City of Muscatine

AGENDA ITEM SUMMARY

City Council

DATE:

December 28, 2020

STAFF

Pat Lynch, City Engineer

SUBJECT

Request a Purchase Order for a Leica Solution GG04, Plus Antenna, and associated software.

EXECUTIVE SUMMARY

During the 20/21 budget process, Engineering was granted $30,000 for the purchase of a GPS RTK Rover Unit for use by the Right of Way Inspector. Staff received quotes from two different vendors and have chosen the Leica Solution GG04, Plus Antenna, and associated software.

STAFF RECOMMENDATION

Staff recommends Council approve the purchase order.

BACKGROUND/DISCUSSION

The Leica Solution GG04 will allow the Right Of Way Inspector to collect valuable data while performing his duties and incorporate it into Muscatine Area Geographic Information Consortium (MAGIC) for future use. This data will include sanitary sewer services, water services, unmarked underground private utilities encountered, geographical locations for permits pulled, and street patching locations. MAGIC is not currently staffed to send someone out to open excavations to collect the data; consequently, this information is not currently being collected. Once this information has been collected, it will be uploaded to MAGIC for use by all Departments. The original quote received from both vendors included a tablet, however after discussions with the preferred vendor, it was determined to be more beneficial to the City if the tablet was purchased separately through our Mobile Carrier.

CITY FINANCIAL IMPACT

$30,000 was budgeted for this item in the 20/21 FY budget. The amount of the Purchase Order request is $10,894.79. The large difference between the budget and actual is due to the reduction in purchasing the table as well as moving to a machine with slightly lower accuracty, less than a quarter of an inch, compared to the more accurate machine, which measures to a tenth of an inch. For the price difference of almost $20,000 we feel that we can get accurate enough readings with the less expensive unit.

ATTACHMENTS

Quotes from A&D Technical Supply (Leica) and Precision Midwest (Trimble)

QUOTE

Leica
Geosystems

Quote No.:	10064	**Prepared for**	Muscatine Power & Water
Quoted Issued	11/19/2020		3205 Cedar Street
Exp. Date:	Bid		Muscatine, IA 52761
			Mobile: 563 260 4525
			Email: myerington@mpw.org

Option B Leica Solution GG04 Plus Antenna w Zeno Mobile Software with a 1 year Basic CCP for Zeno Mobile & GG04 plus

PART #	DESCRIPTION	LIST PRICE	QTY	DISCOUNT	LIST PRICE TOTAL
GNSS ANTENNA					
867128	GG04 plus Professional	$8,250.00	1	-$825.00	$7,425.00
844306	Galileo Option for GG04/GG04 plus	$680.00	1	-$68.00	$612.00
772806	GEB212 Battery internal Li-Ion 2600mAh	$179.00	2	-$35.80	$322.20
799185	GKL311 single Charger Prof 3000	$205.00	1	-$20.50	$184.50
873933	Hard Container for Zeno GG04 plus	$245.00	1	-$24.50	$220.50
6012110	1 year GG04/GG04 plus Basic CCP	$43.50	1	$0.00	$43.50
SOFTWARE APPLICATION					
871195	ZM 'Prof' for Android phone/tablet	$1,280.00	1	-$89.60	$1,190.40
6009793	1 yr Zeno 20 / Zeno Mobile Basic CCP	$579.00	1	$0.00	$579.00
ACCESSORIES					
5125-22-FLY	Seco 2m 1.8m 1.6m GNSS Pole	$175.00	1	-$17.50	$157.50
5217-04-RED	Seco Bipod	$179.99	1	-$19.80	$160.19

Customer Price   **$10,894.79**

QUOTE

Leica
Geosystems

This quotation is subject to the following terms and conditions:

- Delivery will be made within 10 days, of receiving complete equipment order.
- Payment is due upon delivery of equipment.
  a. Payment by Check may be made out to A&D Technical Supply
  b. Payment by Credit Card over $2500.00 is subject to a 3% fee.

- All sales orders are final & non-refundable.
- The general terms and conditions of purchase apply to this quotation contract.
- This quotation may be accepted to form a binding contract upon any one of the following options:

  a. Signature below and payment to A&D Technical Supply for the items listed in this quote prior to the expiration date.
  b. Issuance of a purchase order to A&D Technical Supply referencing this quote and the terms and conditions herein prior to the expiration date above.

Muscatine Power & Water

A&D TECHNICAL SUPPLY
GEOMATIC & HDS SURVEYING DIV.
4320 SOUTH 89TH ST.
OMAHA, NE 68127
OFFICE: 402-592-4950
MOBILE: 402-871-3209
ADSURVEY@ADTECHSUPPLY.COM

QUOTE

Leica
Geosystems

Quote No.:	10060	Prepared for
Quoted Issued	09/24/2020	
Exp. Date:	Bid	

Muscatine Power & Water
3205 Cedar Street
Muscatine, IA 52761
Mobile: 563 260 4525
Email: myerington@mpw.org

Option A : Leica Solution GG04 Plus Antenna w Tab2 tablet Zeno Mobile Software with a 1 year Basic CCP for Zeno Mobile & GG04 plus

PART #	DESCRIPTION	LIST PRICE	QTY	DISCOUNT	LIST PRICE TOTAL
867128	GG04 plus Professional	$8,250.00	1	-$577.50	$7,672.50
844306	Galileo Option for GG04/GG04 plus	$680.00	1	-$47.60	$632.40
772806	GEB212 Battery internal Li-Ion 2600mAh	$179.00	2	-$35.80	$322.20
799185	GKL311 single Charger Prof 3000	$205.00	1	-$14.35	$190.65
873933	Hard Container for Zeno GG04 plus	$245.00	1	-$17.15	$227.85
6012110	1 year GG04/GG04 plus Basic CCP 1 year GG04/GG04plus Basic CCP consisting of: 1 year Customer Support.	$43.50	1	$0.00	$43.50
897432	Leica Zeno Tab 2 (Non-EU)	$1,730.00	1	-$121.10	$1,608.90
871195	ZM 'Prof' for Android phone/tablet	$1,280.00	1	-$89.60	$1,190.40
6009793	1 yr Zeno 20 / Zeno Mobile Basic CCP	$579.00	1	-$40.53	$538.47
854154	Universal Pole Mount small Tablets	$173.00	1	-$12.11	$160.89
5125-22-FLY	Seco 2m 1.8m 1.6m GNSS Pole	$175.00	1	-$8.75	$166.25
5217-04-RED	Seco Bipod	$179.99	1	-$9.00	$170.99

Customer Price   **$12,925.00**

A&D TECHNICAL SUPPLY
GEOMATIC & HDS SURVEYING DIV.
4320 SOUTH 89TH ST.
OMAHA, NE 68127
OFFICE: 402-592-4950
MOBILE: 402-871-3209
ADSURVEY@ADTECHSUPPLY.COM

QUOTE

Leica
Geosystems

Option B   Leica Solution GG04 Plus Antenna w ALGIZ RT8 tablet allowing customer to use Zeno Connect to bridge to Collector

PART #	DESCRIPTION	LIST PRICE	QTY	DISCOUNT	LIST PRICE TOTAL
867128	GG04 plus Professional	$8,250.00	1	-$825.00	$7,425.00
844306	Galileo Option for GG04/GG04 plus	$680.00	1	-$68.00	$612.00
772806	GEB212 Battery internal Li-Ion 2600mAh	$179.00	2	-$35.80	$322.20
799185	GKL311 single Charger Prof 3000	$205.00	1	-$20.50	$184.50
873933	Hard Container for Zeno GG04 plus	$245.00	1	-$24.50	$220.50
6012110	1 year GG04/GG04 plus Basic CCP	$43.50	1	-$2.18	$41.33
RT8-RF1-A00	4G/Global, BT,WLAN, camera, NFC, GPS, battery	$1,100.00	1	-$55.00	$1,045.00
RT8-2006	Algiz RT8 Copter® screen protector	$19.00	1	-$0.95	$18.05
RT8-1003	Algiz RT8 Passive holder	$48.00	1	-$2.40	$45.60
RT8-1046	Algiz RT8 Pole mount	$84.00	1	-$4.20	$79.80
5125-22-FLY	Seco 2m 1.8m 1.6m GNSS Pole	$175.00	1	-$17.50	$157.50
5217-04-RED	Seco Bipod	$179.99	1	-$18.00	$161.99

Customer Price $10,313.47

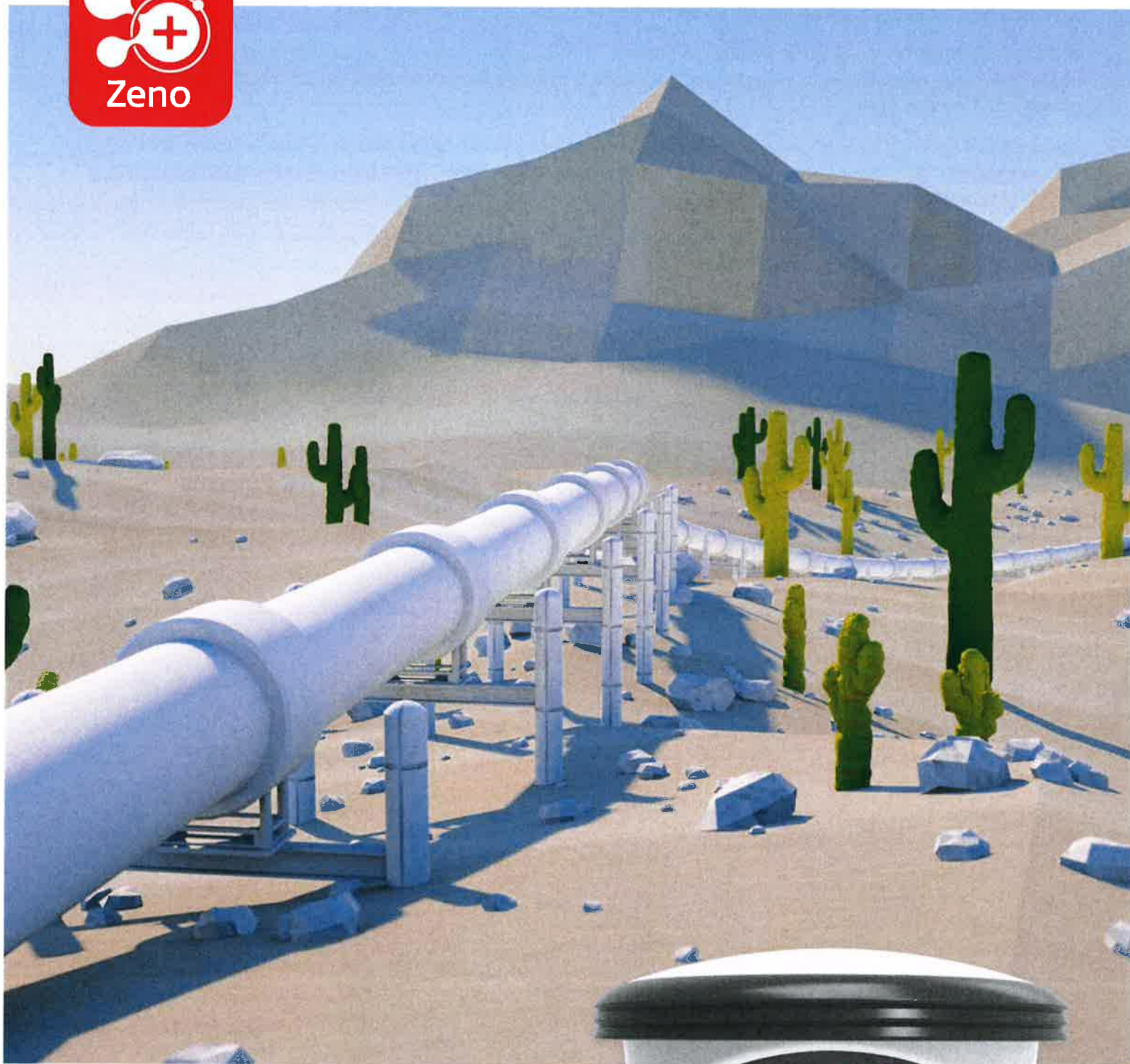**QUOTE**

Leica
Geosystems

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    a. Payment by Check may be made out to A&D Technical Supply
    b. Payment by Credit Card over $2500.00 is subject to a 3% fee.

- All sales orders are final & non-refundable.
- The general terms and conditions of purchase apply to this quotation contract.
- This quotation may be accepted to form a binding contract upon any one of the following options:

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Muscatine Power & Water

Leica Zeno GG04 plus
High accuracy everywhere

Leica Zeno GG04 plus Smart Antenna
High accuracy everywhere

Collecting high accuracy geospatial data on your smartphone or tablet has never been easier.

The latest innovation in the Leica Zeno range can pair with all existing Zeno handhelds and a wide range of Android™, iOS or Windows® smart devices, bringing cutting-edge GNSS technology and industry-leading 555 channel tracking power into the hands of all.

The rugged, flexible and easy-to-use smart antenna not only utilises RTK technology but can now apply Precise Point Positioning (PPP). This now makes real-time, high-accuracy data collection possible in the most demanding of locations without the need for a mobile data connection.

With its compact, lightweight design and IP68 durability, you can work for longer in all conditions, as the world of high accuracy mapping comes to life at your fingertips.

Smart device independence

Using the Zeno GG04 plus smart antenna with your Leica Geosystems controller or your own device is simple, regardless if it runs on Android, iOS or Windows® platforms. Now you can feel right at home while carrying out your data collection tasks. Bluetooth® connectivity ensures cable free operation and high accuracy configuration is easy with just a few clicks in the Zeno Connect application.
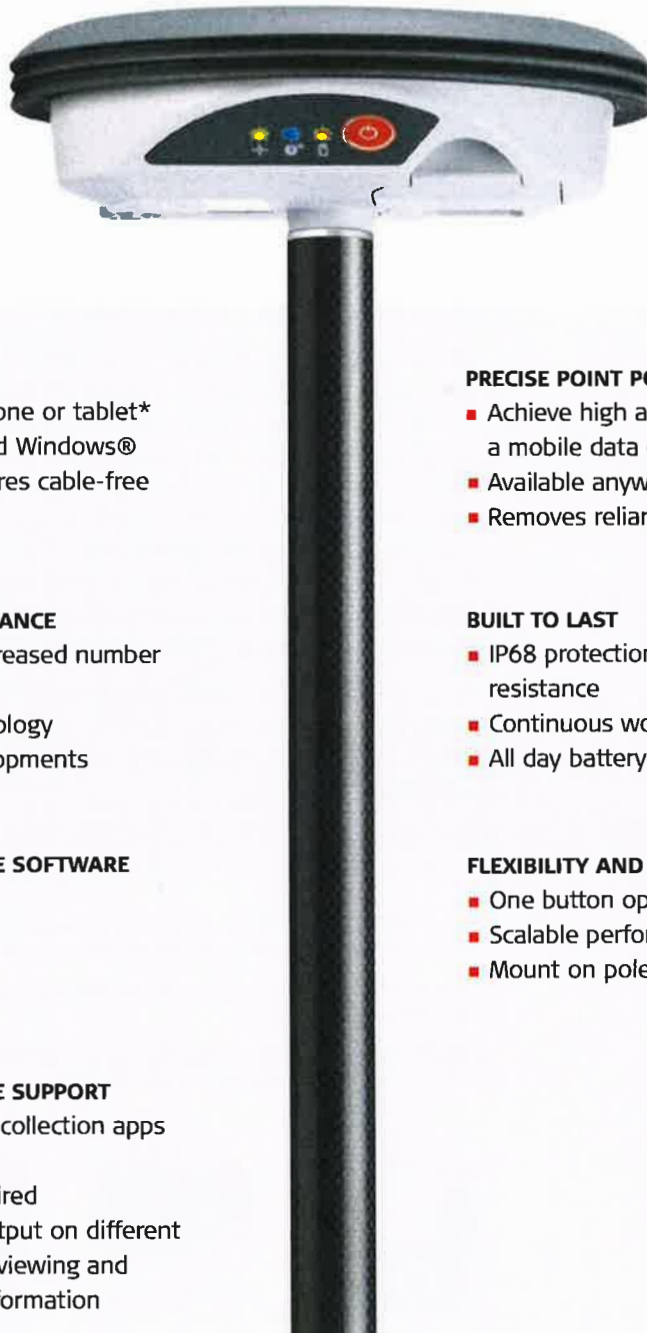
Precise Point Positioning (PPP)

PPP enables the Zeno GG04 plus to achieve high accuracy data collection without the need for a mobile data connection. PPP works by using a satellite based correction service to broadcast data directly to the GG04 plus. Corrected data is processed onboard the antenna and delivered seamlessly to your device. PPP is available anywhere in the world at any time.

Extensive software support

Not only will the Zeno GG04 plus smart antenna work with Zeno Mobile and Zeno Field software, but, with the help of Zeno Connect it will also work with other data collection apps and software. No development efforts are required to achieve centimetre accurate positioning. If required GNSS metadata can be queried additionally.

SMART DEVICE INDEPENDENCE
- Utilise your existing smartphone or tablet*
- Available for Android, iOS and Windows®
- Bluetooth® connection ensures cable-free operation

ENHANCED TRACKING PERFORMANCE
- 555 channels support an increased number of satellites
- State-of-the-art GNSS technology
- Ready for future GNSS developments

LEICA GEOSYSTEMS COMPATIBLE SOFTWARE
- Zeno Mobile
- Zeno Field, Zeno Connect
- Zeno Office
- MobileMatriX

EXTENSIVE 3ᴿᴰ PARTY SOFTWARE SUPPORT
- Use with your favourite data collection apps and software
- No development efforts required
- Provides NMEA messages output on different Bluetooth® ports to allow reviewing and storing of GNSS metadata information

PRECISE POINT POSITIONING (PPP)
- Achieve high accuracy data collection without a mobile data connection
- Available anywhere in the world, anytime
- Removes reliance on post-processing

BUILT TO LAST
- IP68 protection ensures water and dust resistance
- Continuous working in all environments
- All day battery life

FLEXIBILITY AND EASE
- One button operation
- Scalable performance tailored to your needs
- Mount on pole, backpack or vehicle

LEICA GEOSYSTEMS COMPATIBLE CONTROLLERS

ZENO 20

ZENO TAB 1

ZENO 5

Leica Geosystems – when it has to be right

Revolutionising the world of measurement and survey for nearly 200 years, Leica Geosystems is the industry leader in measurement and information technologies. We create complete solutions for professionals across the planet. Known for innovative product and solution development, professionals in a diverse mix of industries, such as surveying and engineering, building and heavy construction, safety and security, and power and plant trust Leica Geosystems for all their geospatial needs. With precise and accurate instruments, sophisticated software, and trusted services, Leica Geosystems delivers value every day to those shaping the future of our world.

Leica Geosystems is part of Hexagon (Nasdaq Stockholm: HEXA B; hexagon.com), a leading global provider of information technology solutions that drive productivity and quality across geospatial and industrial landscapes.

Swiss Technology
by Leica Geosystems

IOS is a trademark or registered trademark of Cisco in the U.S. and other countries and is used under license.

Android™ is a trademark of Google Inc.

Leica Zeno 5

Leica Zeno Connect

Leica Zeno Field & Office

Leica Geosystems AG

Leica Zeno GG04 plus
Data sheet

Zeno

Smart device independence

Using the Zeno GG04 plus smart antenna with your controller from Leica or own device is simple, regardless if it runs on Android™, iOS or Windows® platforms. Now you can feel right at home while carrying out your data collection tasks. Bluetooth® connectivity ensures cable free operation and high accuracy configuration is easy with just a few clicks in the Zeno Connect application.

Precise Point Positioning (PPP)

PPP enables the GG04 plus to achieve high accuracy data collection without the need for a mobile data connection. PPP works by using a satellite based correction service to broadcast data directly to the GG04 plus. Corrected data is processed onboard the antenna and delivered seamlessly to your device. PPP is available anywhere in the world at any time.

Extensive software support

Not only will the Zeno GG04 plus smart antenna work with Zeno Mobile and Zeno Field software, but, with the help of Zeno Connect it will also work with other data collection apps and software. No development efforts are required to achieve centimetre accurate positioning. If required GNSS metadata can be queried additionally.

- when it has to be **right**

Leica

PART OF

Technical Specifications

LEICA ZENO GG04 PLUS I GNSS TECHNOLOGY

Number of channels	555 channels (more signals, fast acquisition, high sensitivity)
Satellite signal tracking	GPS (L1, L2, L2C/L2P, L5), Glonass (L1, L2, L3), BeiDou (B1, B2, B3[1]), Galileo (E1, E5a, E5b, Alt-BOC, E6[1]), QZSS, NavIC (IRNSS, L5), SBAS (WAAS, EGNOS, MSAS, GAGAN), L-band
Real-time and post-processing	Support of real-time correction service and post-processing to achieve positioning accuracy
Output data protocols	• Windows®: NMEA[2] via Zeno Connect • Android: position provided by Location Service and NMEA[2] output possible, both via Zeno Connect • iOS: position provided by iOS Location Feature and NMEA[2] output possible (via EA protocol) via Zeno Connect
Update rate	20 Hz (0.05 sec)[3]
Post-processing accuracy static mode	Horizontal: 3 mm + 0.5 ppm (rms)[4] Vertical: 6 mm + 0.5 ppm (rms)[4]

Horizontal real-time accuracy (SBAS or external source)

SBAS, L1 only	< 0.9 m[4]
Spot Lite, PPP (Multi-frequency option needed)	< 60 cm[4] after approximately 8 minutes of converging
DGNSS, L1 only	< 40 cm[4]
Spot Prime, PPP (Multi-frequency option needed)	< 10 cm[4] after approximately 15 minutes of converging
RTK, Multi-frequency	< 1 cm + 1 ppm[4]

Vertical real-time accuracy	RTK (Multi-frequency): 2 cm + 1 ppm[4]
Real-time protocols	RTCM 2.x, RTCM 3.0, RTCM 3.1, RTCM 3.2, RTCM MSM, CMR, CMR+
Integrated real-time	SBAS[5] (EGNOS, WAAS, MSAS, GAGAN), or PPP via L-band (requires a valid Spot option)
Time for initialisation	Typically 6 sec[6]

INTERFACE & COMMUNICATION

User interface	On/Off key Status indicator (LED): satellite tracking, Bluetooth® communication and battery power
Communication port	Bluetooth® 4.1 class 1 & sealed and protected 8-pin Lemo combined USB / Serial232 port
Field controller connection	By Bluetooth® (3 ports available), RS232 or USB cable

POWER MANAGEMENT

Removable battery	GEB212 (7.4 V / 2600 mAh Li-Ion rechargeable)
Battery charging time	2 hours to full charge with GKL341
Power	Nominal 12 V DC Range 10.5 – 28 V DC
Operating time	7.5 h (RTK)[7], 10 h (GNSS only)[7]

PHYSICAL SPECIFICATIONS

Weight and dimensions	0.8 kg with all-day battery Height: 0.071 m x Diameter: 0.186 m
Proof against water, sand and dust	IP66 & IP68 (IEC60529): dust and water-resistant for all conditions: Temporary submersion into water (2 hours in 1.40 m depth) and protected against blowing rain and dust
Operating / Storage temperature range	Operation: –40 to 65 °C (–40°F to +149°F) (ISO 9022-10-08, MIL-STD-810G CHG1 Method 502.6-II & ISO 9022-11-04, MIL-STD-810G CHG1 Method 501.6-II) Storage: –40 to 80 °C (–40°F to +176°F) (ISO 9022-10-08, MIL-STD-810G CHG1 Method 502.6-I & ISO 9022-11-06, MIL-STD-810G CHG1 Method 501.6-I)
Humidity	100% (ISO9022-12-04, ISO9022-13-06, ISO9022-16-02, MIL-STD-810G CHG1 Method 507.6-I)
Drop	Withstands topple over from a 2 m survey pole onto hard surface Withstands 1 m drop onto hard surface
Vibration	Withstands strong vibration (ISO9022-36-05)

ACCESSORIES & OPTIONAL FEATURES

Accessories	• External battery charger • Backpack kit • Hard carry case • 2 meter range pole • Universal pole mounts for different sized 3rd party mobile devices
Optional field and office software	• Leica Zeno Field • Leica Zeno Mobile • Leica Zeno Connect • Leica Zeno Office and Leica Zeno Office on ArcGIS
Optional field computers	• Leica Zeno 5 • Leica Zeno Tab Android tablet or with the following 3rd party HW in combination with Leica Zeno Connect and Zeno Mobile (Android only): • Android: most phones and tablets with Android version > 4.1 • Windows®: tablets/pcs/handhelds with Windows® 10/8/7 or WEH • Apple phones and tablets

Made for
 iPhone | iPad

Swiss Technology
by Leica Geosystems

Leica Geosystems AG

Leica Zeno Tab 2
Rugged Android Tablet

Improve efficiency

The lightweight and easy to use Zeno Tab 2 allows you to work outdoors in demanding conditions. The large bright display and all-day battery allow you to work more efficiently, in all weather conditions.

Stay connected

Easily share data offline or online with WiFi and Sim card. Bluetooth® enables pairing with the Leica GG04 plus smart antenna for centimetre level positioning when used with HxGN SmartNet GNSS correction services.

Keep it simple

The Android operating system ensures easy and flexible operation. When using the Leica Zeno Mobile data collection app, the simple-to-use interface saves time in the field and professional tools help to increase your productivity.

Leica Zeno Tab 2

TECHNOLOGY

Processor and Memory	Qualcomm MSM8953 Octa-Core 2.2 GHz and 4 GB RAM
Data storage	32 GB on-board extensible with MircoSD
Operating system	Android 8.0
Google Play	Google Mobile Sevices and Google Play Store included
Screen	8" 1280 x 800 VGA capactive sunlight readable touch screen with 400 Nit brightness
Integrated camera	13 megapixel rear and 5 megapixel front camera
Internal GNSS	U-blox M8N GPS/Glonass/Beidou
I/O	USB 2.0 Type C
Additional sensors	Gryroscope, Compass, Accelerometer, Barometer

COMMUNICATION

GSM	GSM, WCDMA, LTE
Bluetooth®	4.1
Wi-Fi	802.11 a/b/g/n/ac
NFC	Included

POWER MANAGEMENT

Battery	Lithium-ion 8200 mAh
Operating time	Up to 15 hours

PHYSICAL SPECIFICATIONS

Size	242 mm x 152 mm x 17.8 mm
Weight	618 g
Water and dust	IP67
Operating temperature range	-20°C to 60°C
Storage temperature range	-40°C to 70°C
Drop	1.2 m drop resistant
MIL-STD	MIL-STD-810G MIL-STD-461F

ACCESSORIES AND OPTIONAL FEATURES

Accessories	Pole holder
Field Software	Leica Zeno Mobile, Leica Zeno Connect
GNSS antenna	Leica GG04 plus

Technology Integrations

HxGN SmartNet

HxGN SmartNet transforms the world's largest reference network into a precise positioning service. Pair the Leica Zeno Tab 2 with the Leica GG04 plus smart antenna and connect to HxGN SmartNet GNSS correction services to enable up-to one centimetre positioning in real-time, allowing for faster and more accurate data collection in the field.

Leica Geosystems AG
Heinrich Wild Strasse

Leica Zeno Mobile
Smart Positioning

Zeno Mobile
with Smart Positioning

Satellite signals

HxGN SmartNet
no mobile internet connection

Raw data logging

Always the best accuracy

Zeno Mobile's innovative Smart Positioning ensures that you will always receive the best positional accuracy. Depending on the existing conditions and available services, Zeno Mobile selects the optimal correction source – from RTK to Post Processing.

Automatic Post Processing

Revival of GNSS Post Processing! Never worry about the loss of mobile coverage and RTK again. Through Zeno Mobile's Smart Positioning, always have highly accurate coordinates with HxGN SmartNet's cloud post processing service.

Ultimate simplicity

Post Processing – the Zeno Mobile way. Expertise in GNSS post processing is not required. Corrections are performed directly in Zeno Mobile without the need for additional desktop software.

leica-geosystems.com

- when it has to be **right**

Leica

Smart Positioning

Zeno Mobile is Leica Geosystem's easy-to-use data collection app available for Android™ phones and tablets.

Concept

- Easy to use surveying app for utility workers with limited surveying knowledge
- High accuracy measurements provided with the reliability and accuracy of the world's largest reference station network – HxGN SmartNet

Everyday Challenges

- Access to mobile networks for the use of RTK is not always possible in remote or rural areas
- Precise Point Positioning (PPP) services can be used to overcome this but an extra license is required
- Post Processing is a long-established method of improving accuracy but it is complicated and time consuming

Democratise Post Processing through simplification

How does the new Post Processing concept work?

- Smart Positioning is included in both Zeno Mobile Standard and Professional versions
- Once activated, Zeno Mobile automatically uses the best method of improving accuracy depending on the conditions

Example Workflow

1. Mobile data connection is lost while field crew is working in a remote area but continues with data collection as per normal
2. Zeno Mobile continuously logs raw satellite information in the background for later use
3. When mobile data connection is restored, Zeno Mobile automatically sends the raw data to HxGN SmartNet's cloud post processing service
4. Post processing is automatically carried out in the cloud and the improved positions are sent back to Zeno Mobile
5. Zeno Mobile automatically updates the features with the improved, more accurate positions

This unique service takes away the need for extensive post processing know-how and because the post processing is performed on the mobile device, desktop post processing software is also no longer required. Smart Positioning is available with Zeno Mobile and a valid HxGN SmartNet RTK GIS Unlimited subscription.

Note: Smart Positioning is available only in countries offering HxGN SmartNet. Check coverage at **https://hxgnsmartnet.com/coverage**

Technology Integrations

HxGN SmartNet

HxGN SmartNet transforms the world's largest reference station network into a high accuracy positioning service provider. Pair the Leica Zeno Tab 2 with the Leica GG04 plus smart antenna and connect to HxGN SmartNet GNSS correction services to enable up-to one centimetre positioning in real-time, allowing for faster and more accurate data collection in the field.

Leica Geosystems AG
Heinrich-Wild-Strasse

Quote: 2532096000068049832

Precision Midwest
12360 S. Industrial Drive East
Plainfield, IL 60585

Jesse Kinzenbaw
515-231-2073

PRECISION MIDWEST

PRECISION MIDWEST

Bill To
MAGIC Group
Mark Yerington
3205 Cedar Street,
Muscatine, Iowa, 52761-2287

Ship To
MAGIC Group
Mark Yerington
3205 Cedar Street,
Muscatine, Iowa, 52761-2287

Part Number/Description	Qty.	List Price	Discount	Amount
R2-101-00 Trimble R2, single receiver	1	$ 2,500.00	$ 250.00	$ 2,250.00
R2-CFG-001-43 Trimble R2 Configuration Level - Centimeter mode	1	$ 9,500.00	$ 950.00	$ 8,550.00
ROD-BDL-GPS-2 Rod/Bi-Pod/Bag - Bundle - PMW	1	$ 565.00	$ 56.50	$ 508.50
117057 Trimble TDC600 Worldwide (excluding Russia)	1	$ 1,495.00	$ 149.50	$ 1,345.50
106735-00 Trimble Accessory - Range Pole Bracket	1	$ 155.00	$ 15.50	$ 139.50
101071-00-01 Trimble Geospatial Accessory - Power Supply and Power Cord for Dual Battery Charger (North America)	1	$ 95.00	$ 9.50	$ 85.50
171082-00 Trimble GNSS Accessory - Transport Case for TSC7 and R2/R8s/R10	1	$ 495.00	$ 49.50	$ 445.50
PMA-AND-YR-NR Penmap for Android Subscription Per Year (Stocking, expires 12 mo from invoice date)	1	$ 600.00	$ 0.00	$ 600.00
ADLS-GNSS2-BNDLE-STK Trimble Protected Premium - Survey R9S, R2 GNSS, 5 Years w/Firmware	1	$ 1,536.50	$ 0.00	$ 1,536.50

Sub Total		**$ 15,461.00**
Discount		$ 0.00
Sales Tax		$ 0.00

Grand Total	**$ 15,461.00**

Valid Until: Dec 31, 2020

Customer Signature: {{Signature*}}

Company:

Customer Name:

PO# / Job#:

Job Title:

Trimble.

Payment Option:
(Bill Account / COD / Finance)

Trimble.

Quote: 2532096000068049589

Precision Midwest
12360 S. Industrial Drive East
Plainfield, IL 60585

Jesse Kinzenbaw
515-231-2073

PRECISION MIDWEST

PRECISION MIDWEST

Bill To
MAGIC Group
Mark Yerington
3205 Cedar Street,
Muscatine, Iowa, 52761-2287

Ship To
MAGIC Group
Mark Yerington
3205 Cedar Street,
Muscatine, Iowa, 52761-2287

Part Number/Description	Qty.	List Price	Discount	Amount
R12i-101-60-01 Trimble R12i, Model 60, with Radio	1	$ 8,000.00	$ 960.00	**$ 7,040.00**
R12i-CFG-001-40 Trimble R12i Configuration Level - R12i Base and Rover Mode	1	$ 20,500.00	$ 2,460.00	**$ 18,040.00**
ROD-BDL-GPS-2 Rod/Bi-Pod/Bag - Bundle - PMW	1	$ 565.00	$ 56.50	**$ 508.50**
117057 Trimble TDC600 Worldwide (excluding Russia)	1	$ 1,495.00	$ 149.50	**$ 1,345.50**
106735-00 Trimble Accessory - Range Pole Bracket	1	$ 155.00	$ 15.50	**$ 139.50**
PMA-AND-YR-NR Penmap for Android Subscription Per Year (Stocking, expires 12 mo from invoice date)	1	$ 600.00	$ 0.00	**$ 600.00**
ADLS-GNSS3-BNDLE-STK Trimble Protected Premium - Survey R10-2, R12 GNSS, 5 Years w/Firmware	1	$ 2,096.50	$ 0.00	**$ 2,096.50**

Sub Total	**$ 29,770.00**
Discount	$ 0.00
Sales Tax	$ 0.00

Grand Total	**$ 29,770.00**

Valid Until: Dec 31, 2020

Customer Signature: {{Signature*}}

Company:

Customer Name:

PO# / Job#:

Job Title:

Payment Option:
(Bill Account / COD / Finance)

Trimble.

PRECISION MIDWEST

Precision Midwest and Trimble are now offering a all new Trimble Protected Premium warranty program.

PROGRAM OVERVIEW

The new Trimble Protected Premium Plan is a multi-year protection plan that supplements the factory warranty to provide you with FIVE YEARS of coverage for drops, falls, liquid spills, broken screens, wear and tear, environmental, surge protection and similar types of damage resulting from an accident! This accidental damage coverage is in addition to instrument failures. Trimble will either repair the OR replace the instrument with a new or refurbished instrument*. Repair vs. Replace is at Trimble's discretion, utilizing a predetermined replace cost threshold. Additionally, Trimble Protected Premium Plan provides FIVE YEARS of software and firmware for eligible receivers and controllers.

TRIMBLE FACTORY WARRANTY COVERAGE

- Hardware Defects
- Parts and Labor
- Transferable Ownership
- Firmware Updates

TRIMBLE EXTENDED WARRANTY COVERAGE

- Hardware Defects
- Parts and Labor
- Transferable Ownership
- Firmware Updates

*Wear and tear, environmental and surge protection along with 3 clean and calibration on robotic total stations

Trimble Protected Premium Warranty Coverage

PLAN PROTECTS A FULL FIVE YEARS NO MATTER HOW LONG YOUR FACTORY WARRANTY IS; THAT'S BEING TRIMBLE PROTECTED!

Standard extended warranty covers wear and tear, environmental and surge protection along with 3 clean and calibrations for robotic total stations.

1 year factory warranty includes accidental damage (year 1)	Trimble protected premium includes accidental damage (year 2)	Trimble protected premium includes accidental damage (year 3)	Trimble protected premium includes accidental damage (year 4)	Trimble protected premium includes accidental damage (year 5)
2 year factory warranty includes accidental damage (year 1)	2 year factory warranty includes accidental damage (year 2)	Trimble protected premium includes accidental damage (year 3)**	Trimble protected premium includes accidental damage (year 4)**	Trimble protected premium includes accidental damage (year 5)**
3 year factory warranty includes accidental damage (year 1)	3 year factory warranty includes accidental damage (year 2)	3 year factory warranty includes accidental damage (year 3)	Trimble protected premium includes accidental damage (year 4)	Trimble protected premium includes accidental damage (year 5)

** Don't forget annual clean & calibration service in year three, four, and five is INCLUDED for Trimble Total Stations!