TOPCON GPS+ TECHNOLOGY

Now, you have a basic understanding of how the system works, and while we have tried to keep it simple, it really is quite complicated. That's one reason why so few companies have the ability to build real-time, high accuracy receivers. Topcon is proud to be the leader in this field of technology. Along with leadership in optical surveying instruments, construction lasers and equipment automation systems, Topcon is the only company in the world that focuses exclusively on high-precision positioning products for all civil engineering applications.

Creating solutions for your positioning problems and increasing your productivity is what we do 24/7. It's our passion, and we think we do it better than anyone else. Just like our GPS+ technology is better than ordinary GPS.

So what is it exactly? It's everything ordinary GPS is plus!

- **Paradigm Chip**
- **Co-Op Tracking**
- **Fast Initial Acquisition and Re-Acquisition**
- **Multipath Reduction**
- **Antenna With High Phase Center Stability**
- **In-Band Interference Suppression***
- **GLONASS***

** Optional, activation fee required*

Paradigm Chip

At the heart of every Topcon GPS+ receiver is its advanced Paradigm chip—providing an amazing 40 channels of signal reception (compared to ordinary GPS manufacturers maximum of 24 channels). With its advanced design, the Paradigm chip also draws less power than any other designs, allowing our receivers to run longer so you can stay in the field without delays to recharge or replace batteries.

Co-Op Tracking

Topcon's patent-pending Co-op Tracking allows you to go places and work accurately where no other manufacturer's receiver can. So what is co-op tracking exactly? The best to way to explain it is with an example. Have you ever tried to track a star at night using a pair of binoculars? Pretty easy, isn't it? Now, get in the bed of a truck and try to track that star as you're driven across a bumpy field at 20 mph while going under some trees! Still able to track the star? No way.

Well we have invented a unique way to use the satellites with their extremely precise and predictable orbit (position) to look back at the roving GPS+ receiver and keep it in it's field of view at all times, and when it disappears under tree's or behind a building for a few seconds, to immediately pick it up when it reappears, hence the term co-op tracking. The receiver and satellites are co-operating to perform this advance trackingcapability, something no one else has!

Ask your Topcon rep to demonstrate this feature—it's truly amazing, even more so if you know how limited ordinary GPS is in these situations. The more you know about GPS, the more you'll know you need Topcon GPS+!

Fast Initial Acquisition and Re-Acquisition

When you first turn on your GPS receiver it must acquire, or find, the satellites. Topcon's 40-channel Paradigm chip has four correlators per channel and, during the initial search, each correlator acts as a channel to help find the satellite signal. Compare this to ordinary GPS' normal 24-channel receiver with no additional correlators and it's easy to figure out GPS+ is 7 times faster at initial acquisition (40 x 4 = 160, 24 x 1 = 24)!

This feature, along with co-op tracking, allows GPS+ to re-acquire satellites almost instantaneously (one second) should you ever lose acquisition. Consider how nice it would be if your personal computer powered up 7 times faster, and anytime it froze it would restart instantly. That's what Topcon GPS+ gives you compared to ordinary GPS, and that's more up time for you and your machines!

Multipath Reduction

Using our advanced algorithm techniques, we are able to practically eliminate the errors caused by signals bouncing off objects surrounding your job site.

Antenna With High Phase Center Stability

Topcon's patent-pending, high precision Phase Centered Antenna eliminates all signals except those coming from the Global Navigation Satellite System, ensuring highest order of accuracy.

In-Band Interference Suppression

With the world of wireless communications growing rapidly, more and more opportunity for in-band interference of the GPS signal can occur. To keep that inference out, we have created a unique (patent pending) In-Band Interference Suppression capability (up to 60db for U.S., up to 30db for international due to export control laws that require a license for our unique technology outside the U.S.). Just like co-op tracking, this allows Topcon GPS+ receivers to work in environments where ordinary GPS cannot.