Mapping and GIS System Components

HOW TO CHOOSE: To choose the components of a mapping and GIS system, first consider the accuracy level required by your GIS. Then determine whether your crews need real-time accuracy while in the field. Once you've decided on the field computer that meets your requirements, you can choose supported field and office software to suit your needs. Use the table below to put together a system that's optimized for your working environment. For detailed specifications refer to the relevant datasheet.

FIELD COMPUTERS WITH GPS	GeoXH™ handheld 2008 series	GeoXT™ handheld 2008 series	GeoXM™ handheld 2008 series	Trimble® Nomad™ G series	Trimble Recon® GPS XC edition	Juno™ series	Trimble Yuma™ Rugged Tablet Computer
Accuracy: post-processed	10 / <30 cm*	<1 m	1–3 m	2–5 m	2–5 m	2–5 m	2–5 m
Accuracy: real-time	10 / <30 cm*	<1 m	1–3 m	2–5 m	N/A	2–5 m	2–5 m
H-Star™ technology-capable	Yes	No	No	No	No	No	No
EVEREST™ multipath rejection	Yes	Yes	No	No	No	No	No
Integrated GPS and field computer	Yes			Yes	Yes	Yes	Yes
Integrated SBAS	Yes			Yes (WAAS)	No	Yes	Yes (WAAS)
Integrated beacon	Optional Bluetooth® Beacon receiver			No	No	No	No
Integrated OmniSTAR	No			No	No	No	No
NMEA output	Yes*			Yes	Yes	Yes	Yes
RTCM input	Yes			No	No	No	No
Operating system	Windows Mobile® 6			Windows Mobile 6	Windows Mobile 6	Windows Mobile 6.1	Windows Vista® Business
Processor	520 MHz XScale processor			806 MHz Xscale processor	400 MHz XScale processor	533 MHz Samsung processor	1.6 GHz Intel Atom processor
Memory (RAM)	128 MB			128 MB	64 MB	128 MB	1 GB DDR2
Screen size	8.9 cm / 3.5"			8.9 cm / 3.5"	8.9 cm / 3.5"	8.9 cm / 3.5"	17.8 cm / 7"
Screen details	Portrait TFT color touch screen 480 x 640 pixels (VGA)			Portrait TFT color touch screen 480 x 640 pixels (VGA)	Portrait TFT color touch screen 240 x 320 pixels (QVGA)	Portrait TFT color touch screen 240 x 320 pixels (QVGA)	Landscape color touch screen 1024 x 600 pixels (WSVGA)
Data storage	1 GB			6 GB	256 MB	128 MB	32 GB
CompactFlash slots	0			1 (800GL and 800GX)	1	0	0
SD (Secure Digital) slots	1 (SD / SDHC)			1 (SD / SDIO)	0	1 (microSD / microSDHC)	1 (SD / SDIO)
Alphanumeric data entry	Soft input panel (SIP) on screen keyboard, Transcriber handwriting recognition			Soft input panel (SIP) on screen keyboard, Transcriber handwriting recognition, Numeric keypad	Soft input panel (SIP) on screen keyboard, Transcriber handwriting recognition	Soft input panel (SIP) on screen keyboard, Transcriber handwriting recognition	Soft input panel (SIP) on screen keyboard, Transcriber handwriting recognition, Optional keyboard accessory
Integrated Barcode scanner	No			Yes (800GLE and 800GXE)	No	No	No
Integrated Bluetooth	Yes			Yes	Yes	Yes	Yes
Integrated wireless LAN	Yes			Yes	Yes	Yes	Yes
Integrated cellular modem	No			Yes (800GX, 800GXC, and 800GXE)	No	Yes (Juno SC only)	No (can be added via ExpressCard 34 mm slot)
Integrated camera	No			Yes (Except 800GL and 800GX)	No	Yes	Yes (2)
Weight	0.80 kg / 1.76 lbs			0.56 kg / 1.2 lbs	0.58 kg / 1.28 lbs	0.24 kg / 0.54 lbs	1.4 kg / 3.1 lbs
Battery life	8.5 hours: Internal GPS, and backlight	10.5 hours: Internal GPS, and backlight	10.5 hours: Internal GPS, and backlight	15 hours	8 hours	8 hours: Internal GPS, and backlight	8 hours
Ruggedness	Withstands 0.9 m / 3 ft drop			Withstands 1.2 m / 4 ft drop	Withstands 1.2 m / 4 ft drop	Durable, tumble tested 100 x 50 cm (1.64 ft) drop	Withstands 1.2 m / 4 ft drop
Environmental	Dust-proof and resistant to heavy wind-driven rain per IP 65 standard			IP67 sealed against accidental immersion in water	IP67 sealed against accidental immersion in water	N/A	IP67 sealed against accidental immersion in water
Operating temperature	–20 °C to 60 °C / –4 °F to 140 °F			–30 °C to 60 °C / –22 °F to 140 °F	–10 °C to 50 °C / 14 °F to 122 °F	0 °C to 60 °C / 32 °F to 140 °F	–30 °C to 60 °C / –22 °F to 140 °F

GPS RECEIVERS	GPS Pathfinder® ProXRT receiver	GPS Pathfinder ProXH™ receiver	GPS Pathfinder ProXT™ receiver	GPS Pathfinder XC receiver
Accuracy: post-processed	10 / 20 cm*	20 / 30 cm*	<1 m	2–5 m
Accuracy: real-time	10 / 30 cm*	<1 m	<1 m	N/A
H-Star technology-capable	Yes	Yes	No	No
GLONASS-capable	Yes (optional)	No	No	No
EVEREST multipath rejection	Yes	Yes	Yes	No
Integrated GPS receiver and antenna	No, Zephyr Model 2 antenna	Yes	Yes	Yes
Integrated SBAS	Yes	Yes	Yes	No
Integrated beacon	Optional Bluetooth Beacon receiver	Optional Bluetooth Beacon receiver	Optional Bluetooth Beacon receiver	No
Integrated OmniSTAR	Yes (VBS, XP, or HP capable)	No	No	No
NMEA output	No	Yes	Yes	Yes
RTCM input	Yes	Yes	Yes	No
Integrated Bluetooth	Yes (cabled connection for backpack configuration is recommended)	Yes	Yes	No
Weight	1.55 kg / 3.42 lbs: Includes GPS receiver and internal battery	0.53 kg / 1.16 lbs: Includes integrated GPS receiver, antenna, and battery	0.53 kg / 1.16 lbs: Includes integrated GPS receiver, antenna, and battery	34 g / 1.2 oz: Includes integrated GPS receiver and antenna
Battery life	13 hours	12 hours (8 hours with Zephyr™ antenna): Includes GPS and Bluetooth	12 hours: Includes GPS and Bluetooth	N/A: Powered by field computer
Ruggedness	Withstands 1 m / 3.28 ft drop	Withstands 1.22 m / 4 ft drop	Withstands 1.22 m / 4 ft drop	N/A
Environmental	IP67 for submersion to depth of 1 m / 3.28 ft	Wind-driven rain and dust resistant to IP54 standard	Wind-driven rain and dust resistant to IP54 standard	5 to 95 percent humidity, non-condensing
Operating temperature	–20 °C to +60 °C / –4 °F to 140 °F	–20 °C to 60 °C / –4 °F to 140 °F	–20 °C to 60 °C / –4 °F to 140 °F	–10 °C to 50 °C / 14 °F to 122 °F

** Refer to datasheet for full details.*

FIELD COMPUTERS	Trimble Recon handheld	Trimble Ranger™ handheld
		
Operating system	Windows Mobile 6	Windows Mobile 5.0
Processor	400 MHz XScale processor	516 MHz XScale processor
Memory (RAM)	64 MB	128 MB
Screen size	8.9 cm / 3.5"	9.7 cm / 3.8"
Screen details	Portrait TFT color touch screen 240 x 320 pixels (QVGA)	Landscape TFT color touch screen 320 x 240 pixels (QVGA)
Data storage	256 MB	512 MB
CompactFlash slots	2	2
SD (Secure Digital) slots	0	1 (SD / SDIO)
Alphanumeric data entry	Soft input panel (SIP) on screen keyboard, Transcriber handwriting recognition	57 keys including full alphanumeric keypad and Soft input panel (SIP) on screen keyboard, Transcriber handwriting recognition
Integrated Bluetooth	Yes	Yes
Integrated Wireless LAN	Yes	Yes
Weight	0.49 kg / 1.31 lbs: Includes integrated battery	0.95 kg / 2.1 lbs: Includes integrated battery
Battery life	12–16 hours with default display light settings	30 hours in normal use
Ruggedness	Withstands 1.2 m / 4 ft drop	Withstands 1.2 m / 4 ft drop
Environmental	IP67 sealed against accidental immersion in water	IP67 sealed against accidental immersion in water
Operating temperature	–30 °C to 60 °C / –22 °F to 140 °F	–30 °C to 60 °C / –22 °F to 140 °F

FIELD SOFTWARE	TerraSync™ Standard edition software	TerraSync Professional edition software	Trimble GPScorrect™ extension	Trimble GPS Analyst™ extension
Data collection	Yes	Yes	Yes	Yes
Data maintenance	No	Yes	Yes	Yes
Code phase data collection	Yes	Yes	Yes	Yes
H-Star data collection	Yes	Yes	Yes	Yes
Carrier phase data collection	Yes	Yes	No	No
RTK data collection	No	Yes	No	No
Navigation	Yes	Yes	No	Yes
Customization	No	No	Available via ESRI ArcPad	Available via ESRI ArcObjects
Data storage format	Trimble SSF	Trimble SSF	ESRI ArcPad Shapefile or AXF file and Trimble GPScorrect SSF	Personal Geodatabase
Field devices	Windows® PC, Windows Mobile version 6, 5.0, and 2003 devices, including all current Trimble Mapping & GIS handhelds	Windows PC, Windows Mobile version 6, 5.0, and 2003 devices, including all current Trimble Mapping & GIS handhelds	ESRI ArcPad supported field devices, including all current Trimble Mapping & GIS handhelds	Windows PC
Supported GPS receivers	All current Trimble Mapping & GIS GPS receivers and handhelds	All current Trimble Mapping & GIS GPS receivers and handhelds, plus Trimble 5800, Trimble R8, and Trimble R8 GNSS receivers	All current Trimble Mapping & GIS GPS receivers and handhelds	All current Trimble Mapping & GIS GPS receivers and handhelds plus NMEA-compliant GPS receivers, and any GPS receiver with a supported driver that enables the receiver to work with the Trimble GPS Analyst extension
Coordinate system support	Latitude/Longitude (WGS 84), U.S. State Plane 27 (NADCON - Conus), U.S. State Plane 83 (NAD - Conus), UTM, and hundreds of additional systems are supported	Latitude/Longitude (WGS 84), U.S. State Plane 27 (NADCON - Conus), U.S. State Plane 83 (NAD - Conus), UTM, and hundreds of additional systems are supported	ESRI ArcPad projection engine	ESRI ArcGIS projection engine
External sensor support	No	Yes	No	No
Laser rangefinder support	No	Yes	Yes	No
IMS support	No	Yes	Yes	Yes
Background layers	No	MrSID (SID), JPEG (JPG) and JPEG2000 (JP2 and J2C), ECW, Bitmap (BMP), TIFF (TIF), ESRI Shapefile (SHP), Trimble SSF (SSF)	ESRI ArcPad supported vector and raster formats	ESRI ArcGIS supported vector and raster formats
Simultaneous feature collection	No	No	No	Yes
Offsets	Yes	Yes	Yes	Yes, for line and polygon features
Advanced GPS data symbology	No	No	No	Yes
Mission planning	Yes	Yes	Yes	Download from www.trimble.com/planningsoftware.shtml
VRS support	Yes	Yes	Yes	Yes

OFFICE SOFTWARE	GPS Pathfinder Office software	Trimble GPS Analyst extension
Differential correction	Code phase, carrier phase, and H-Star processing	Code phase and H-Star processing
ShapeCorrect	Yes	Yes
Batch processing	Yes	No
Coordinate system support	Latitude/Longitude (WGS 84), U.S. State Plane 27 (NADCON - Conus), U.S. State Plane 83 (NAD - Conus), UTM, and hundreds of additional systems are supported	ESRI ArcGIS projection engine
Data export	AutoCAD DXF, dBASE, ESRI Shapefile, MapInfo MIF, Microsoft® Access MDB, MicroStation DGN, configurable ASCII, and additional formats are supported	Trimble SSF, Trimble Data Dictionary File (DDF), and additional export formats supported in ESRI ArcGIS software
Data import	AutoCAD DXF, dBASE, ESRI Shapefile, MapInfo MIF, Microsoft Access MDB	Trimble SSF, schema from Trimble DDF, ESRI ArcPad Shapefile or AXF file and Trimble GPScorrect SSF
Data dictionary creation	Yes	Create feature class schema
Data storage format	Trimble SSF	Personal Geodatabase
Customization	Automation interfaces from Differential Correction and Export utilities only	Available via ArcObjects
Map display/editing	Yes	ESRI ArcGIS map and editing engines
Advanced GPS data symbology	No	Yes
Feature rebuild	No	Yes
Feature validation	No	Yes
Mission planning	Download from www.trimble.com/planningsoftware.shtml	Download from www.trimble.com/planningsoftware.shtml
Field software support	TerraSync software (Standard or Professional), Trimble GPScorrect extension for ESRI ArcPad, and applications developed with the GPS Pathfinder Tools Software Development Kit (SDK)	Trimble GPS Analyst extension field tools, TerraSync software (Standard or Professional), Trimble GPScorrect extension for ESRI ArcPad, and applications developed with the GPS Pathfinder Tools Software Development Kit (SDK)

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