



SPECTRA[®]
GEOSPATIAL

What's New in Spectra Geospatial GNSS Portfolio

Distribution Partner Presentation

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5 Key Takeaways

Tilt

IMU-Based Tilt
Compensation

Talk to customers about
the time savings & safety
benefits

Improved Z-Blade™ Engine

Better Accuracy
More Repeatable

Demonstrate to
customers in tree canopy

Dual-Band Radio

Radio model can transmit
& receive on both 450 and
900 MHz

A non-radio model is also
available

Subscription & Perpetual Licensing

Customer can choose
their preferred license
type: perpetual or yearly
subscription

Replaces SP85

SP100 replaces the SP85

Agenda

- **Features, Specs, & Performance**
- **Hardware Models & Configurations**
- **Accessories**
- **System Compatibility**
- **Release Schedule, Materials, Ordering, & Availability**
- **Time for Questions**



Features Specifications Performance





Εντοπισμός υψηλής ακρίβειας στο πιο δύσκολο περιβάλλον

- ❖ Βελτιωμένη GNSS engine
- ❖ Triple frequency GNSS
- ❖ Λήψη όλων των διαθέσιμων δορυφορικών συστημάτων, standard σε όλες τις εκδόσεις SP100



Ταχύτερη μέτρηση με IMU

- ❖ Μετρήστε με ασφάλεια σε δρόμους χωρίς να βλέπετε την αεροστάθμη
- Μέτρηση δύσκολων σημείων όπως::
γωνίες κτιρίων, σημεία με εμπόδια, φράχτες, όρια οικοπέδων, κοντά σε υπόστεγα κ.α.



Ανθεκτικός σχεδιασμός IP68

- ❖ Μέτρηση σε απαιτητικές εξωτερικές συνθήκες και περιβάλλοντα όπως σκόνη, υγρά, κρύα και ζεστά περιβάλλοντα

Spectra Geospatial IMU-based tilt compensation

- **IMU-based tilt compensation** technology.
- **Easy to use**
 - No need to level for most topo & stakeout tasks
 - Measure obstructed points—like building corners—with ease
- **Continue to work in challenging** GNSS environments
- **Tightly coupled GNSS & inertial** solution.
- **GNSS positioning engine** provides APC position:
 - IMU aligned to GNSS reference frame through normal movement.



GNSS Engines: The real performance differentiator

History of Z-Blade Technology

To get a GNSS position, you need minimum 4 satellites

In the past, you needed 4 satellites from ONE constellation (for example, GPS)

When Z-Blade was introduced, it made history as the first GNSS engine able to mix-and-match satellites from different constellations to form a solution:



GNSS Engines: The real performance differentiator

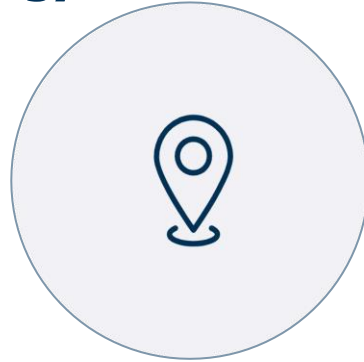
The New Z-Blade™ Proprietary Technology



Leverage **All** Available Signals

Engine can mix-and-match individual signals from satellites and use them

Some competitive receivers can track individual signals but not necessarily use them



Improved RTK performance in tough environments

Better performance in challenging environments where satellite line of sight can be impaired.

The engine uses advance signal filtering that can process or use any signal to help optimize the solution.



Signal Monitoring

The Z-Blade engine also includes mitigation for:

Ionospheric Error

Multipath

Spoofing



Why do I want it?

Better accuracy

More repeatable

Especially in tree canopy

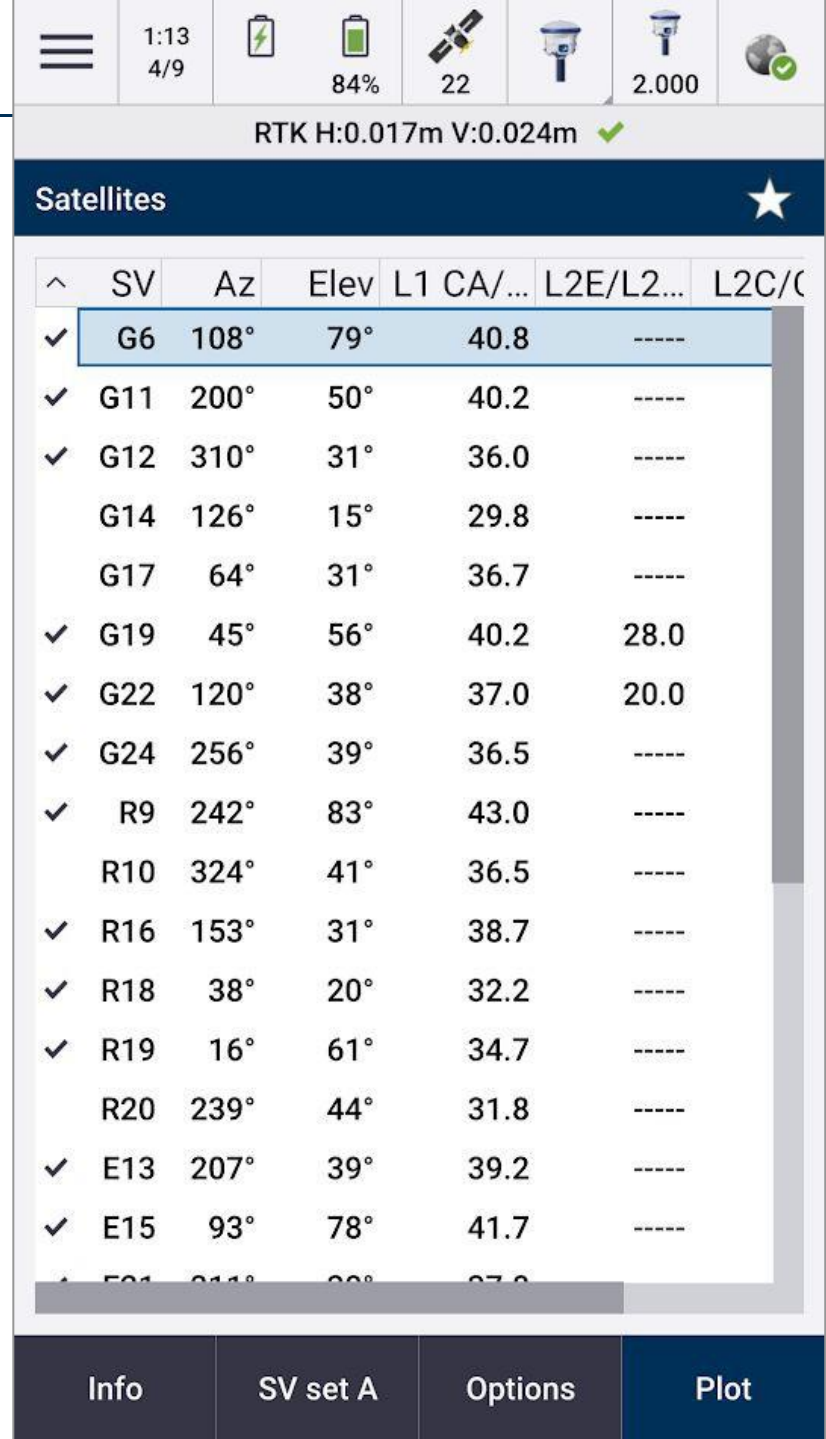
GNSS Engines: The real performance differentiator

How to show we're different: Demo!

- Take the SP100 into challenging environments
- Note how quickly it's fixed
- Note the estimated precisions: we stand behind these as realistic values

Show which satellites that are being used in Origin:

- Tap the satellite icon  in the status bar > List
 - Check mark  indicates whether that satellite is used



The screenshot shows the top status bar of a GNSS application. It includes a menu icon, time (1:13), signal strength (4/9), battery level (84%), satellite count (22), and other icons. Below the status bar, the RTK status is shown as 'RTK H:0.017m V:0.024m' with a green checkmark. The main section is titled 'Satellites' and contains a table of satellite data. At the bottom, there are four tabs: 'Info', 'SV set A', 'Options', and 'Plot'.

SV	Az	Elev	L1 CA/...	L2E/L2...	L2C/C
✓ G6	108°	79°	40.8	----	
✓ G11	200°	50°	40.2	----	
✓ G12	310°	31°	36.0	----	
G14	126°	15°	29.8	----	
G17	64°	31°	36.7	----	
✓ G19	45°	56°	40.2	28.0	
✓ G22	120°	38°	37.0	20.0	
✓ G24	256°	39°	36.5	----	
✓ R9	242°	83°	43.0	----	
R10	324°	41°	36.5	----	
✓ R16	153°	31°	38.7	----	
✓ R18	38°	20°	32.2	----	
✓ R19	16°	61°	34.7	----	
R20	239°	44°	31.8	----	
✓ E13	207°	39°	39.2	----	
✓ E15	93°	78°	41.7	----	

Comparison to SP85 GNSS Receiver: Real-time accuracy (RMS)

	SP85 	SP100 
Real-Time DGPS position		Horizontal: 25 cm +1ppm Vertical: 50 cm +1ppm
Real-Time Kinematic Position (RTK) (Single baseline <30kms)		Horizontal: 8 mm +1ppm Vertical: 15mm +1ppm
Network RTK		Horizontal: 8 mm +0.5 ppm Vertical: 15mm +0.5 ppm
RTK Tilt Compensated Performance	N/A	Horizontal RTK +8 mm +0.5 mm/° tilt IMU bias is monitored in real time against temperature, age and shock

Comparison to SP85: Channels & Tracking

	SP85	SP100
GNSS Channels	600	672
Satellite Tracking	<ul style="list-style-type: none"> –GPS L1C/A, L1P, L2C, L2P, L5 –GLONASS L1C/A, L1P, L2C/A, L2P, L3 –Galileo E1, E5a, E5b, E5 AltBOC –BeiDou (Phase III) B1, B2 –QZSS L1C/A, L1C, L2C, L5 –IRNSS L5 –SBAS L1C/A, L5 (WAAS, EGNOS, MSAS, GAGAN, SDCM) –L-band: MSS 	<p>GPS: L1C, L1 C/A, L1P, L2P, L2C, L5 GLONASS: L1C/A, L1P, L2C/A, L2P, L3 Galileo: E1, E5A, E5B and E5AltBOC, E6 BeiDou: B1, B2, B3, B1C, B2A QZSS: L1 C/A, L1C, L1S, L2C, L5, LEX/L6 IRNSS: L5 SBAS: L1 C/A (EGNOS/MSAS GAGAN/SDCM), L1 C/A and L5 (WAAS) L-Band: Trimble RTX</p>
RTX	<p>Not officially specified, typically:</p> <ul style="list-style-type: none"> • Horizontal 4cm • Vertical 6cm 	<p>Horizontal 2cm Vertical 3cm</p> <p>Convergence time:</p> <ul style="list-style-type: none"> • RTX Fast regions <1min • Non RTX Fast regions <3 min



Don't get caught up in a channel spec war

More important than channels:

- Capability to track all modern signals
- Processing engine that leverages all available signals in a sophisticated way

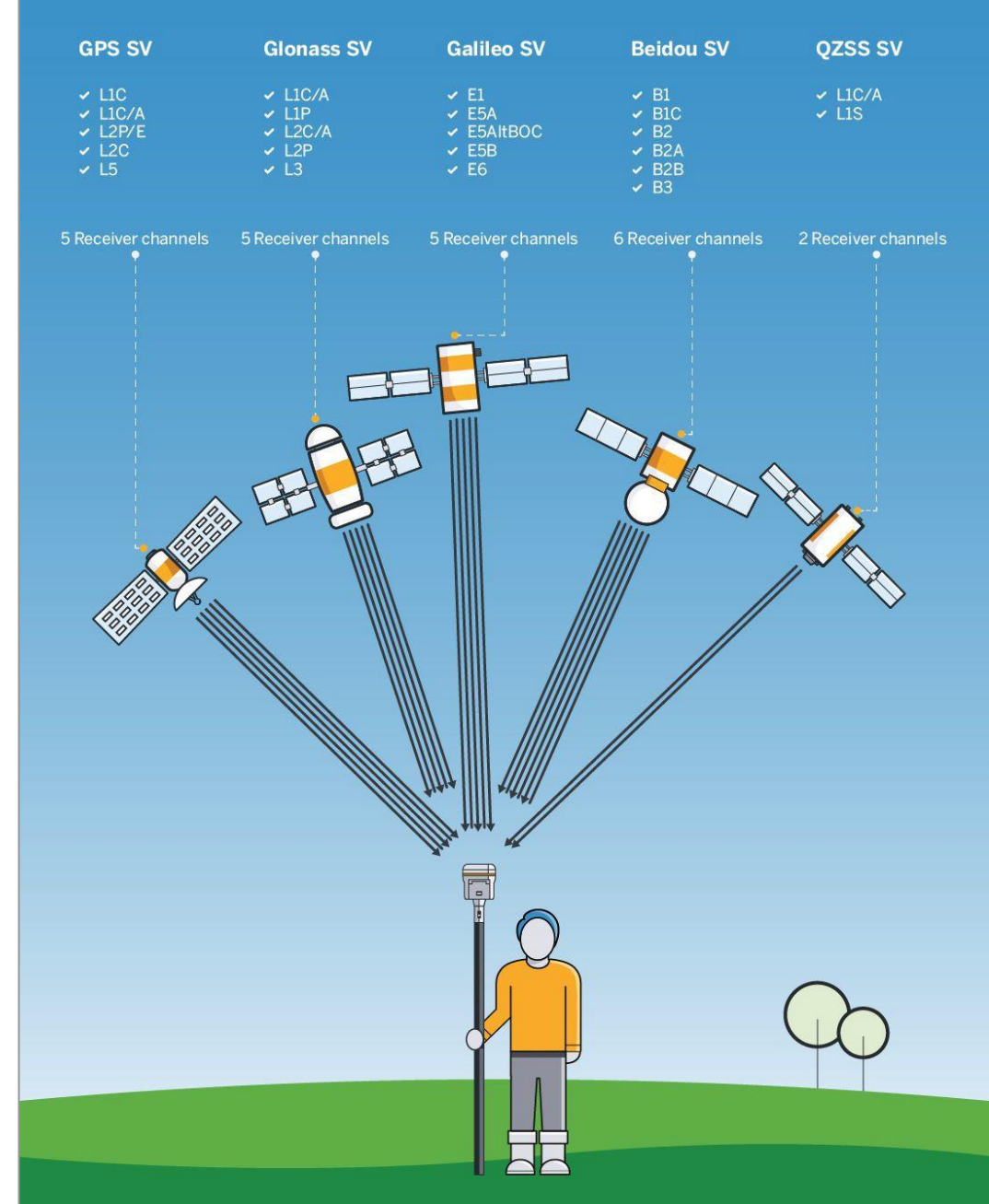
Tracking 672 channels is plenty!

Let's say you can see half of all satellites in existence (since the Earth blocks half)

And you are tracking all available signals

That's only 299 channels

Learn more <https://geospatial.trimble.com/en/resources/blog/gnss-receiver-channels-and-satellite-tracking>



Comparison to SP85: Data Formats

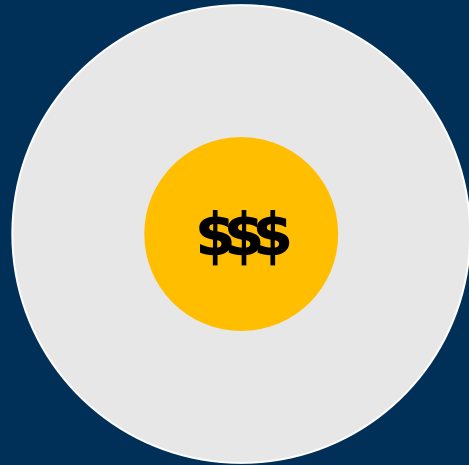
	SP85	SP100
Data format	<p>ATOM</p> <p>CMR, CMR+, CMRx and sCMRx (rover only)</p> <p>RTCM 3.2 (including MSM)</p> <p>NMEA</p>	<p>CMR, CMR+, CMRx</p> <p>RTCM 3.2 (including MSM)</p> <p>RTCM 3.4 coming soon</p> <p>NMEA</p>

Hardware Models & Configurations



Customer Picks their Preferred Licensing Method

Spectra Geospatial's first Hardware configurable as a subscription!



Perpetual License

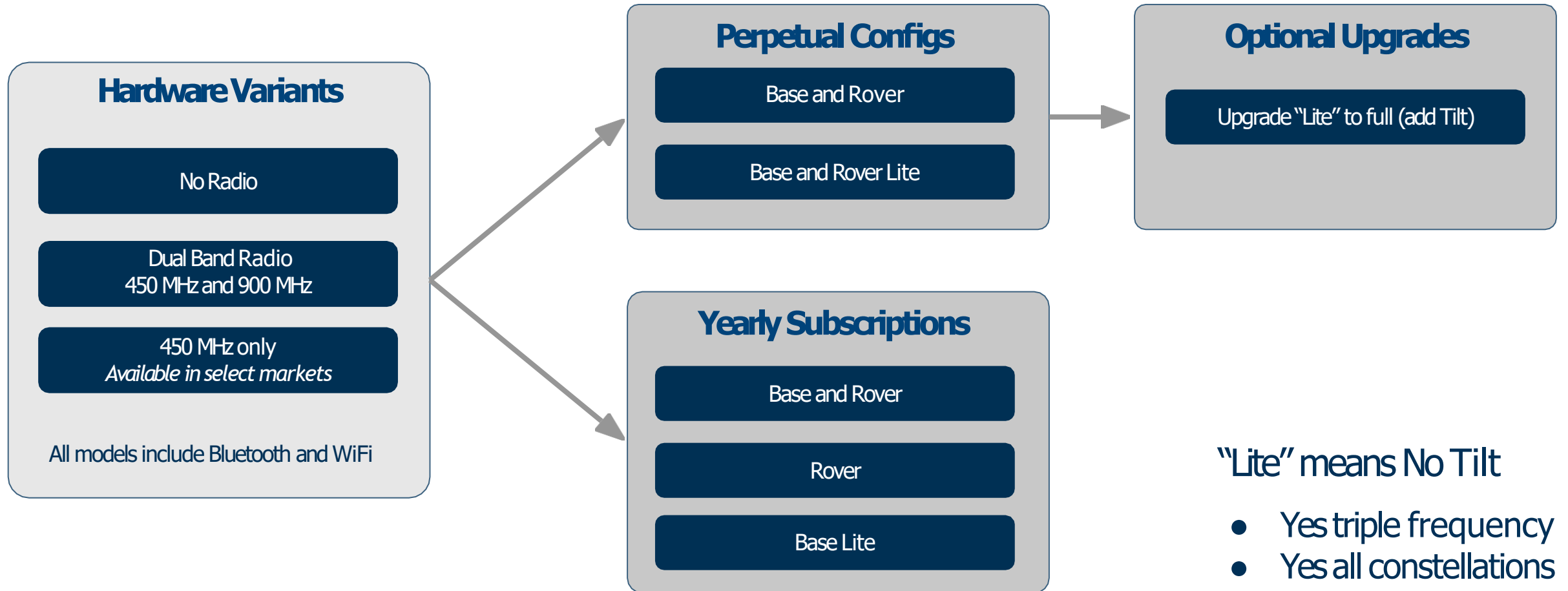
- Simple one-time purchase



Yearly Subscription License

- Try out Spectra Geospatial without the traditional upfront costs
- Change or upgrade later if you want
- Subscriptions come with access to the latest GNSS firmware updates/enhancements

Hardware & Configurations



"Lite" means No Tilt

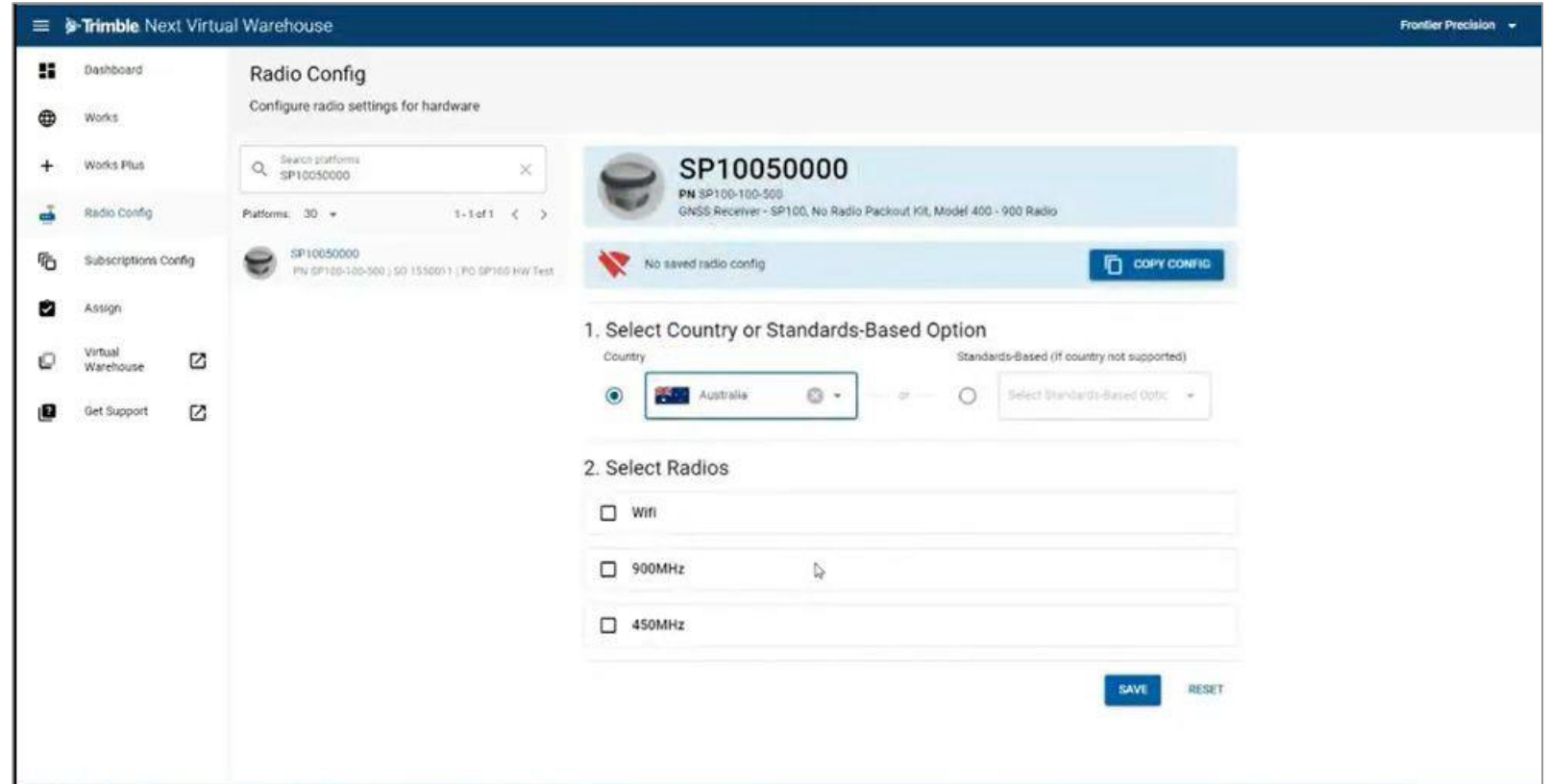
- Yes triple frequency
- Yes all constellations
- No xFill on any SP100



Dual Band Radio - Next Virtual Warehouse

900 Mhz Supported Countries,
license free:

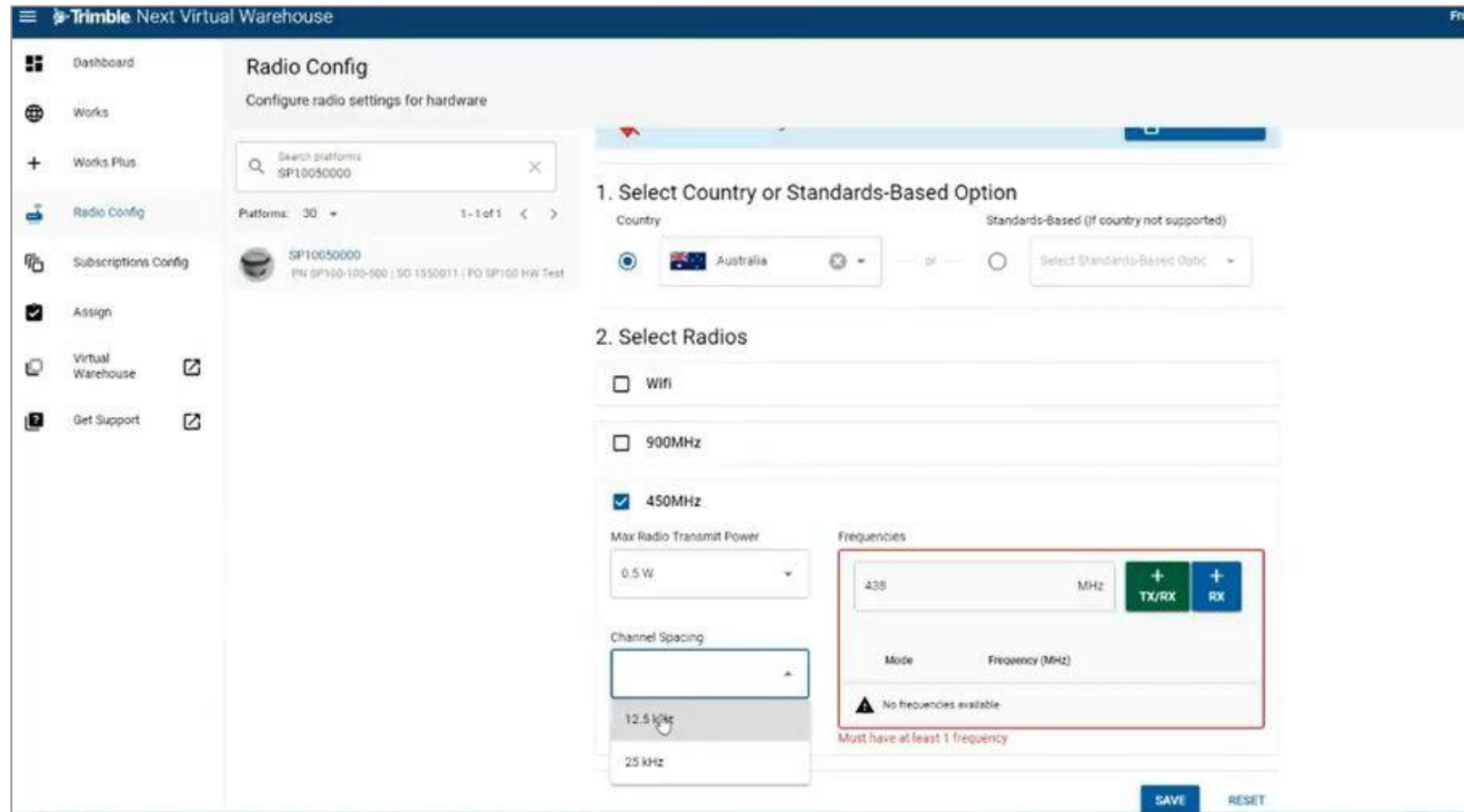
- US
- Canada
- New Zealand
- Australia



Dual Band Radio - Next Virtual Warehouse

Configure your radio settings in VW:

- Transmit Power
- Channel Spacing
- Frequency



Dual Band Radio - Next Virtual Warehouse

You cannot add 900Mhz to a non-approved country

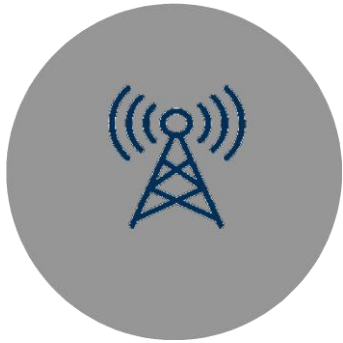
The screenshot displays the 'Radio Config' page in the Trimble Next Virtual Warehouse. The left sidebar contains navigation options: Dashboard, Works, Works Plus, Radio Config (selected), Subscriptions Config, Assign, Virtual Warehouse, and Get Support. The main content area is titled 'Radio Config' and includes a search bar for platforms, currently showing 'SP10050000'. Below the search bar, there are fields for 'Platforms' (30) and '1 - 1 of 1'. The selected platform is 'SP10050000' with details: 'PN SP100-100-500 | SO 1550011 | PO SP100 HW Test'. A status bar indicates 'Has Radio Config' with a 'COPY CONFIG' button. The configuration steps are: 1. Select Country or Standards-Based Option, where 'Austria' is selected. 2. Select Radios, where '450MHz' is selected. Under '450MHz', 'Max Radio Transmit Power' is set to '0.5 W' and 'Channel Spacing' is '12.5 kHz'. A 'Frequencies' table is shown with a single entry: 'RX' mode at '438 MHz'. 'SAVE' and 'RESET' buttons are at the bottom right.



Corrections & Comms

All Models

Radio Model



Local Base via Radio

New radio is capable of transmitting/receiving 450 or 900 MHz Signals and compatible with the new ADL450B radio



Local Base via IBSS

Available through Origin & Trimble Connect

Free to anyone on a current Origin subscription license, or using a perpetual license with an active warranty

Uses the controller's modem (no modem in SP100)



VRS Network

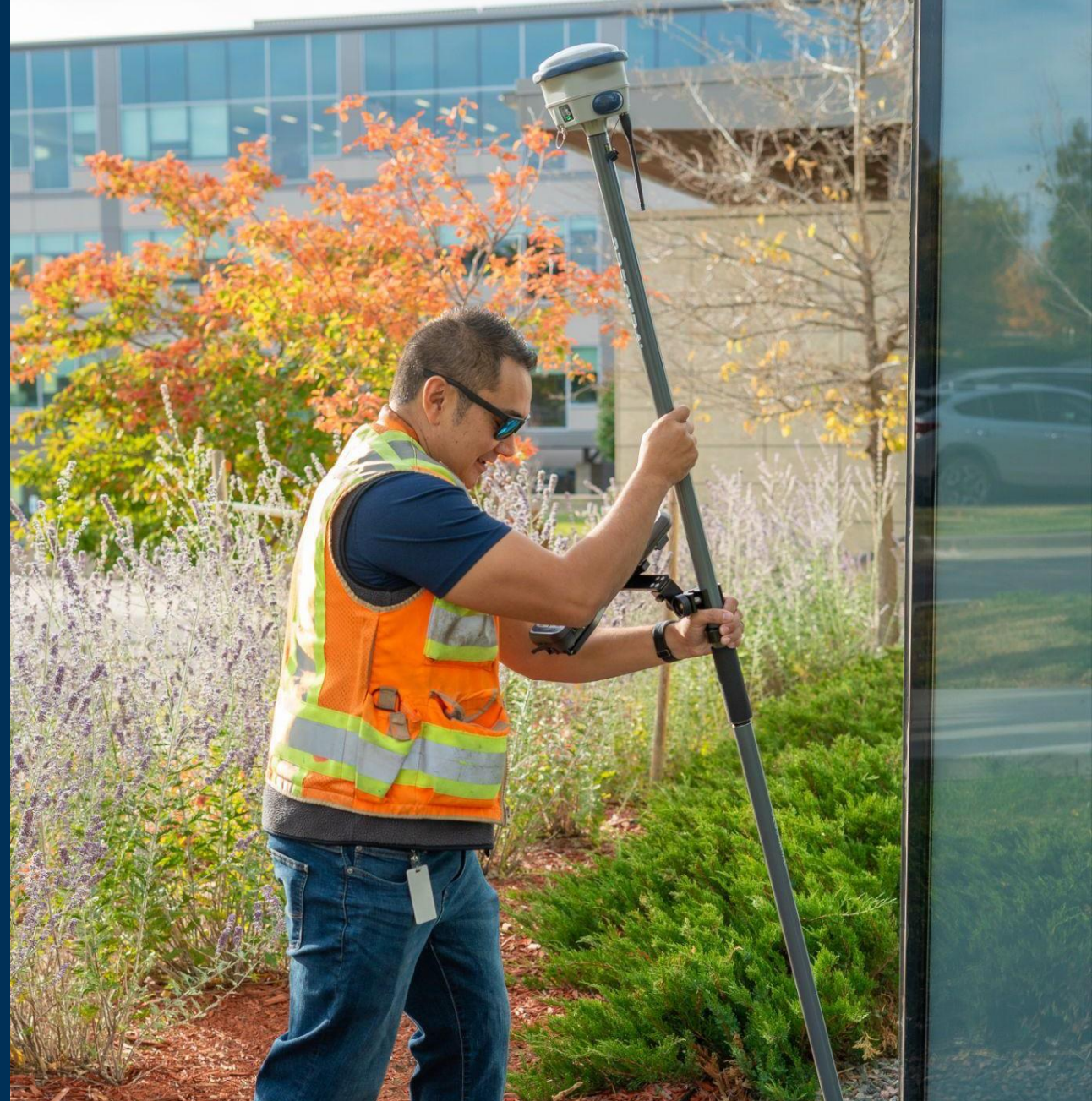
Using the controller's modem
No cell modem built-into SP100



RTX CenterPoint

Compatible with RTX as a separate subscription
Note, xFill is not compatible with any SP100

Accessories



Antennas: 3 Different Antennas to go with the Receiver Models

No Radio Model



External Antenna is used for Bluetooth and Wi-Fi, don't forget to connect it!

Dual Band Radio Model
450 MHz and 900 MHz
Antenna can Rx/Tx on both Frequencies

450 MHz only Model
Available in select markets
Antenna Tx/Rx on 450 MHz only



External Antenna is used for UHF
Bluetooth and Wi-Fi use an internal antenna that transmits through the blue dome on the side



What's in The Box

Description
Computer cable for downloads/firmware installs
2 Batteries
Hard Case
Antenna (model varies depending on receiver HW)
Documentation <ul style="list-style-type: none">- Quick Start Guide- Accessories Card- Electronic waste (WEEE)

Part numbers will be provided in the product bulletin



Part Number	Description
84690-00-GEO	SPS Quick lock
80751-GEO	7 pin Lemo to USB A cable
83223-01	7 pin Lemo to SAE connector cable
89864-00	7 pin Lemo to SAE connector Battery Clips. 2M
80799	7 pin Lemo to USB-A Receptacle cable
192670	Battery
101070-00-xx	Dual Battery Charger with Power Supply and Power Cord
88400-00-SPN	Rod- 2.0m Aluminum Range Pole- Spectra
88400-01-SPN	Rod- 2.0m Carbon Fiber Range Pole- Spectra Geospatial
88401-02-SPN	Tripod- Advanced Fiberglass Composite, Heavy Duty Tri-Max Tripod- Spectra Geospatial



System Compatibility



Software Compatibility



Survey Office
2023.10

Need to add the SP100
antenna.ini file to 2023.10



TBC
2023.10

Need to add the SP100
antenna.ini file to 2023.10



Origin
2024.00

*Legacy SurveyPro is not
compatible with the SP100*

*Customers with older
controllers + Survey Pro will
need to update to use
SP100*



Trimble Access
2024.00



Spectra Geospatial Devices

The screenshot displays the Spectra Geospatial software interface. At the top, there is a status bar with icons for menu, time (1:59), battery levels (97% and 86%), signal strength (32), a green checkmark, a distance of 2.000, and a yellow warning icon. The main display area is split into a map on the left and a 'Stake out items' table on the right. The map shows an aerial view with a yellow point and a dashed line indicating a distance of 5609. A 'Fill 0.212m 10m' label is also visible. The 'Stake out items' table has the following data:

Name	Code
× 5658	GPR

At the bottom, there is a navigation bar with buttons: Esc, Add, Remove, Point, Closest, and Stakeout.

Ranger 7



Ranger 5



ADL450B



MobileMapper 6

Release Info: Schedule, Materials, Ordering & Availability



Release Schedule



Compliance Status

Tier	Countries	Expected Completion Date
Tier 1	US/CAN/EFTA/UK/ANZ	Complete
Tier 2	India, Kazakhstan, Taiwan	Complete
	Japan	Complete
	China	To be confirmed, work in progress
	South Korea	May
	Mexico	Mid-June
	Brazil	May
	South Africa	May
	UAE, Saudi Arabia, Chile, Thailand	Mid-June
Tier 3	Everyone else with exception	No other regions in progress Follow the standard distributor-initiated process



Country ship holds are implemented until Tier 2 compliance is complete

SP100 Sales & Marketing Materials

- Release Overview, Messaging and Assets (with links to Partners website)
- Product Overview Video
- Application and Product Images
- Marketing Assets
- Sales Presentation
- Product FAQs
- Product web page
- Product Bulletin (with part numbers)
- Datasheet + translations
- Quick Start Guide
- User Guide



SP100

DATASHEET

Measure quicker and safer with IMU-based tilt compensation.
Capture more data with more confidence and better repeatability, even in tree canopy with an improved GNSS engine and triple frequency support.

Connect the SP100 to the user-friendly Origin field software.

With an ultra-rugged rover, never worry about your physical environment.

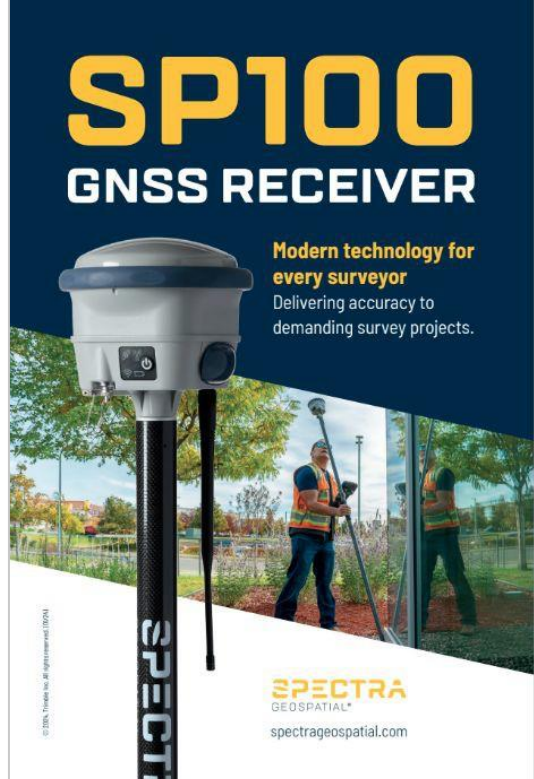
Modern technology for every surveyor

The Spectra Geospatial® SP100 GNSS receiver is everything you need for surveying. With precise, IMU-based tilt compensation, the SP100 gets field work done faster. Combined with Origin Field software and Survey Office software, the SP100 helps you handle any surveying project quickly and cost efficiently.

- **Optimal productivity and safety: get more done faster and safer**
With its highly efficient tilted measurement capability, the SP100 automatically compensates to provide high quality positions—no need to level. Easily capture hard-to-reach points from building corners and fence lines to river boundaries, all without ever having to level. Survey with complete safety as the IMU-tilt compensation allows you to work on roads and monitor traffic simultaneously.
- **Peak performance: high precision wherever your work takes you.**
Continue to work with high accuracy anywhere your work takes you—in the city or near trees—with an improved GNSS engine, triple frequency GNSS and compatibility with Trimble CenterPoint RTX correction service.
- **Enhanced resistance: tough for challenging environments.**
With a compact, ultra-rugged design, the SP100 is built to withstand challenging physical conditions, ensuring uninterrupted functionality even in dusty, wet, salty, windy, or extremely hot or cold environments.


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SP100
GNSS RECEIVER

Modern technology for every surveyor
Delivering accuracy to demanding survey projects.



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QUICK START GUIDE

SPECTRA
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SP100 GNSS RECEIVER



Battery door

Front panel

Lemo port

TNC radio antenna connection



SP100
GNSS RECEIVER

Modern technology for every surveyor

SPECTRA
GEO SPATIAL®

MORE

Time for Questions!

Remember the 5 Key Takeaways:

Tilt

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