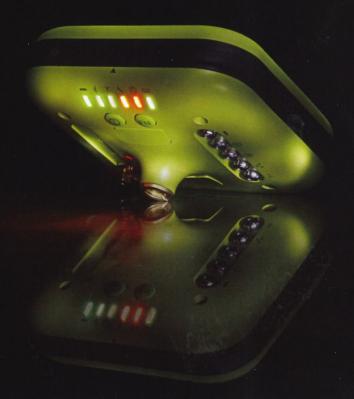


# TRIUMPH 1 TRIUMPH - 4X 216 channels

# JAVAD ArcPad Extension in focus



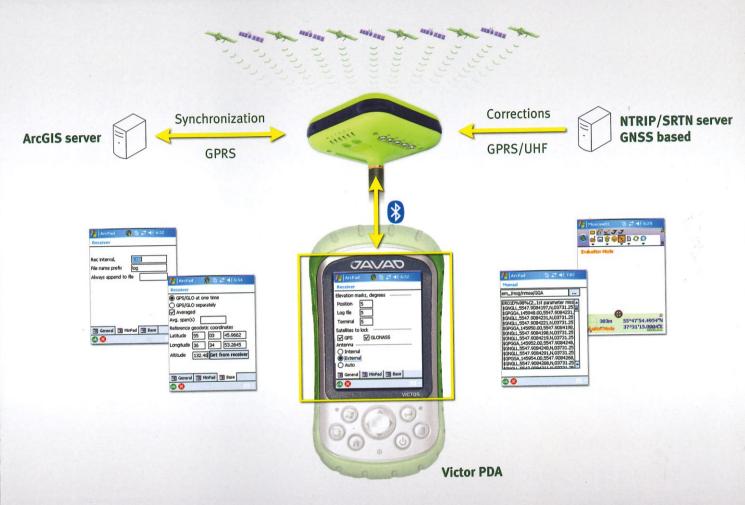


### JAVAD ArcPad Extension

In response to a long-standing request from ESRI, JAVAD GNSS is pleased to announce that ArcPad users can now communicate directly with ESRI ArcGIS Server via our Triumph receiver so no additional devices (external radio) or settings are required. Real-time centimeter-level positioning is now possible in the field for ArcPad users.

 JAVAD ArcPad Extension enhances the spectrum of ArcPad's surveying capabilities by adding state of the art JAVAD GNSS solutions. JAVAD ArcPad Extension provides a full range of functions to control the GNSS receiver and manage the surveying process.

JAVAD ArcPad Extension establishes a connection to the receiver via serial, USB, or Bluetooth and configures
the base station parameters that govern the RTK and UHF radio setups, and GSM modem settings.



Quality control of real-time positioning results are assured in the field. The JAVAD GNSS Victor PDA displays
the status/process progress continuously via the Bluetooth connection to the receiver.

· Advanced RTK accuracy and ArcPad vector/raster map visualization capabilities deliver reliable object

positioning and a new level of job control in the field.

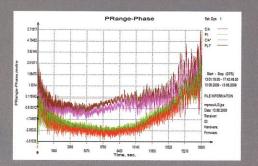
 JAVAD ArcPad Extension is an optimal ESRI-compatible solution for a wide variety of civil engineering or cartography tasks where centimeter level accuracies are required. At the core of this solution lies highly integrated JAVAD GNSS technology optimized for use with ESRI's GIS software.

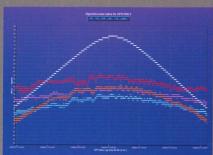
#### Javad eliminates GPS SVN 49 anomalies

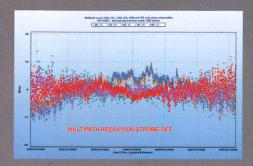
The anomalies in the recently launched SVN49(PRN1) was a chance to demonstrate the advanced multipath reduction capabilities of JAVAD GNSS Triumph technologies.

Figure below shows SNV49 (PRN1) code-minus-phase plot for usual correlator (magenta - C/A code, brown - P/L1 code) and for "mpnew" (red - C/A code, green - P/L1 code), which shows almost all anomalies and satellite multipath are removed.

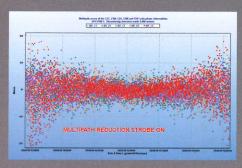
Figures below also describe the multipath performance of a pair of Triumph-1 receivers we ran in a zero baseline test. The left figure depicts the code multipath errors of the GPS PRN1 pseudoranges measured by the receiver with the 'normal' strobe enabled. The right figure shows the code multipath as estimated for the second receiver, where the optimized multipath reduction strobe was enabled. The center screenshot displays the signal-to-noise ratios and elevation angles of GPS SVN49 over the time interval analyzed.

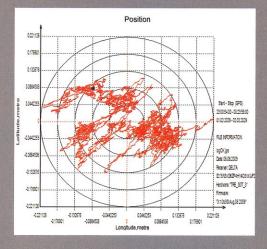






The optimized multipath mitigation technique implemented in our Triumph technology allows nearly complete compensation for the satellite-induced multipath anomalies that would otherwise badly affect GPS SVN49 measurements. The same multipath reduction capabilities which removed the SVN49 multipath anomalies can remove the multipath effects which are a major source of error in precision positioning.





### JAVAD GNSS receivers tracked all current and future Galileo satellite signals

JAVAD GNSS receivers successfully tracked all Galileo satellites from Spirent simulator and produced Galileo-only and triple satellite (Gps+Glonass+Galileo) positions. Up to 27 satellites were tracked simultaneously.

The experiments were performed jointly by Spirent and JAVAD GNSS.

Sat	(Fn)	El	Az	C/A	P1	P2	TC	Count	F_C/A	F_P1	F_P2	Use
Gps	1	29		46	0	0	63	3818	0xA153			Y( 0
Gps	3	24		47	0	0	86	4986	0xA153			Y ( 0
Gps	6	27		46	0	0	86	4986	0xA153			Y( 0
Gps	11	14		44	0	0	77	4622	0xA153			Y( 0
Gps	14	20		45	0	0	86	4986	0xA153			Y( 0
Gps	16	78		49	0	0	86	4986	0xA153			Y( 0
Gps	18	7		47	0	0	86	4986	0xA153			Y( 0
Gps	19	10		48	0	0	86	4986	0xA153			Y( 0
Gps	20	7		47	0	0	4	272	0xA153			Y( 0
Gps	22	38		47	0	0	86	4986	0xA153			Y( 0
Gps	31	23		45	0	0	86	4986	0xA153			Y( 0
Gln	6(-2)	24		51	0	0	87	4986	0xA153			Y( 0
Gln	7 (-1)	28		51	0	0	87	4986	0xA153			Y( 0
Gln	9(1)	21		50	0	0	87	4986	0xA153			Y( 0
Gln	10(2)	75		52	0	0	87	4986	0xA153			Y( 0
Gln	11(3)	44		50	0	0	81	4911	0xA153			Y ( 0
Gal	71	18		50	0	0	85	4986	0xA153			Y( 0
Gal	78	18		50	0	0	81	4892	0xA153			Y ( 0
Gal	79	30		49	0	0	85	4986	0xA153			Y( 0
Gal	83	23		48	0	0	59	3572	0xA153			Y( 0
Gal	84	70		49	0	0	86	4986	0xA153			Y( 0
Gal	85	58		50	0	0	84	4986	0xA153			Y( 0
Gal	86	13		49	0	0	86	4986	0xA153			Y( 0
Gal	89	33		50	0	0	85	4986	0xA153			Y( 0
Gal	90	35		51	0	0	86	4986	0xA153			Y( 0
Gal	91	11		51	0	0	86	4986	0xA153			Y( 0
Gal	97	8		50	0	0	29	1742	0xA153			Y( 0



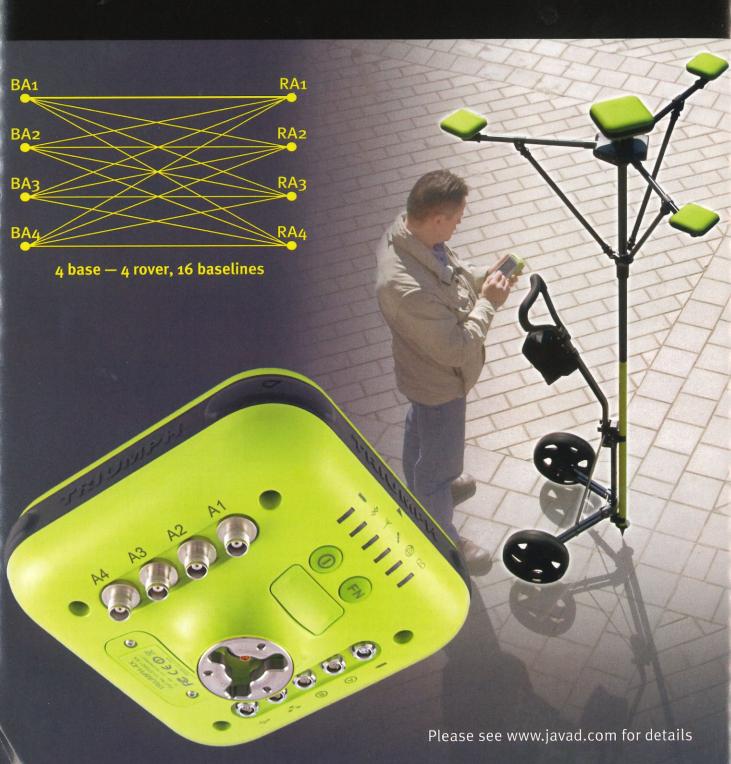
### GPS + GLONASS + Galileo

# TRIUMPH 1



### 4x4... ALL WILL DRIVE... RTK!

## TRIUMPH-4x



#### Software solutions for all tasks

#### **lustin**

A comprehensive Survey and GIS software

Justin has integrated native tools to use ESRI or MapInfo cartography windows.

It can import data files as well as whole folders. Justin employs special technique to process high rover data rates (up to 100 Hz) using low base data rates. Other features include single epoch static solution, manual postprocessing with time line chart, using vertical profile to filter out suspected data and scientific data analysis and viewer.

#### Victor

Victor is pre-loaded with our Tracy field software. When turned on, Victor automatically connects to TRIUMPH-1, TRIUMPH-4X or GISmore via its internalBluetoothandguidesyouthroughfield operations. It manages the GNSS receiver and modem operations automatically.

- Lightweight (17 ounces; 482 grams) magnesium case with easyto-grip over-molding
- Operating temperature -22°F to 122°F (-30°C to 50°C)
- Connectivity via built in Bluetooth, USB Host and Client, plus 9-pin RS-232 and optional WiFi and Modems
- · Rechargeable, field replaceable, Li-Ion battery It operates for more than 20 hours on one charge (3 to 5 hours of charging time)

#### AC 3:51P Exit Inverse Traverse Intersection Stake Out Horizontal 7 1 54 Fix (1) 100%

Giodis

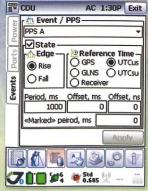
**Full-featured office** 

post-processing software

Support for survey and stakeout projects



Static, Fast Static and Stop&Go surveying



Configuration of all hardware

#### Tracy

#### A versatile and powerful field software

Software for Windows Mobile OS to control receivers, automated GNSS post processing surveying tasks (Static, Fast Static, Stop&Go. Data Acquisition), and to perform RTK survey and stakeout tasks.

#### Other Receivers



#### **ALPHA**

- INTERNAL BATTERY
- CHARGER
- GSM
- BLUETOOTH

FOR: TR-G3, TR-G2T, TR-G3T



#### Front panel connectors:

Power Input + serial port A + USB + Antenna

#### **Back panel connectors:**



Can have up to 3 connectors of 1-PPS · Event Marker · IRIG · GSM Antenna (without Bluetooth antenna).

When Bluetooth antenna is installed only one extra connector can be installed.

Example 1: BT Antenna + GSM Antenna Example 2: 1-PPS output + Event Marker + GSM Antenna

#### DELTA

FOR: TRE-G2T, TRE-G3T, Duo-G2, Duo-G2D, QUATTRO-G3D



#### Front panel connectors:

Option 1: Power Input + Serial A + Serial B + Serial C + Antenna



Option 2: Power Input + USB + Serial A + Serial C + Antenna

Options 3: Power Input + USB + Serial A + Serial C + Ethernet



#### **Back panel connectors:**

Can have up to 4 connectors of 1-PPS A • 1-PPS B • Event A • Event B • Antenna • CAN · IRIG B

Example: 1-PPS A + 1-PPS B + Event A + Event B



#### **SIGMA**

- INTERNAL BATTERY
- CHARGER
- Modem
- GSM
- BLUETOOTH



#### Front panel connectors:

Can have Power Input · Second Power Input · USB · Serial A · Serial B or C · Ethernet

and up to 4 connectors of 1-PPS A • 1-PPS B · Event A · Event B · Antenna · CAN · IRIG RS422



#### **Back panel connectors:**

Can have SIM door and GSM Antenna connector and up to 4 connectors of 1-PPS A-1-PPSB-EventA-EventB-Antenna-IRIG-Modem Antenna · Bluetooth Antenna

Example: GSM Antenna + SIM door + 1-PPS A + 1-PPS B + Event A + Modem Antenna



FOR: TRE-G2T, TRE-G3T, Duo-G2, Duo-G2D, QUATTRO-G3D

