

GPS-Aided
Inertial
Navigation

INS-DM

INS-BM





The **Inertial Labs GPS-Aided Inertial Navigation System (INS-DM, INS-BM)** is the latest version of Inertial Navigation System, developed by Inertial Labs. The INS-DM is the result of over 20 years of our experience in developing and supplying INS solutions to land, marine and aerial platforms around the world.

This system, the INS-DM, is an IP67 rated version of an all-new generation of super ruggedized, shielded from the EMC/EMI, fully-integrated, combined Inertial Navigation System (INS) + Attitude & Heading Reference System (AHRS) + Air Data Computer (ADC) high-performance strapdown system, that determines position, velocity and absolute orientation (Heading, Pitch and Roll) for any device on which it is mounted. Horizontal and Vertical Position, Velocity and Orientation are determined with high accuracy for both motionless and dynamic applications.



The Inertial Labs **INS-DM/INS-BM** can support multiple types of MEMS Inertial Measurement Units (IMU) developed by Inertial Labs. Additionally, the **INS-DM/INS-BM** supports other IMU's, like the Honeywell HG4930. The **INS-DM/INS-BM** also utilizes different multi constellation (GPS, GLONASS, GALILEO, QZSS and BEIDOU) GNSS receivers like NovAtel OEM7 series or the u-blox F9 series.

The design of the **INS-DM/INS-BM** also includes an optional Air Data Computer (ADC), supported by two barometers, and the ability to support an external Stand-Alone Magnetic Compass (SAMC). The **INS-DM/INS-BM** contains Inertial Labs new on-board sensor fusion filter, state of the art navigation and guidance algorithms, and calibration software.

KEY FEATURES, BENEFITS & FUNCTIONALITY

- Commercially exportable GPS-Aided Inertial Navigation System
- 3-in-1 strapdown system: INS + AHRS + ADC (Air Data Computer)
- Embedded Honeywell or Inertial Labs MEMS Inertial Measurement Unit (IMU)
- NovAtel OEM7, u-blox ZED-F9P, or Septentrio mosaic-H High Precision GNSS receiver
- GPS, GLONASS, GALILEO, BEIDOU, QZSS, RTK supported signals
- Total and Static Pressure Sensors for calculating Indicated Airspeed
- SP, SBAS, DGPS, RTK and PPP for real time operation
- GNSS measurements and IMU raw data for post processing
- Advanced, extendable, embedded Kalman Filter based sensor fusion algorithms
- State-of-the-art algorithms for different dynamic motions of Helicopters, and UAV
- Full temperature calibration of all sensing elements
- EMC, EMI, and ERD protection
- Environmentally sealed (IP67)
- Aiding data: Wind sensor, Air Speed Sensor, Doppler shift from locator (for long-term GPS denied), External
 position and External Heading



SPECIFICATIONS

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	Parameter	Units	External Magnetometer Wind concer Air Speed Sensor Depole shift from Joseph (for Jone town CDC depied). External pacition and External Provider stating data									
യ് ഗ്	Input signals		External Magnetometer, Wind sensor, Air Speed Sensor, Doppler shift from locator (for long-term GPS denied), External position and External Heading aiding data IMU data: Accelerations, Angular rates, Magnetic field;									
	Output -1		AHRS data: Heading, Pitch & Roll									
달	IMU data: Accelerations, Angular rates, Magnetic field; AHRS data: Heading, Pitch & Roll INS data: Positions, Velocity, Delta Theta and Delta Velocity, GNSS data, Time Air Data Computer data: Static Pressure (calibrated), Dynamic Pressure (calibrated) True Airsneed, Mach-Number, Static Pressure Over True Angle of Attact						alibrated), Baro-Co		Ititude, Pressure A	Altitude,	Calibrated Airspeed,	
Inputs Output	Hadenh.	Hz	True Airspeed, Mach-Number, Static Pressure Over Total Pressure, True Angle of Attack, Rate of Climb 1 200 (INS, MRU & AHRS data); up to 2000 (IMU data)							• •		
I	Update rate Start-up time			1 200	UND, MKU & AF	<1 <1	ooo (1140 data)					
	Positions, Velocity, and Timestamps	sec	M1 (miniAHRS)	E1 (KERNEL	-110)	A1 (KER	NEL-210)	N11 (IMU-	NAV-200)	B1	(HG4930 CA51)	
	Horizontal position accuracy (SP)	m					1.2					
_	Horizontal position accuracy (SBAS) (1) Horizontal position accuracy (DGPS)	m m					0.6					
<u>.</u>	Horizontal position accuracy	m					0.025					
Navigation	(PPP TerraStar-C PRO) (2) Horizontal position accuracy (PPK)(3)	-					0.005					
<u>.</u>	Horizontal position accuracy (RTK)	m					0.01					
S	Vertical position accuracy (RTK) Velocity accuracy (OEM7720), RMS	m m/sec				0.02 0.03						
Ž	Horizontal Position accuracy (free inertial, land	% DT		1		,		0.1				
	vehicles) Horizontal Position accuracy (free inertial, aerial)	NMPH		<10		0.2 <7			<5			
	Heading	MHTT			</td <td></td> <td colspan="4"><>></td>		<>>					
	Range	deg					0 to 360					
	Angular Resolution Static & Dynamic Accuracy (4) (Dual antenna, 1 meter	deg					0.1					
_	baseline)	deg					0.15					
Orientation	Static & Dynamic Accuracy (4) (Dual antenna, 2 meters baseline)	deg					0.8					
a ii	Dynamic Accuracy (4) (Single antenna)	deg					0.15					
<u>`</u>	Post-processing accuracy (3)	deg		.05			.03	0.01		-	0.01	
<u>•</u>	Pitch and Roll	deg/hr		10			2	1		0.5		
0	Range	deg				±	:90, ±180					
	Angular Resolution Static Accuracy	deg deg	0	.08		Ι ο	.05	0.0	13	0.02		
	Dynamic Accuracy (with GNSS correction)	deg	0	.05		0	.03	0.0	12		0.01	
	Post processing accuracy (3)	deg	0	.05		0.	006	0.00	03		0.002	
	Gyroscopes Measurement range	deg/sec			+4	150, ±2000					±400	
	Bias in-run stability, RMS	deg/hr		2	_	,	1	0.5	5	0.25		
	Bias residual error, RMS	deg/hr		72		1000	25	15	5		7	
	SF error Noise (ARW)	ppm deg/√hr	0	.38		0.2		0.1	1	100 0.04		
	Accelerometers											
	Measurement range Bias in-run stability, RMS	g mg	0	.01		±8, ±40 0.005		0.00	03	±20 0.025		
IMU	Bias residual error, RMS	mg		0.7		0.5		0.4			1.7	
	SF error Noise (ARW)	ppm m/s/√hr	5		0.015		0.00	no	600 0.03			
	Magnetometers Noise (ARW)	111/5/ (111			0.015			0.03				
	Measurement range	Gauss	±8 -			±1.						
	Bias in-run stability, RMS Noise density, PSD	μGauss, 1σ μGauss/√Hz, 1σ	8 - 15 -				0.2					
							•	50				
	SF Accuracy	ppm, 1σ	500	-								
	SF Accuracy Receiver	ppm, 1σ	500 NovAtel OEM7720	NovAtel OEM719		rio mosaic-H	Septentrio	mosaic-X5	u-blox ZED-F		u-blox ZED-F9P L5	
	SF Accuracy		500 NovAtel OEM7720 P Dual	NovAtel OEM719 Single		Dual	Dual GPS (L1C/A, L1F	Single PY, L2C, L2P(Y),	u-blox ZED-F Dual Sir	ngle	Single	
	SF Accuracy Receiver	ppm, 1σ	500 NovAtel 0EM7720 Dual GPS (L1 C/A, L1C, L2 GLONASS (L1 C/A, L2 C/A)	Single 2C, L2P, L5) 'A, L2P, L3, L5)	GPS (L:	Dual 1C/A, L2P(Y), DNASS (L1C/A,	Dual GPS (L1C/A, L1I L5) GLONASS	mosaic-X5 Single PY, L2C, L2P(Y), (L1CA, L2CA,	u-blox ZED-F Dual Sir GPS (L1C/A, L: GLONASS (L10	ngle 2C) OF,	Single GPS (L1C/A, L5) GLONASS (L1OF)	
	SF Accuracy Receiver	ppm, 1σ	500 NovAtel OEM7720 Dual GPS (L1 C/A, L1C, L2 GLONASS (L1 C/A, L2 C, BeiDou (B11, B1C, B2	Single 2C, L2P, L5) (A, L2P, L3, L5) (I, B2a, B3I)	GPS (LI L2C) GLO L2C/A)	Dual 1C/A, L2P(Y), DNASS (L1C/A, Beidou (B1I,	Dual GPS (L1C/A, L1I L5) GLONASS L2P, L3 Beidou (B1I, I	mosaic-X5 Single PY, L2C, L2P(Y), (L1CA, L2CA, CDMA) 31C, B2a, B2I,	u-blox ZED-F Dual Sir GPS (L1C/A, L: GLONASS (L1C L2OF) Galile	ngle 2C) OF,	Single GPS (L1C/A, L5) GLONASS (L1OF) Galileo (E1B/C, E5a)	
(6	SF Accuracy Receiver Number of GNSS Antennas	ppm, 1σ	500 NovAtel 0EM7720 Dual GPS (L1 C/A, L1C, L2 GLONASS (L1 C/A, L2 C, BeiDou (BII, B1C, B2 Galileo (E1, E5 AltBOC, NavIC/IRNSS	NovAtel OEM719 Single 2C, L2P, L5) (A, L2P, L3, L5) [I, B2a, B3I) E5a, E5b, E6) (L5)	GPS (L: L2C) GL0 L2C/A) B2I, B3: E5b) 0	Dual 1C/A, L2P(Y), DNASS (L1C/A, Beidou (B1I, I) Galileo (E1, 2ZSS (L1C/A,	Dual GPS (L1C/A, L1I L5) GLONASS L2P, L3 Beidou (B1I, I B2b,	mosaic-X5 Single PY, L2C, L2P(Y), (L1CA, L2CA, CDMA) B1C, B2a, B2I, B3I)	u-blox ZED-F Dual Sir GPS (L1C/A, L: GLONASS (L10 L2OF) Galile (E1B/C, E5b BeiDou (B1I, B	2C) OF, so)) 32I)	Single GPS (L1C/A, L5) GLONASS (L1OF) Galileo (E1B/C, E5a) BeiDou (B1I, B2a) QZSS (L1C/A L1S L5)	
SS	SF Accuracy Receiver Number of GNSS Antennas	ppm, 1σ	500 NovAtel OEM7720 Dual GPS (L1 C/A, L1C, L2 C, BeiDou (B11, B1C, B2 Galileo (E1, E5 AltBOC, NavIC/IRNSS QZSS (L1 C/A, L1C, L2C,	NovAtel OEM719 Single 2C, L2P, L5) (A, L2P, L3, L5) I, B2a, B3I) E5a, E5b, E6) (L5) L5, L6) L-Band	GPS (L: L2C) GL0 L2C/A) B2I, B3: E5b) 0	Dual 1C/A, L2P(Y), DNASS (L1C/A, Beidou (B1I, I) Galileo (E1,	Dual GPS (L1C/A, L1I L5) GLONASS L2P, L3 Beidou (B1I, I	mosaic-X5 Single PY, L2C, L2P(Y), (L1CA, L2CA, CDMA) B3IC, B2a, B2I, B3I) E5a, E5b, E5	u-blox ZED-F Dual Sir GPS (L1C/A, L: GLONASS (L1C L2OF) Galile (E1B/C, E5b BeiDou (B1I, B QZSS (L1C/A, L	ngle 2C) OF, 30 32I) L2C)	Single GPS (L1C/A, L5) GLONASS (L10F) Galileo (E18/C, E5a) BeiDou (B11, B2a) QZSS (L1C/A L1S L5) NavIC (L5)	
SSNS	SF Accuracy Receiver Number of GNSS Antennas	ppm, 1σ	500 NovAtel 0EM7720 Dual GPS (L1 C/A, L1C, L2 GLONASS (L1 C/A, L2 C, BeiDou (BII, B1C, B2 Galileo (E1, E5 AltBOC, NavIC/IRNSS	NovAtel OEM719 Single 2C, L2P, L5) (A, L2P, L3, L5) I, B2a, B3I) E5a, E5b, E6) (L5) L5, L6) L-Band SAN; SBAS L1, L5;	GPS (L: L2C) GL(L2C/A) B2I, B3: E5b) (L1C/B, L:	Dual 1C/A, L2P(Y), DNASS (L1C/A, Beidou (B1I, I) Galileo (E1, JZSS (L1C/A, 2C) NavIC (L5)	Dual GPS (L1C/A, L1t L5) GLONASS L2P, L3 Beidou (B1I, t B2b, Galileo (E1,	Mosaic-X5 Single PY, L2C, L2P(Y), (L1CA, L2CA, CDMA) 31C, B2a, B2I, B3I) E5a, E5b, E5 NavIC (L5)	u-blox ZED-F Dual Sir GPS (L1C/A, L: GLONASS (L1C L2OF) Galile (E1B/C, E5b BeiDou (B1I, B QZSS (L1C/A, L	ngle 2C) OF, 30 32I) L2C)	Single GPS (L1C/A, L5) GLONASS (L10F) Galileo (E1B/C, E5a) BeiDou (B11, B2a) QZSS (L1C/A L15 L5) NavIC (L5) GAGAN; SBAS L1C/A;	
GNSS	SF Accuracy Receiver Number of GNSS Antennas GNSS Constellations GNSS Corrections Channel Configuration (3)	ppm, 10 - - - channels	500 NovAtel OEM7720 Dual GPS (L1 C/A, L1C, L2 GLONASS (L1 C/A, L2 C, BeiDou (B1I, B1C, B2 Galileo (E1, E5 AltBOC, NaviC/IRNSS QZSS (L1 C/A, L1C, L2C, WAAS; EGNOS; MAS; GAG DGPS; RTK; PPP	NovAtel OEM719 Single CC, L2P, L5) (A, L2P, L3, L5) (A, L2P, L3, L5) (A, L5P, L3, L5) (A, L5P, L5P, L5P, L5P, L5P, L5P, L5P, L5P	GPS (L: L2C) GL(L2C/A) B2I, B3: E5b) (L1C/B, L:	Dual 1C/A, L2P(Y), DNASS (L1C/A, Beidou (B11, I) Galileo (E1, 2ZSS (L1C/A, 2C) NavIC (L5) AS; EGNOS; MSA	Dual GPS (L1C/A, L1I L5) GLONASS L2P, L3 Beidou (B1I, t, B2b, Galileo (E1, AltBoc, E6) S; GAGAN; SBAS; I	Mosaic-X5 Single PY, L2C, L2P(Y), (L1CA, L2CA, CDMA) 31C, B2a, B2I, B3I) E5a, E5b, E5 NavIC (L5)	u-blox ZED-F Dual Sir GPS (L1C/A, L: GLONASS (L1C L2OF) Galile (E1B/C, E5b BeiDou (B1I, B QZSS (L1C/A, L	ngle 2C) OF, 80 9) 32I) L2C) S; MSAS; DGPS;	Single GPS (L1C/A, L5) GLONASS (L10F) Galileo (E18/C, E5a) BeiDou (B11, B2a) QZSS (L1C/A L1S L5) NavIC (L5) GAGAN; SBAS L1C/A; RTK 4	
GNSS	SF Accuracy Receiver Number of GNSS Antennas GNSS Constellations GNSS Corrections Channel Configuration (3) GNSS Data Rate (6)	ppm, 10	500 NovAtel OEM7720 Dual GPS (L1 C/A, L1C, L2 GLONASS (L1 C/A, L2 C, BeiDou (BII, B1C, B2 Gallieo (E1, E5 AltBOC, NavIC/IRNSS QZSS (L1 C/A, L1C, L2C, WAAS; EGNOS; MSAS; GAC DGPS; RTK; PPP	VovAtel OEM719 Single Single CC, L2P, L5) A, L2P, L3, L5) I, B2a, B31) E5a, E5b, E6) (L5) L5, L6) L-Band SAN; SBAS L1, L5; Terrastar	GPS (L: L2C) GLC L2C/A) B2I, B3: E5b) Q L1C/B, L:	Dual 1C/A, L2P(Y), DNASS (L1C/A, Beidou (B11, J Gallieo (E1, JZSS (L1C/A, 2C) NavIC (L5) AS; EGNOS; MSA	Dual GPS (L1C/A, L1I L5) GLONASS L2P, L3 Beidou (B11, t B2b, Galileo (E1, AltBoc, E6) S; GAGAN; SBAS;	Mosaic-X5 Single PY, L2C, L2P(Y), (L1CA, L2CA, CDMA) 31C, B2a, B2I, B3I) E5a, E5b, E5 NavIC (L5)	u-blox ZED-F Dual Sir GPS (L1C/A, L: GLONASS (L1C L2OF) Galile (E1B/C, E5b BeiDou (B1I, B QZSS (L1C/A, L	ngle 2C) OF, so o) 32I) L2C) S; MSAS; DGPS	Single GPS (L1C/A, L5) GLONASS (L10F) Gallieo (E1B/C, E5a) BeiDou (B1I, B2a) QZSS (L1C/A L1S L5) NavIC (L5) GAGAN; SBAS L1C/A; RTK 4 20	
GNSS	SF Accuracy Receiver Number of GNSS Antennas GNSS Constellations GNSS Corrections Channel Configuration (3)	ppm, 10	500 NovAtel OEM7720 T Dual GPS (L1 C/A, L1C, L2 GLONASS (L1 C/A, L2 C, BeiDou (B1I, B14, B2 C, B4) Galileo (E1, E5 AltBOC, NAVIC/IRNSS QZSS (L1 C/A, L1C, L2C, UA) WAAS; EGNOS; MSAS; GAC DGPS; RTK; PPP 555 5 / 20 / 10	VovAtel OEM719 Single 2C, L2P, L5) 4A, L2P, L3, L5) 1, B2a, B31) E5a, E5b, E6) (L5) L5, L6) L-Band SAN; SBAS L1, L5; Ferrastar	GPS (L: L2C) GL(L2C/A) B2I, B3: E5b) (L1C/B, L:	Dual 1C/A, L2P(Y), DNASS (L1C/A, Beidou (B11, J Gallieo (E1, JZSS (L1C/A, 2C) NavIC (L5) AS; EGNOS; MSA	Dual GPS (L1C/A, L1I L5) GLONASS L2P, L3 Beidou (B1I, t, B2b, Galileo (E1, AltBoc, E6) S; GAGAN; SBAS; I	Mosaic-X5 Single PY, L2C, L2P(Y), (L1CA, L2CA, CDMA) 31C, B2a, B2I, B3I) E5a, E5b, E5 NavIC (L5)	u-blox ZED-F Dual Sir GPS (L1C/A, L: GLONASS (L1C L2OF) Galile (E1B/C, E5b BeiDou (B1I, B QZSS (L1C/A, L	ngle 2C) OF, 20	Single GPS (L1C/A, L5) GLONASS (L10F) Galileo (E1B/C, E5a) BeiDou (B11, B2a) QZSS (L1C/A L1S L5) NavIC (L5) GAGAN; SBAS L1C/A; RTK 4 20 M 3	
GNSS	SF Accuracy Receiver Number of GNSS Antennas GNSS Constellations GNSS Corrections Channel Configuration (5) GNSS Data Rate (6) RTK Corrections Velocity Accuracy Initialization Time	ppm, 10	500 NovAtel OEM7720 Dual GPS (L1 C/A, L1C, L2 GLONASS (L1 C/A, L2 C, BeiDou (B1I, B1C, B2 Galileo (E1, E5 AltBOC, NaviC/IRNSS QZSS (L1 C/A, L1C, L2C, WAAS; EGNOS; MAS; GAG DGPS; RTK; PPP	VovAtel OEM719 Single 2C, L2P, L5) 4A, L2P, L3, L5) 1, B2a, B31) E5a, E5b, E6) (L5) L5, L6) L-Band SAN; SBAS L1, L5; Ferrastar	GPS (L: L2C) GLC L2C/A) B2I, B3: E5b) C L1C/B, L: WA.	Dual 1C/A, L2P(Y), NASS (L1C/A, NASS (L1C/A, I) Galileo (E1, I) Galileo (E1, I) Salileo (E1,	Dual GPS (L1C/A, L1I L5) GLONASS L2P, L3 Beidou (B1I, t, B2b, Galileo (E1, AltBoc, E6) S; GAGAN; SBAS; I	mosaic-X5 Single PY, L2C, L2P(Y), (L1CA, L2CA, CDMA) 31C, B2A, B2I, B3I) SESA, ESB, ES NavIC (L5)	u-blox ZED-F Dual Sir GPS (L1C/A, L1 GLONASS (L1 L2OF) Galile (E1B/C, ESD BeiDou (B11, B QZSS (L1C/A, L WAAS; EGNOS	ngle 2C) OF, SO O) 32I) L2C) S; MSAS; DGPS, 18 10, RTC 0.0 Id start),	Single GPS (L1C/A, L5) GLONASS (L10F) Galileo (E1B/C, E5a) BeiDou (B11, B2a) QZSS (L1C/A, L1S L5) NavIC (L5) GAGAN; SBAS L1C/A; RTK 4 20 M 3 55 <10 (hot start)	
SSNS	SF Accuracy Receiver Number of GNSS Antennas GNSS Constellations GNSS Corrections Channel Configuration (5) GNSS Data Rate (6) RTK Corrections Velocity Accuracy Initialization Time Time Accuracy (clock drift) (7)	ppm, 10	500 NovAtel OEM7720 Dual GPS (L1 C/A, L1C, L2 GLONASS (L1 C/A, L2 C, BeiDou (BII, B1C, B2 Gallieo (E1, E5 AltBOC, NaviC/IRNSS QZSS (L1 C/A, L1C, L2C, WAAS; EGNOS; MSAS; GAC DGPS; RTK; PPP 555 5 / 20 / 10	VovAtel OEM719 Single 2C, L2P, L5) 4A, L2P, L3, L5) 1, B2a, B31) E5a, E5b, E6) (L5) L5, L6) L-Band SAN; SBAS L1, L5; Ferrastar	GPS (L: L2C) GLC L2C/A) B2I, B3: E5b) (C L1C/B, L: WA.	Dual 1C/A, L2P(Y), NASS (L1C/A, NASS (L1C/A, I) Galileo (E1, I) Galileo (E1, I) Salileo (E1,	Dual GPS (L1C/A, L11 L5) GLOMASS L2P, L3 Beldou (B11, t B2b, Gailleo (L1, AltBoc, E6) S; GAGAN; SBAS; t 448 00 (max)	mosaic-X5 Single PY, L2C, L2P(Y), (L1CA, L2CA, CDMA) 31C, B2A, B2I, B3I) SESA, ESB, ES NavIC (L5)	u-blox ZED-F Dual Sir GPS (L1C/A, L1 GLONASS (L1 L2OF) Galile (E1B/C, ESD BeiDou (B11, B QZSS (L1C/A, L WAAS; EGNOS	ngle 2C) OF, 80 O) 32I) L2C) S; MSAS; DGPS, 18 10, RTC 0.0 Id start), 3	Single GPS (L1C/A, L5) GLONASS (L10F) Galileo (E1B/C, E5a) BeiDou (B11, B2a) QZSS (L10F) AsvIC (L5) GAGAN; SBAS L1C/A; RTK 4 20 M 3 55 <10 (hot start)	
GNSS	SF Accuracy Receiver Number of GNSS Antennas GNSS Constellations GNSS Corrections Channel Configuration (5) GNSS Data Rate (6) RTK Corrections Velocity Accuracy Initialization Time	ppm, 10	500 NovAtel OEM7720 T Dual GPS (L1 C/A, L1C, L2 GLONASS (L1 C/A, L2 C, BeiDou (B1I, B14, B2 C, B4) Galileo (E1, E5 AltBOC, NAVIC/IRNSS QZSS (L1 C/A, L1C, L2C, UA) WAAS; EGNOS; MSAS; GAC DGPS; RTK; PPP 555 5 / 20 / 10	VovAtel OEM719 Single 2C, L2P, L5) 4A, L2P, L3, L5) 1, B2a, B31) E5a, E5b, E6) (L5) L5, L6) L-Band SAN; SBAS L1, L5; Ferrastar	GPS (L: L2C) GLC L2C/A) B2I, B3: E5b) C L1C/B, L: WA.	Dual 1C/A, L2P(Y), NASS (L1C/A, NASS (L1C/A, I) Galileo (E1, I) Galileo (E1, I) Salileo (E1,	Dual GPS (L1C/A, L1I L5) GLONASS L2P, L3 Beidou (BII, I B2b, Galileo (EI, AltBoc, E6) S; GAGAN; SBAS; L448 (00 (max))	mosaic-X5 Single PY, L2C, L2P(Y), (L1CA, L2CA, CDMA) 31C, B2A, B2I, B3I) SESA, ESB, ES NavIC (L5)	u-blox ZED-F Dual Sir GPS (L1C/A, L1 GLONASS (L1 L2OF) Galile (E1B/C, ESD BeiDou (B11, B QZSS (L1C/A, L WAAS; EGNOS	ngle 2C) OF, SO O) 32I) L2C) S; MSAS; DGPS, 18 10, RTC 0.0 Id start),	Single GPS (L1C/A, L5) GLONASS (L10F) Galileo (E18/C, E5a) BelDou (B11, B2a) QZSS (L1C/A L1S L5) NavIC (L5) GAGAN; SBAS L1C/A; RTK 4 20 M3 3 55 <10 (hot start))	
ND GN	Receiver Number of GNSS Antennas GNSS Constellations GNSS Corrections Channel Configuration (5) GNSS Data Rate (6) RTK Corrections Velocity Accuracy Initialization Time Time Accuracy (clock drift) (7) Air Data Computer Pressure Sensor Range Static Pressure Range	channels Hz m/sec nano sec mbar hPa, % FS	500 NovAtel OEM7720 T Dual GPS (L1 C/A, L1C, L2 GLONASS (L1 C/A, L2 C, L2 GLONASS (L1 C/A, L2 C, L2 GAIIIEO (E1, E5 AItBOC, NAVIC/IRNSS QZSS (L1 C/A, L1C, L2C, L2C, L2C, L3C) WAAS; EGNOS; MSAS; GAC DGPS; RTK; PPP 555 5 / 20 / 10	VovAtel OEM719 Single 2C, L2P, L5) 4A, L2P, L3, L5) 1, B2a, B31) E5a, E5b, E6) (L5) L5, L6) L-Band SAN; SBAS L1, L5; Ferrastar	GPS (L: L2C) GLC L2C/A) B2I, B3: E5b) C L1C/B, L: WA.	Dual LC/A, L2P(Y), DNASS (L1C/A, Beidou (BII, I) Galileo (EI, ZZSS (L1C/A, 2C) NavIC (L5) AS; EGNOS; MSA 1 M 3 <45 (cold st	Dual GPS (L1C/A, L11 L5) GLOMASS L2P, L3 Beldou (B11, t B2b, Gaillee (L1, A) H1Boc, E6) S; GAGAN; SBAS; t 448 00 (max) aart); <20 (hot star 2PEXT ±600 00 to 1100	mosaic-X5 Single PY, L2C, L2P(Y), (L1CA, L2CA, CDMA) 31C, B2A, B2I, B3I) SESA, ESB, ES NavIC (L5)	u-blox ZED-F Dual Sir GPS (L1C/A, L1 GLONASS (L1 L2OF) Galile (E1B/C, ESD BeiDou (B11, B QZSS (L1C/A, L WAAS; EGNOS	ngle 22C) OF, OO, OF, OO, OO, OO, OO, OO, OO, OO,	Single GPS (L1C/A, L5) GLONASS (L10F) Galileo (E18/C, E5a) BelDou (B11, B2a) QZSS (L1C/A L1S L5) NavIC (L5) GAGAN; SBAS L1C/A; RTK 4 20 M3 3 55 <10 (hot start))	
ND GN	SF Accuracy Receiver Number of GNSS Antennas GNSS Constellations GNSS Corrections Channel Configuration (5) GNSS Data Rate (6) RTK Corrections Velocity Accuracy Initialization Time Time Accuracy (clock drift) (7) Air Data Computer Pressure Sensor Range	ppm, 10	500 NovAtel OEM7720 Dual GPS (L1 C/A, L1C, L2 GLONASS (L1 C/A, L2 C, BeiDou (B1I, B15 AltBOC, NAUT/CIRNSS Q2SS (L1 C/A, L1C, L2C, UAAS; EGNOS; MSAS; GAC DGPS; RTK; PPP 555 5 / 20 / 10 < 39 (cold start), <20	VovAtel OEM719 Single 2C, L2P, L5) A, L2P, L3, L5) I, B2a, B3I) E5a, E5b, E6) (L5) L5, L6) L-Band SAN; SBAS L1, L5; Ferrastar 0 In (hot start)	GPS (L: L2C) GLC L2C/A) B2I, B3: E5b) C L1C/B, L: WA.	Dual LC/A, L2P(Y), DNASS (L1C/A, Beldou (BII, I) Galileo (E1, 2SS (L1C/A, 2C) NavIC (L5) AS; EGNOS; MSA 1 M 3 <45 (cold sl	Dual GFS (LIC/A, LII LS) GLONASS L2P, L3 Beidou (B1L, f B2b, Galileo (E1, AltBoc, E6) S; GAGAN; SBAS; I 448 00 (max) 2PEXT ±600	mosaic-X5 Single PY, L2C, L2P(Y), (L1CA, L2CA, CDMA) 31C, B2A, B2I, B3I) SESA, ESB, ES NavIC (L5)	u-blox ZED-F Dual Sir GPS (L1C/A, L1 GLONASS (L1 L2OF) Galile (E1B/C, ESD BeiDou (B11, B QZSS (L1C/A, L WAAS; EGNOS	ngle 2C) OF, SO SI	Single GPS (L1C/A, L5) GLONASS (L10F) Galileo (E18/C, E5a) BeiDou (B11, B2a) QZSS (L1C/A L1S L5) NavIC (L5) GAGAN; SBAS L1C/A; RTK 4 20 M3 3 15 <10 (hot start)) AX 00	
ND GN	Receiver Number of GNSS Antennas GNSS Constellations GNSS Constellations GNSS Constellations Channel Configuration (5) GNSS Data Rate (6) RTK Corrections Velocity Accuracy Initialization Time Time Accuracy (clock drift) (7) Air Data Computer Pressure Sensor Range Static Pressure Accuracy Dynamic Pressure Range Static Pressure Range On Static Pressure Range On Static Pressure Range Dynamic Pressure Range Dynamic Pressure Range Dynamic Pressure Range Dynamic Pressure Range	channels Hz n/sec sec nano sec hPa, % FS hPa % FSS	500 NovAtel OEM7720 T Dual GPS (L1 C/A, L1C, L2 GLONASS (L1 C/A, L2 C, L2 GLONASS (L1 C/A, L2 C, L2 GAIIIEO (E1, E5 AItBOC, NAVIC/IRNSS QZSS (L1 C/A, L1C, L2C, L2C, L2C, L3C) WAAS; EGNOS; MSAS; GAC DGPS; RTK; PPP 555 5 / 20 / 10	VovAtel OEM719 Single 2C, L2P, L5) A, L2P, L3, L5) I, B2a, B3I) E5a, E5b, E6) (L5) L5, L6) L-Band SAN; SBAS L1, L5; Ferrastar 0 In (hot start)	GPS (L: L2C) GLC L2C/A) B2I, B3: E5b) C L1C/B, L: WA.	Dual LC/A, L2P(Y), DNASS (L1C/A, Beidou (BII, 1) Galileo (Ei, ZSS (L1C/A, 2C) NavIC (L5) AS; EGNOS; MSA 1 M 3 <45 (cold st	Dual GPS (L1C/A, L11 L5) GLOMASS L2P, L3 Beldou (B11, t B2b, Galileo (E1, AltBoc, E6) S; GAGAN; SBAS; t 448 00 (max) 2PEXT ±600 00 to 1100 ±0.1 0.15 to 600 ±0.25	mosaic-X5 Single PY, L2C, L2P(Y), (L1CA, L2CA, CDMA) 31C, B2A, B2I, B3I) SESA, ESB, ES NavIC (L5)	u-blox ZED-F Dual Sir GPS (L1C/A, L1 GLONASS (L1 L2OF) Galile (E1B/C, ESD BeiDou (B11, B QZSS (L1C/A, L WAAS; EGNOS	ngle 22C) OF, OO, OF, OO, OO, OO, OO, OO, OO, OO,	Single GPS (L1C/A, L5) GLONASS (L10F) Galileo (E18/C, E5a) BeiDou (B11, B2a) QZSS (L1C/A L1S L5) NavIC (L5) GAGAN; SBAS L1C/A; RTK 4 20 M3 3 15 <10 (hot start)) AX 00	
ND GN	SF Accuracy Receiver Number of GNSS Antennas GNSS Constellations GNSS Corrections Channel Configuration (5) GNSS Data Rate (6) RTK Corrections Velocity Accuracy Initialization Time Time Accuracy (clock drift) (7) Air Data Computer Pressure Sensor Range Static Pressure Range Static Pressure Range Static Pressure Range Dynamic Pressure Racuracy Dynamic Pressure Racuracy Dynamic Pressure Accuracy Pressure Altitude Range	ppm, 10	500 NovAtel OEM7720 Dual GPS (L1 C/A, L1C, L2 GLONASS (L1 C/A, L2 C, BeiDou (B1I, B15 AltBOC, NAUT/CIRNSS Q2SS (L1 C/A, L1C, L2C, UAAS; EGNOS; MSAS; GAC DGPS; RTK; PPP 555 5 / 20 / 10 < 39 (cold start), <20	VovAtel OEM719 Single 2C, L2P, L5) A, L2P, L3, L5) I, B2a, B3I) E5a, E5b, E6) (L5) L5, L6) L-Band SAN; SBAS L1, L5; Ferrastar 0 In (hot start)	GPS (L: L2C) GLC L2C/A) B2I, B3: E5b) C L1C/B, L: WA.	Dual LC/A, L2P(Y), DNASS (L1C/A, Beidou (BII, 1) Galileo (Ei, ZSS (L1C/A, 2C) NavIC (L5) AS; EGNOS; MSA 1 M 3 <45 (cold st	Dual GPS (L1C/A, L11 L5) GLOMASS L2P, L3 Beidou (B11, E) Beid	mosaic-X5 Single PY, L2C, L2P(Y), (L1CA, L2CA, CDMA) 31C, B2A, B2I, B3I) SESA, ESB, ES NavIC (L5)	u-blox ZED-F Dual Sir GPS (L1C/A, L1 GLONASS (L1 L2OF) Galile (E1B/C, ESD BeiDou (B11, B QZSS (L1C/A, L WAAS; EGNOS	ngle 2C) OF, SO SI	Single GPS (L1C/A, L5) GLONASS (L10F) Galileo (E18/C, E5a) BeiDou (B11, B2a) QZSS (L1C/A L1S L5) NavIC (L5) GAGAN; SBAS L1C/A; RTK 4 20 M3 3 15 <10 (hot start)) AX 00	
ND GN	SF Accuracy Receiver Number of GNSS Antennas GNSS Constellations GNSS Corrections Channel Configuration (*) GNSS Data Rate (*) RTK Corrections Velocity Accuracy Initialization Time Time Accuracy (clock drift) (*) Air Data Computer Pressure Sensor Range Static Pressure Range Static Pressure Range Dynamic Pressure Range Dynamic Pressure Range Pressure Altitude Range Airspeed Range	channels Hz - m/sec sec nano sec mbar hPa, % FS hPa % FSS hPa m m m m/sec	500 NovAtel OEM7720 Dual GPS (L1 C/A, L1C, L2 GLONASS (L1 C/A, L2 C, BeiDou (B1I, B15 AltBOC, NAUT/CIRNSS Q2SS (L1 C/A, L1C, L2C, UAAS; EGNOS; MSAS; GAC DGPS; RTK; PPP 555 5 / 20 / 10 <39 (cold start), <20 2P ±25	OvAtel OEM719 Single (C, L2P, L5) (A, L2P, L3, L5) (I, B2a, B3I) (E5a, E5b, E6) (L5) (L5, L6) (L-Band SAN; SBAS L1, L5; ferrastar 0 f 0 (hot start)	GPS (L: L2C) GLC L2C/A) B2I, B3: E5b) C L1C/B, L: WA.	Dual LC/A, L2P(Y), DNASS (L1C/A, Beidou (BII, 1) Galileo (Ei, ZSS (L1C/A, 2C) NavIC (L5) AS; EGNOS; MSA 1 M 3 <45 (cold st	Dual GPS (L1C/A, L1I L5) GLOMASS L2P, L3 Beldou (B11, 82b, Galileo (E1, AlBoc, E6) S; GAGAN; SBAS; L48 00 (max) 2PEXT ±600 00 to 1100 ±0.1 0.15 to 600 ±0.25 00 to 9000 1 5 to 310	mosaic-X5 Single PY, L2C, L2P(Y), (L1CA, L2CA, CDMA) 31C, B2A, B2I, B3I) SESA, ESB, ES NavIC (L5)	u-blox ZED-F Dual Sir GPS (L1C/A, L1 GLONASS (L1 L2OF) Galile (E1B/C, ESD BeiDou (B11, B QZSS (L1C/A, L WAAS; EGNOS	ngle 2C) OF, SO SI	Single GPS (L1C/A, L5) GLONASS (L1OF) Galileo (E1B/C, E5a) BeiDou (B11, B2a) QZSS (L1C/A L1S L5) NavIC (L5) GAGAN; SBAS L1C/A; RTK 4 20 M 3 55 <10 (hot start) 0 1AX	
Computer GN	SF Accuracy Receiver Number of GNSS Antennas GNSS Constellations GNSS Corrections Channel Configuration (5) GNSS Data Rate (6) RTK Corrections Velocity Accuracy Initialization Time Time Accuracy (clock drift) (7) Air Data Computer Pressure Sensor Range Static Pressure Range Static Pressure Range Dynamic Pressure Range Dynamic Pressure Range Dynamic Pressure Accuracy Pressure Altitude Range Pressure Altitude Range Pressure Altitude Range Airspeed Accuracy Airspeed Range Airspeed Range Airspeed Acuracy	ppm, 10	500 NovAtel OEM7720 Dual GPS (L1 C/A, L1C, L2 GLONASS (L1 C/A, L2 C, BelDou (B1I, B1C, B2) Galleo (E1, E5 AlBOC, NavfC/IRNSS (ZSS (L1 C/A, L1C, L2C, USAS; EGNOS; MSAS; GAC DGPS; RTK; PPP 5 555 5 / 20 / 10 <39 (cold start), <20 2P ±25 0.15 to 6	VovAtel OEM719 Single 2C, L2P, L5) A, L2P, L3, L5) J, B2a, B31) E5a, E5b, E6) (L5) L5, L6) L-Band SAN; SBAS L1, L5; Ferrastar 0 F 0 (hot start)	GPS (L: L2C) GLC L2C/A) B2I, B3: E5b) C L1C/B, L: WA.	Dual LC/A, L2P(Y), DNASS (L1C/A, Beidou (BII, I) Galileo (EI, ZSS (L1C/A, 2C) NavIC (L5) AS; EGNOS; MSA 45 (cold st	Dual	mosaic-X5 Single PY, L2C, L2P(Y), (L1CA, L2CA, CDMA) 31C, B2A, B2I, B3I) SESA, ESB, ES NavIC (L5)	u-blox ZED-F Dual Sir GPS (L1C/A, L1 GLONASS (L1 L2OF) Galile (E1B/C, ESD BeiDou (B11, B QZSS (L1C/A, L WAAS; EGNOS	2C) OF, OP, OP, OP, OP, OP, OP, OP, OP, OP, OP	Single GPS (L1C/A, L5) GLONASS (L10F) Galileo (E1B/C, E5a) BeiDou (B11, B2a) QZSS (L1C/A L1S L5) NavIC (L5) GAGAN; SBAS L1C/A; RTK 4 20 M3 55 <10 (hot start) 0) 1AX 000	
Computer GN	SF Accuracy Receiver Number of GNSS Antennas GNSS Constellations GNSS Corrections Channel Configuration (*) GNSS Data Rate (*) RTK Corrections Velocity Accuracy Initialization Time Time Accuracy (clock drift) (*) Air Data Computer Pressure Sensor Range Static Pressure Range Static Pressure Range Dynamic Pressure Range Dynamic Pressure Range Pressure Altitude Range Airspeed Range	channels Hz - m/sec sec nano sec mbar hPa, % FS hPa % FSS hPa m m m m/sec	500 NovAtel QEM7720 Dual GPS (L1 C/A, L1C, L2 GLONASS (L1 C/A, L2 C, BeiDou (B11, B1C, B2 Gallieo (E1, E5 AltBOC, NaviC/IRNSS (ZSS (L1 C/A, L1 C, L2C, WAAS; EGNOS; MSAS; GAC DGPS; RTK; PPP 5555 5 / 20 / 10 <39 (cold start), <20 2P ±25 0.15 to	VovAtel OEM719 Single C, L2P, L5) A, L2P, L3, L5) I, B2a, B3I) L5, L6) L5, L6) L5, L6) L-Band SAN; SBAS L1, L5; Ferrastar 0 F 0 (hot start)	GPS (L: L2C) GLC L2C/A) B2I, B3: E5b) C L1C/B, L: WA.	Dual LC/A, L2P(Y), DNASS (L1C/A, Beidou (BII, I) Galileo (EI, ZSS (L1C/A, 2C) NavIC (L5) AS; EGNOS; MSA 45 (cold st	Dual GPS (L1C/A, L1I L5) GLOMASS L2P, L3 Beldou (B11, 82b, Galileo (E1, AlBoc, E6) S; GAGAN; SBAS; L48 00 (max) 2PEXT ±600 00 to 1100 ±0.1 0.15 to 600 ±0.25 00 to 9000 1 5 to 310	mosaic-X5 Single PY, L2C, L2P(Y), (L1CA, L2CA, CDMA) 31C, B2A, B2I, B3I) SESA, ESB, ES NavIC (L5)	u-blox ZED-F Dual Sir GPS (L1C/A, L1 GLONASS (L1 L2OF) Galile (E1B/C, ESD BeiDou (B11, B QZSS (L1C/A, L WAAS; EGNOS	ngle (2C) (OF, (2C) (OF, (2C) (OF) (OF) (OF) (OF) (OF) (OF) (OF) (OF	Single GPS (L1C/A, L5) GLONASS (L10F) Galileo (E18/C, E5a) BeiDou (B11, B2a) QZSS (L1C/A L1S L5) NavIC (L5) GAGAN; SBAS L1C/A; RTK 4 20 M3 55 <10 (hot start)) 1AX 000	
Computer GN	SF Accuracy Receiver Number of GNSS Antennas GNSS Constellations GNSS Constellations GNSS Constellations Channel Configuration (5) GNSS Data Rate (6) RTK Corrections Velocity Accuracy Initialization Time Time Accuracy (clock drift) (7) Air Data Computer Pressure Sensor Range Static Pressure Range Static Pressure Range Static Pressure Accuracy Dynamic Pressure Accuracy Dynamic Pressure Accuracy Pressure Altitude Range Pressure Altitude Range Pressure Altitude Range Airspeed Accuracy Airspeed Accuracy Mach Number Range Mach Number Range Mach Number Accuracy Mach Pressure Range Static Pressure Range	ppm, 10	500 NovAtel QEM7720 Dual GPS (L1 C/A, L1C, L2 GLONASS (L1 C/A, L2 C, BeiDou (B11, B1C, B2 Gallieo (E1, E5 AltBOC, NaviC/IRNSS (ZSS (L1 C/A, L1C, L2C, WAAS; EGNOS; MSAS; GAC DGPS; RTK; PPP 555 \$ 1 / 20 / 10 <39 (cold start), <20 2P ±25 0.15 to 6	VovAtel OEM719 Single S	GPS (L: L2C) GLC L2C/A) B2I, B3: E5b) C L1C/B, L: WA.	Dual LC/A, L2P(Y), DNASS (L1C/A, Beidou (BII, I) Galileo (EI, ZSS (L1C/A, 2C) NavIC (L5) AS; EGNOS; MSA 45 (cold st	Dual GPS (LIC/A, LII LS) GLOMASS L2P, L3 Beidou (B1I, E B2b, Galileo (E1, E AltBoc, E6) S; GAGAN; SBAS; I 448 00 (max) 2PEXT ±600 00 to 1100 ±0.15 0.15 to 600 ±0.25 00 to 9000 1 5 to 310 0.5 0.01 to 0.99 0.63 to 1	mosaic-X5 Single Single YP, L2C, L2P(Y), (L1CA, L2CA, CDMA) Id, B2A, B2I, B3I) SESA, ESB, ES NavIC (L5) DGPS; RTK	u-blox ZED-F Dual Sir GPS (L1C/A, L1 GLONASS (L1 L2OF) Galile (E1B/C, ESD BeiDou (B11, B QZSS (L1C/A, L WAAS; EGNOS	2C) OF, OP, OP, OP, OP, OP, OP, OP, OP, OP, OP	Single GPS (L1C/A, L5) GLONASS (L10F) Galileo (E18/C, E5a) BelDou (B11, B2a) QZSS (L1C/A L15 L5) NavIC (L5) GAGAN; SBAS L1C/A; RTK 4 20 M3 3 55 <10 (hot start) 0 AX 000 800	
Computer GN	Receiver Number of GNSS Antennas GNSS Constellations GNSS Constellations GNSS Constellations Channel Configuration (3) GNSS Data Rate (4) RTK Corrections Velocity Accuracy Initialization Time Time Accuracy (clock drift) (7) Air Data Computer Pressure Sensor Range Static Pressure Range Static Pressure Accuracy Dynamic Pressure Range Dynamic Pressure Altitude Accuracy Pressure Altitude Accuracy Airspeed Range Airspeed Range Airspeed Range Mach Number Range Mach Number Range Mach Number Range Static Pressure Over Total Pressure Range Static Pressure Range	channels Hz - m/sec sec nano sec mbar hPa, % FS % FSS m m/sec m/sec m/sec M/sec M M M - ppm	500 NovAtel OEM7720 IT Dual GPS (L1 C/A, L1C, L2 GLONASS (L1 C/A, L2 C, BeiDou (B1I, B15 E) Galileo (E1, E5 AltBOC, NAWIC/IRNSS (L1 C/A, L1C, L2C, USAS; EGNOS; MSAS; GAC DGPS; RTK, PPP	VovAtel OEM719 Single S	GPS (L: L2C) GLC L2C/A) B2I, B3: E5b) C L1C/B, L: WA.	Dual LC/A, L2P(Y), DNASS (LLC/A, Beidou (BII, 1) Galileo (Ei, 2CSS (LLC/A, 2C) NavIC (L5) AS; EGNOS; MSA	Dual GPS (L1C/A, L1I L5) GLOMASS L2P, L3 Beldou (B1I, t B2b, Gaillee (L1, A) HIBOC, E6) S; GAGAN; SBAS; t 448 00 (max) Lart); <20 (hot star ±600 00 to 1100 ±0.1 0.15 to 600 ±0.25 00 to 9000 1 5 to 310 0.5 0.01 to 0.99	mosaic-X5 Single Single YP, L2C, L2P(Y), (L1CA, L2CA, CDMA) Id, B2A, B2I, B3I) SESA, ESB, ES NavIC (L5) DGPS; RTK	u-blox ZED-F Dual Sir GPS (L1C/A, L1 GLONASS (L1 L2OF) Galile (E1B/C, ESD BeiDou (B11, B QZSS (L1C/A, L WAAS; EGNOS	2C) OF, 80 (1) (1) (2) (2) (3) (3) (3) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4	Single GPS (L1C/A, L5) GLONASS (L10F) Galileo (E18/C, E5a) BelDou (B11, B2a) QZSS (L1C/A L15 L5) NavIC (L5) GAGAN; SBAS L1C/A; RTK 4 20 M3 35 <10 (hot start) 00 4000	
ND GN	GNSS Constellations GNSS Constellations GNSS Constellations GNSS Constellations GNSS Constellations Channel Configuration (b) GNSS Data Rate (c) RTK Corrections Velocity Accuracy Initialization Time Time Accuracy (clock drift) (r) Air Data Computer Pressure Sensor Range Static Pressure Range Static Pressure Accuracy Dynamic Pressure Accuracy Dynamic Pressure Accuracy Pressure Altitude Range Pressure Altitude Range Pressure Altitude Range Airspeed Accuracy Mach Number Range Mach Number Range Mach Number Range Mach Number Range Static Pressure Over Total Pressure Range Air Density Range Air Density Range Air Density Range	ppm, 10	500 NovAtel OEM7720 IT Dual GPS (L1 C/A, L1C, L2 GLONASS (L1 C/A, L2 C, BeiDou (B1I, B15 E) Galileo (E1, E5 AltBOC, NAWIC/IRNSS (L1 C/A, L1C, L2C, USAS; EGNOS; MSAS; GAC DGPS; RTK, PPP	VovAtel OEM719 Single S	GPS (L: L2C) GLC L2C/A) B2I, B3: E5b) C L1C/B, L: WA.	Dual LC/A, L2P(Y), DNASS (LLC/A, Beidou (BII, 1) Galileo (EI, 22SS (LLC/A, 2C) NavIC (L5) AS; EGNOS; MSA 1 M 3 <45 (cold st	Dual	mosaic-X5 Single Single YP, L2C, L2P(Y), (L1CA, L2CA, CDMA) Id, B2A, B2I, B3I) SESA, ESB, ES NavIC (L5) DGPS; RTK	u-blox ZED-F Dual Sir GPS (L1C/A, L1 GLONASS (L1 L2OF) Galile (E1B/C, ESD BeiDou (B11, B QZSS (L1C/A, L WAAS; EGNOS	2C) OF, 80 (1) (1) (2) (2) (3) (3) (3) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4	Single GPS (L1C/A, L5) GLONASS (L10F) Galileo (E18/C, E5a) BelDou (B11, B2a) QZSS (L1C/A L15 L5) NavIC (L5) GAGAN; SBAS L1C/A; RTK 4 20 M3 3 55 <10 (hot start) 0 AX 000 800	
Computer GN	Receiver Number of GNSS Antennas GNSS Constellations GNSS Constellations GNSS Corrections Channel Configuration (**) GNSS Data Rate (**) RTK Corrections Velocity Accuracy Initialization Time Time Accuracy (clock drift) (**) Air Data Computer Pressure Sensor Range Static Pressure Accuracy Dynamic Pressure Range Static Pressure Accuracy Dynamic Pressure Accuracy Pressure Altitude Range Pressure Altitude Range Pressure Altitude Range Pressure Altitude Range Airspeed Range Airspeed Range Mach Number Range Mach Number Accuracy Static Pressure Over Total Pressure Range Static Pressure Cover Total Pressure Range Static Pressure Over Total Pressure Range Static Pressure Range Air Density Accuracy Outside Air Temperature (OAT) Range	ppm, 10	500 NovAtel OEM7720 IT Dual GPS (L1 C/A, L1C, L2 GLONASS (L1 C/A, L2 C, BeiDou (B1I, B15 E) Galileo (E1, E5 AltBOC, NAWIC/IRNSS (L1 C/A, L1C, L2C, USAS; EGNOS; MSAS; GAC DGPS; RTK, PPP	VovAtel OEM719 Single S	GPS (L: L2C) GLC L2C/A) B2I, B3: E5b) C L1C/B, L: WA.	Dual LC/A, L2P(Y), DNASS (LLC/A, Beidou (B1I, 1) Galileo (E1, 22SS (LLC/A, 2C) NavIC (L5) AS; EGNOS; MSA 1 M 3 <45 (cold st	Dual GPS (L1C/A, L1I L5) GLOMASS L2P, L3 Beldou (B11, 82b, Galileo (E1, AltBoc, E6) S; GAGAN; SBAS; 1 448 00 (max) tart); <20 (hot start ±600 00 to 1100 ±0.1 0.15 to 600 ±0.25 00 to 9000 1 1 0.15 to 600 ±0.25 00 to 9000 1 1 0.5 to 310 0.5 0.01 to 0.99	mosaic-X5 Single Single YP, L2C, L2P(Y), (L1CA, L2CA, CDMA) Id, B2A, B2I, B3I) SESA, ESB, ES NavIC (L5) DGPS; RTK	u-blox ZED-F Dual Sir GPS (L1C/A, L1 GLONASS (L1 L2OF) Galile (E1B/C, ESD BeiDou (B11, B QZSS (L1C/A, L WAAS; EGNOS	2C) OF, 80 (1) (1) (2) (2) (3) (3) (3) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4	Single GPS (L1C/A, L5) GLONASS (L10F) Galileo (E18/C, E5a) BelDou (B11, B2a) QZSS (L1C/A L15 L5) NavIC (L5) GAGAN; SBAS L1C/A; RTK 4 20 M3 35 <10 (hot start) 00 4000	
Computer GN	GNSS Constellations GNSS Constellations GNSS Constellations GNSS Constellations GNSS Constellations Channel Configuration (5) GNSS Data Rate (8) RTIK Corrections Velocity Accuracy Initialization Time Time Accuracy (clock drift) (7) Air Data Computer Pressure Sensor Range Static Pressure Range Static Pressure Range Static Pressure Range Dynamic Pressure Accuracy Dynamic Pressure Accuracy Pressure Altitude Range Pressure Altitude Range Pressure Altitude Range Airspeed Accuracy Mach Number Range Mach Number Range Static Pressure Over Total Pressure Resolution Air Density Range Air Density Range Outside Air Temperature (OAT) Range Outside Air Temperature (OAT) Range Outside Air Temperature (OAT) Range	ppm, 10	500 NovAtel OEM7720 IT Dual GPS (L1 C/A, L1C, L2 GLONASS (L1 C/A, L2 C, BeiDou (B1I, B15 E) Galileo (E1, E5 AltBOC, NAWIC/IRNSS (L1 C/A, L1C, L2C, USAS; EGNOS; MSAS; GAC DGPS; RTK, PPP	VovAtel OEM719 Single S	GPS (L: L2C) GLC L2C/A) B2I, B3: E5b) C L1C/B, L: WA.	Dual LC/A, L2P(Y), DNASS (LLC/A, Beidou (B1I, 1) Galileo (E1, 22SS (LLC/A, 2C) NavIC (L5) AS; EGNOS; MSA 1 M 3 <45 (cold st	Dual	mosaic-X5 Single Single YP, L2C, L2P(Y), (L1CA, L2CA, CDMA) Id, B2A, B2I, B3I) SESA, ESB, ES NavIC (L5) DGPS; RTK	u-blox ZED-F Dual Sir GPS (L1C/A, L1 GLONASS (L1 L2OF) Galile (E1B/C, ESD BeiDou (B11, B QZSS (L1C/A, L WAAS; EGNOS	2C) OF, 80 (1) (1) (2) (2) (3) (3) (3) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4	Single GPS (L1C/A, L5) GLONASS (L10F) Galileo (E18/C, E5a) BelDou (B11, B2a) QZSS (L1C/A L15 L5) NavIC (L5) GAGAN; SBAS L1C/A; RTK 4 20 M3 3 55 <10 (hot start) 0 AX 000 800	
Computer GN	SF Accuracy Receiver Number of GNSS Antennas GNSS Constellations GNSS Constellations GNSS Corrections Channel Configuration (**) GNSS Data Rate (**) RTK Corrections Velocity Accuracy Initialization Time Time Accuracy (clock drift) (**) Air Data Computer Pressure Sensor Range Static Pressure Range Static Pressure Accuracy Dynamic Pressure Range Dynamic Pressure Accuracy Pressure Altitude Range Pressure Altitude Range Pressure Altitude Range Pressure Altitude Range Pressure Altitude Pange Airspeed Range Airspeed Range Mach Number Range Mach Number Accuracy Static Pressure Over Total Pressure Range Outside Air Temperature (OAT) Raspelution Environment	ppm, 10	500 NovAtel OEM7720 IT Dual GPS (L1 C/A, L1C, L2 GLONASS (L1 C/A, L2 C, BeiDou (B1I, B15 E) Galileo (E1, E5 AltBOC, NAWIC/IRNSS (L1 C/A, L1C, L2C, USAS; EGNOS; MSAS; GAC DGPS; RTK, PPP	VovAtel OEM719 Single S	GPS (L: L2C) GLC L2C/A) B2I, B3: E5b) C L1C/B, L: WA.	Dual LC/A, L2P(Y), DNASS (L1C/A, Beldou (BII, 1) Galileo (E1, 22SS (L1C/A, 2C) NavIC (L5) AS; EGNOS; MSA 45 (cold st	Dual GPS (L1C/A, L1I L5) GLOMASS L2P, L3 Beldou (B11, i Beldou (B11, i B2b, Galileo (E1, AltBoc, E6) S; GAGAN; SBAS; I 448 00 (max) 2PEXT ±600 100 to 1100 ±0.1 0.15 to 600 ±0.25 00 to 9000 1 1 0.5 to 310 0.5 0.01 to 0.99 0.63 to 1 1 0.32 to 1.6 0.002 40 to +80	mosaic-X5 Single Single YP, L2C, L2P(Y), (L1CA, L2CA, CDMA) Id, B2A, B2I, B3I) SESA, ESB, ES NavIC (L5) DGPS; RTK	u-blox ZED-F Dual Sir GPS (L1C/A, L1 GLONASS (L1 L2OF) Galile (E1B/C, ESD BeiDou (B11, B QZSS (L1C/A, L WAAS; EGNOS	2C) OF, 80 (1) (1) (2) (2) (3) (3) (3) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4	Single GPS (L1C/A, L5) GLONASS (L10F) Galileo (E18/C, E5a) BelDou (B11, B2a) QZSS (L1C/A L15 L5) NavIC (L5) GAGAN; SBAS L1C/A; RTK 4 20 M3 3 55 <10 (hot start) 0 AX 000 800	
Computer GN	GNSS Constellations GNSS Constellations GNSS Corrections Channel Configuration (5) GNSS Data Rate (6) RTK Corrections Velocity Accuracy Initialization Time Time Accuracy (clock drift) (7) Air Data Computer Pressure Sensor Range Static Pressure Range Static Pressure Range Dynamic Pressure Racuracy Dynamic Pressure Range Dynamic Pressure Accuracy Pressure Altitude Range Pressure Altitude Range Pressure Altitude Range Airspeed Accuracy Mach Number Accuracy Mach Number Range Static Pressure Over Total Pressure Range Static Pressure Over Total Pressure Range Static Pressure Range Mach Number Accuracy Mach Static Pressure Range Mach Static Pressure Range Static Pressure Over Total Pressure Range Static Pressure Range Total Pressure Range Static Pressure Over Total Pressure Range Static Pressure Range Total Pressure Range Static Pressure Range Static Pressure Range Static Pressure Range Total Pressure Range Static Pressure Range Total Pressu	ppm, 10	500 NovAtel OEM7720 IT Dual GPS (L1 C/A, L1C, L2 GLONASS (L1 C/A, L2 C, BeiDou (B1I, B15 E) Galileo (E1, E5 AltBOC, NAWIC/IRNSS (L1 C/A, L1C, L2C, USAS; EGNOS; MSAS; GAC DGPS; RTK, PPP	VovAtel OEM719 Single S	GPS (L: L2C) GLC L2C/A) B2I, B3: E5b) C L1C/B, L: WA.	Dual LC/A, L2P(Y), DNASS (L1C/A, Beldou (B1I, 1) Gailleo (E1, 22SS (L1C/A, 2C) NavIC (L5) AS; EGNOS; MSA 1 MI MI	Dual GPS (L1C/A, L1I L5) GLOMASS L2P, L3 Beidou (B11, B2b, Galileo (E1, AltBoc, E6) Sr; GAGAN; SBAS; L48 00 (max) Cart); <20 (hot star 2PEXT ±600 00 to 1100 ±0.1 0.15 to 600 ±0.1 0.15 to 600 1 5 to 310 0.5 0.01 to 0.99 0.63 to 1 1 3 to 1.6 0.002 40 to +85 0.01 40 to +85 0.01	mosaic-X5 Single Single YP, L2C, L2P(Y), (L1CA, L2CA, CDMA) Id, B2A, B2I, B3I) SESA, ESB, ES NavIC (L5) DGPS; RTK	u-blox ZED-F Dual Sir GPS (L1C/A, L1 GLONASS (L1 L2OF) Galile (E1B/C, ESD BeiDou (B11, B QZSS (L1C/A, L WAAS; EGNOS	2C) OF, 80 (1) (1) (2) (2) (3) (3) (3) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4	Single GPS (L1C/A, L5) GLONASS (L10F) Galileo (E18/C, E5a) BelDou (B11, B2a) QZSS (L1C/A L15 L5) NavIC (L5) GAGAN; SBAS L1C/A; RTK 4 20 M3 3 55 <10 (hot start) 0 AX 000 800	
Computer GN	SF Accuracy Receiver Number of GNSS Antennas GNSS Constellations GNSS Constellations Channel Configuration (5) GNSS Data Rate (6) RTK Corrections Velocity Accuracy Initialization Time Time Accuracy (Lock drift) (7) Air Data Computer Pressure Sensor Range Static Pressure Accuracy Dynamic Pressure Accuracy Dynamic Pressure Range Dynamic Pressure Accuracy Pressure Altitude Range Pressure Altitude Range Pressure Altitude Range Pressure Altitude Range Pressure Altitude Prange Airspeed Range Airspeed Range Mach Number Accuracy Static Pressure Over Total Pressure Range Static Pressure Over Total Pressure Range Static Pressure Over Total Pressure Range Outside Air Temperature (OAT) Range Outside Air Temperature (OAT) Range Outside Air Temperature (OAT) Raspeuture ENC/EMI Altitude ENC/EMI Altitude Acoustic noise	ppm, 10	500 NovAtel OEM7720 IT Dual GPS (L1 C/A, L1C, L2 GLONASS (L1 C/A, L2 C, BeiDou (B1I, B15 E) Galileo (E1, E5 AltBOC, NAWIC/IRNSS (L1 C/A, L1C, L2C, USAS; EGNOS; MSAS; GAC DGPS; RTK, PPP	VovAtel OEM719 Single S	GPS (L: L2C) GLC L2C/A) B2I, B3: E5b) C L1C/B, L: WA.	Dual LC/A, L2P(Y), DNASS (L1C/A, Beldou (B1I, 1) Gailleo (E1, 22SS (L1C/A, 2C) NavIC (L5) AS; EGNOS; MSA 1 MI MI	Dual GPS (L1C/A, L1I GPS (L1C/A, L1I L5) GLOMASS L2P, L3 Beldou (B11, B2b, Galileo (B1, AlBoc, E6) S; GAGAN; SBAS; L48 00 (max) 2PEXT ±600 100 to 1100 ±0.1 0.15 to 600 1 0.15 to 5000 1 1 0.15 to 1000 1 1 1 1 1 1 1 1 1 1 1 1	mosaic-X5 Single Single YP, L2C, L2P(Y), (L1CA, L2CA, CDMA) Id, B2A, B2I, B3I) SESA, ESB, ES NavIC (L5) DGPS; RTK	u-blox ZED-F Dual Sir GPS (L1C/A, L1 GLONASS (L1 L2OF) Galile (E1B/C, ESD BeiDou (B11, B QZSS (L1C/A, L WAAS; EGNOS	2C) OF, 80 (1) (1) (2) (2) (3) (3) (3) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4	Single GPS (L1C/A, L5) GLONASS (L10F) Galileo (E18/C, E5a) BelDou (B11, B2a) QZSS (L1C/A L15 L5) NavIC (L5) GAGAN; SBAS L1C/A; RTK 4 20 M3 3 55 <10 (hot start) 0 AX 000 800	
Computer GN	Receiver Number of GNSS Antennas GNSS Constellations GNSS Constellations GNSS Corrections Channel Configuration (3) GNSS Data Rate (6) RTK Corrections Velocity Accuracy Initialization Time Time Accuracy (clock drift) (7) Air Data Computer Pressure Sensor Range Static Pressure Range Static Pressure Range Static Pressure Accuracy Dynamic Pressure Accuracy Dynamic Pressure Accuracy Pressure Altitude Range Pressure Altitude Range Airspeed Accuracy Airspeed Accuracy Mach Number Range Mach Number Range Mach Number Range Mach Number Range Static Pressure Over Total Pressure Range Static Pressure Over Total Pressure Range Static Pressure Over Total Pressure Range Gutside Air Temperature (OAT) Range Outside Air Temperature (OAT) Resolution Environment Operational and Storage Temperature	ppm, 10	500 NovAtel OEM7720 IT Dual GPS (L1 C/A, L1C, L2 GLONASS (L1 C/A, L2 C, BeiDou (B1I, B15 E) Galileo (E1, E5 AltBOC, NAWIC/IRNSS (L1 C/A, L1C, L2C, USAS; EGNOS; MSAS; GAC DGPS; RTK, PPP	VovAtel OEM719 Single S	GPS (L: L2C) GLC L2C/A) B2I, B3: E5b) C L1C/B, L: WA.	Dual LC/A, L2P(Y), DNASS (L1C/A, Beldou (BII,) Galileo (E1, 2CS (L1C/A, 2C) NavIC (L5) AS; EGNOS; MSA 45 (cold sl 30 -5i (1) MII UI	Dual	mosaic-X5 Single Single YP, L2C, L2P(Y), (L1CA, L2CA, CDMA) Id, B2A, B2I, B3I) SESA, ESB, ES NavIC (L5) DGPS; RTK	u-blox ZED-F Dual Sir GPS (L1C/A, L1 GLONASS (L1 L2OF) Galile (E1B/C, ESD BeiDou (B11, B QZSS (L1C/A, L WAAS; EGNOS	2C) OF, 80 (1) (1) (2) (2) (3) (3) (3) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4	Single GPS (L1C/A, L5) GLONASS (L10F) Galileo (E18/C, E5a) BelDou (B11, B2a) QZSS (L1C/A L15 L5) NavIC (L5) GAGAN; SBAS L1C/A; RTK 4 20 M3 3 15 <10 (hot start) 0 1AX 00 800	

GPS-Aided INS-DM INS-BM Datasheet Revision 1.25

	Electrical		
=	Input power protection	-	MIL-STD-1275 (optional)
10	Supply voltage	V DC	9 to 36 (26±10 for MIL-STD-1275 protection)
<u>a</u>	Output data format	-	Binary, NMEA 0183 ASCII characters
Gen	1 PPS level	V DC TTL	3.3 / 5 / differential
	Physical		
	Size	mm	160.4 x 141.2 x 61.1
	Weight (8)	gram	1345

Specifications subject to change without notice

(1) GPS only. (2) For Novatel OEM7720 GNSS receiver only. Requires a subscription to a TerraStar data service. (3) RMS, incremental error growth from steady state accuracy. Post-processing results using third party software. (4) Dynamic accuracy may depend on the type of motion. (5) Tracks up to 60 L1/L2 satellites. (6) If tracking GPS Only. (7) Time accuracy does not include biases due to RF or antenna delay. (8) Depends on configuration.

Product Code Structure

Model	IMU type	Gyro	Acc	Calibration	Connector	Encoder support	Pressure Ports	Color	External Compass	Data Logger	GNSS receiver	Version	Interface
INS-DM	M1	G2000	A8	TGA	C71	E	0P	В	SAMC	S64	0719	V9	12345
INS-BM	E1	G450	A20	TMGA	C73		2P				07720	VD9	123457
	A1	G400	A40			•	2PEXT				SMX5		123458
	N11			<u>-</u> '			2PMAX				DMX5		
	B1							_			DMH		
•											ZF9P		
											ZF9P-L5		
											ZD9P		

Example:

INS-DM-A1-G2000-A8-TGA-C71E-2P-B-SAMC-O7720-VD9.12345

INS-BM-N11-G2000-A40-TMGA-C73E-2PEXT-B-SAMC-S64-SMX5-V9.12345

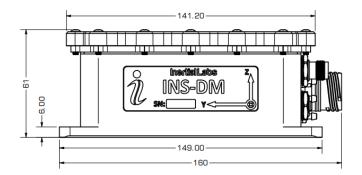
Product code details:

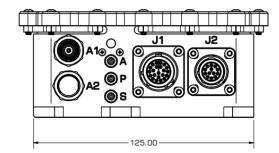
- INS-DM: Dual Antenna GPS-Aided Inertial Navigation System
- INS-BM: Single Antenna GPS-Aided Inertial Navigation System
- M1: Inertial Labs miniAHRS Attitude & Heading Reference System
- E1: Inertial Labs KERNEL-110 IMU
- A1: Inertial Labs KERNEL-210 IMU
- N11: Inertial Labs IMU-NAV-200
- B1: Honeywell HG4930 CA51 IMU
- G2000: Gyroscopes measurement range = ± 2000 deg/sec
- G450: Gyroscopes measurement range = ±450 deg/sec
- G400: Gyroscopes measurement range = ±400 deg/sec (Honeywell HG4930 CA51 IMU only)
- A40: Accelerometers measurement range ±40 g
- A20: Accelerometers measurement range ±20 g (Honeywell HG4930 CA51 IMU only)
- A8: Accelerometers measurement range ±8 g
- TGA: Calibration of IMU (Gyroscopes and Accelerometers) in operational temperature range
- TMGA: Calibration of IMU (Magnetometers, Gyroscopes and Accelerometers) in operational temperature range
- C71: two connectors (22 main; 13 auxiliary), enclosure with asymmetrical alignment mounting holes
- C73: C71 with MIL-STD-1275 protection
- E: Encoder support (default)
- 0P: Zero Airspeed Pressure Ports (Total/Static)
- 2P: Two Airspeed Pressure Ports with Standard Range (Total/Static, Honeywell 025MD)
- 2PEXT: Two Airspeed Pressure Ports with Extended Range (Total/Static, Honeywell 600MD)
- 2PMAX: Two Airspeed Pressure Ports with Extended Range (Total/Static, Honeywell 004BD)
- B: Black Color of enclosure (default)
- SAMC: External Stand-Alone Magnetic Compass (default)
- S64: 64GB embedded Data Logger (optional)
- O719: NovAtel OEM719: GPS+GLO+GAL+BDS+QZSS, L1/L2/L5/L6/E1/E5a/E5b/AltBOC/E6/B1/B2I/B2b/B2a/B3, NavIC L5, SBAS L1/L5, RTK+PPP+Single Point+DGPS PNT, 20 Hz Data Output Rate, Base Station Corrections + Measurements, GRIT Interference Mitigation and Spoofing Detection Includes GLIDE
- O7720: NovAtel OEM7720: GPS+GAL+BDS+QZSS, L1/L2/L5/E1/E5a/E5b/AltBOC/B1/B2I/B2a/B2b, NavIC L5, SBAS L1/L5 Dual Antenna Activation, RTK+PPP+Single Point+DGPS PNT, ALIGN Heading, 20 Hz Data Output Rate, Base Station Corrections + Measurements, GRIT Interference Mitigation and Spoofing Detection Includes GLIDE & RAIM
- SMX5: Septentrio mosaic-X5: GPS+GLO+BDS+GAL+QZSS, L1C/A/L1PY/L2C/L2P(Y)/L5/L1CA/L2CA/L2P/L3 CDMA/B1I/B1C/B2a/B2I/B2b/B3I/E1/E5a/E5b/ E5 AltBoc/E6, NavIC L5, SBAS, L-band, RTK, AIM+ anti-jamming, anti-spoofing Advanced Interference Monitoring and Mitigation
- DMX5: Dual Septentrio mosaic-X5: GPS+GLO+BDS+GAL+QZSS, L1C/A/L1PY/L2C/L2P(Y)/L5/L1CA/L2CA/L2P/L3 CDMA/B1I/B1C/B2a/B2I/B2b/B3I/E1/E5a/ E5b/ E5 AltBoc/E6, NavIC L5, SBAS, L-band, RTK, Dual Antenna GNSS Heading, AIM+ anti-jamming, anti-spoofing Advanced Interference Monitoring and
- DMH: Septentrio mosaic-H: GPS+GL0+BDS+GAL+QZSS, L1C/A/L2P(Y)/L2C/L1CA/L2CA/B1I/B2I/B3I/E1/E5b/L1C/A/L1C/B/L2C, NavIC L5, SBAS, RTK, Dual Antenna GNSS Heading, AIM+ anti-jamming, anti-spoofing Advanced Interference Monitoring and Mitigation
- ZF9P: u-blox ZED-F9P-02B: GPS+GLO+GAL+BDS+QZSS, L1C/A/L2C/L10F/L2OF/E1B/C/E5b/B1I/B2I/L1C/A/L1S/L2C/L5, SBAS, RTK, Active CW detection and removal, Onboard bandpass filter, Advanced anti-spoofing algorithms
- ZF9P-L5: u-blox ZED-F9P-15B: GPS+GLO+GAL+BDS+QZSS, L1C/A/L5/L10F/E1B/C/E5a/B1I/B2a/L1C/A/L1S/L5/, NavIC L5, SBAS, RTK, Active CW detection and removal, Onboard bandpass filter, Advanced anti-spoofing algorithms
- ZD9P: Dual u-blox ZED-F9P-02B: GPS+GLO+GAL+BDS+QZSS, L1C/A/L2C/L10F/L20F/E1B/C/E5b/B1I/B2I/L1C/A/L1S/L2C/L5, SBAS, RTK, Dual Antenna GNSS Heading, Active CW detection and removal, Onboard bandpass filter, Advanced anti-spoofing algorithms
- V9: Single Antenna GNSS Receiver
- VD9: Dual Antenna GNSS Receiver
- .12345: RS-232, RS-422, RS-485 (for stand-alone magnetic compass only), CAN, Ethernet
- .123457: RS-232, RS-422, RS-485 (for stand-alone magnetic compass only), CAN, Ethernet, ARINC-429
- .123458: RS-232, RS-422, RS-485 (for stand-alone magnetic compass only), CAN, Ethernet, RS-422 interface of COM4

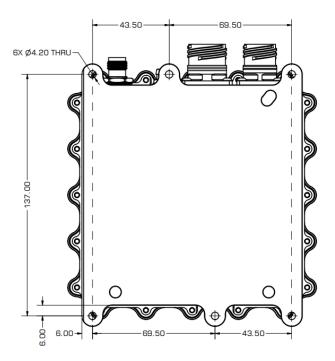
Inertial Labs Address: 39959 Catoctin Ridge Street, Paeonian Springs, VA 20129 U.S.A. Tel: +1 (703) 880-4222, Website: www.inertiallabs.com

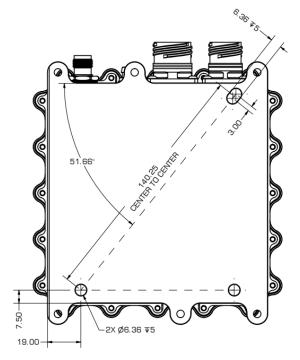


INS-DM Mechanical Interfaces Description









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