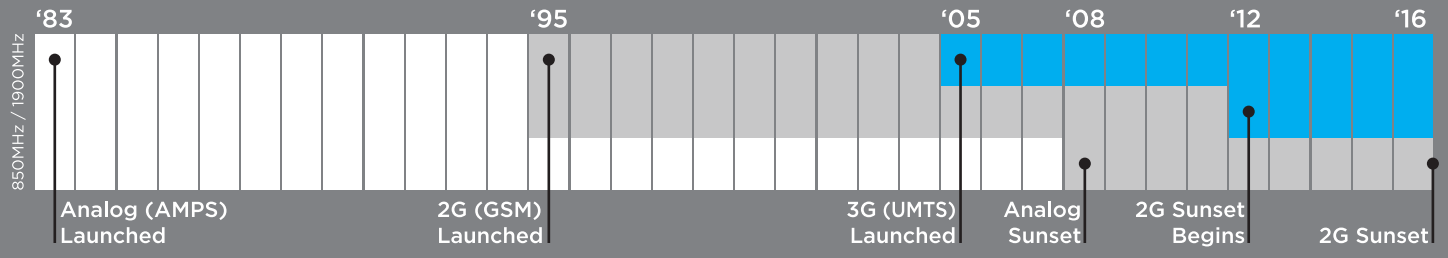
To comprehend the effect, the only characteristic a security dealer needs to understand is that lower frequencies penetrate buildings better than higher ones.



In the U.S., the lower frequency band is at 850 MHz and the higher band is at 1900 MHz. Most cellular devices installed inside homes and businesses rely on the deep penetrating 850 MHz band to connect to neighboring cell towers.

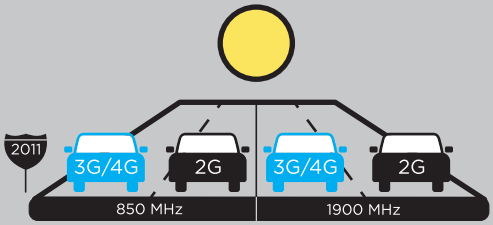
Predicting the Next Sunset

Cellular carriers aggressively manage their most precious asset: cellular spectrum. Whenever a cellular carrier launches a new technology that shares spectrum with an older technology, the older technology will become obsolete and will sunset within 15 years. In 1995, AMPS began sharing spectrum with 2G (GSM). Within 13 years the infamous Analog Sunset completely eliminated AMPS from the cellular landscape. Similarly, 2G began sharing spectrum with 3G/4G in 2005 and, driven by the huge popularity of smart phones, is on pace to disappear in no more than five years.

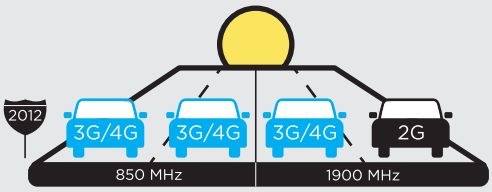


The correlation between a new technology launch and the sunset of the older technology isn't an idle observation. Major cellular carriers officially stopped certifying 2G devices in 2011. This effectively halted the launch of any new commercial 2G devices and forced future products to use 3G/4G from 2012 forward. Consumer devices—harder to purge from active circulation—underwent an identical ban long ago. Visit a local wireless store and see how many 2G only devices are on sale: *zero*.

Roadmap of the 2G Sunset

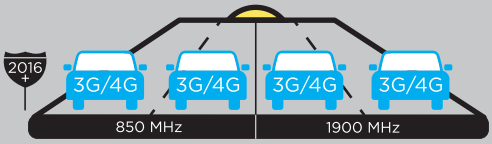


You'll recall that cellular carriers deploy their networks in two frequency bands: a preferred band with deep building penetration (850 MHz) and another band with shallow building penetration (1900 MHz). Prior to 2011, cellular carriers equally spread 2G and 3G/4G across both bands like a highway that allows all cars to drive in all lanes.



Starting in 2011, in an effort to increase service levels to their consumer cell phone customers, cellular carriers started to make their preferred frequencies 3G/4G only. The process is called *spectrum refarming.* Similar to how semis must stay in the highway's far right lanes because of their slower speeds, 2G devices will not be allowed on the best frequencies.

For 2G devices this will be a noticeable shift. If they were installed based on the coverage provided by the preferred frequencies, their signal levels will drop as they are forced onto the inferior, shallow penetrating frequencies still supporting 2G. This restriction will not occur all at once. It will appear sporadically across the country and when it does, only 3G/4G devices will be oblivious to the change.



Finally, after December 31, 2016, when the 2G Sunset is complete it will be just like the Analog Sunset. Anything using 2G will stop working overnight. Only 3G/4G will work from that day forward.

The Importance of Switching to 3G/4G

The fact that over time all 2G devices will need to be replaced accounts for an obvious financial impact to replace them. An impact accounted for mainly with the cost for new equipment and truck rolls. For each month past January 1, 2012 that a dealer fails to fully adopt 3G/4G, the financial impact of the 2G Sunset grows substantially. The reason is simple: *They are installing equipment that will need to be replaced.*

In 2012 dealers will have two options. They can keep installing 2G and deal with the inevitable replacement costs, or they can simply install 3G/4G and insulate themselves from them.

The Real Cost of Installing 2G

Install 2G | Pay for a Truck Roll | Replace 2G With 3G/4G

The Only Cost of Installing 3G/4G

Simply Install 3G/4G and Avoid Future Replacement

The sooner a security dealer switches to 3G/4G, the more he can smooth out the sudden impact of the coming sunset, mute the effects of spectrum refarming, and halt their growing base of 2G equipment needing inevitable replacement.

Learn More at 2GSunset.com