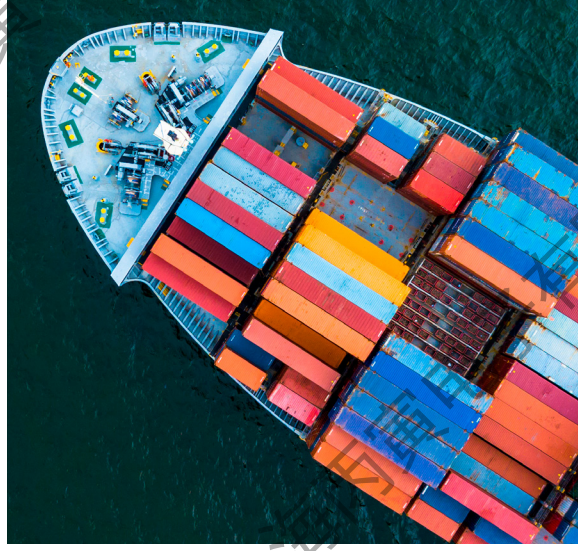
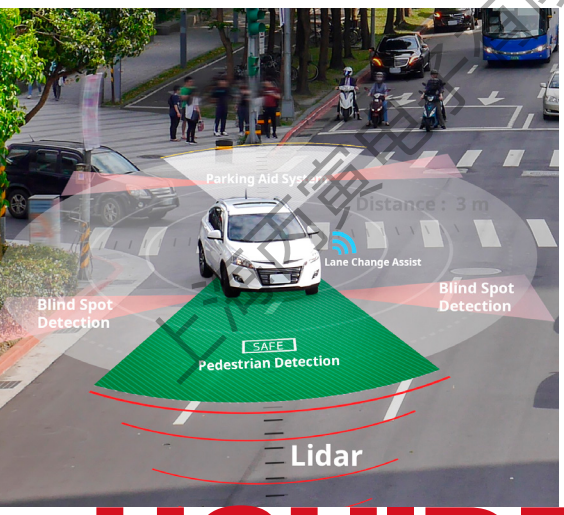




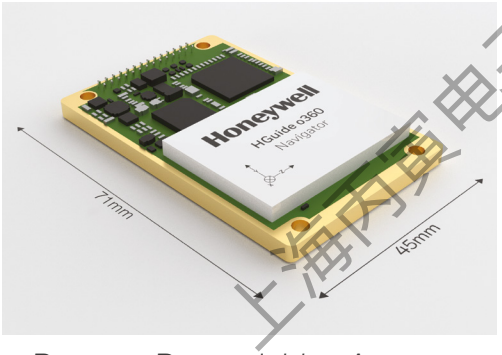
HGUIDE o360
INERTIAL/GNSS NAVIGATOR

PRE-RELEASE NOT READY FOR PUBLICATION

Honeywell

HGUIDE o360 INERTIAL/GNSS NAVIGATOR

The HGuide o360 is a single-card INS/GNSS, all attitude Inertial/GNSS Navigator designed for any platform where high performance navigation data is required in an ultra-low SWAP package.



Proven - Dependable - Accurate

The HGuide o360 INS/GNSS navigator contains a powerful dual-antenna, multifrequency, multi-constellation, RTK capable GNSS receiver and Honeywell's leading edge i300 IMU technology.

Honeywell's sensor fusion expertise blends the i300 IMU and GNSS data to deliver an accurate, robust navigation service to your application with all the functionalities that you need, even through GNSS outages. The HGuide o360 output data includes time-stamped position, velocity, angular rate, linear acceleration, roll, pitch and heading information. In dual-antenna mode, the device supports GNSS-based heading measurements and initialization.

KEY HONEYWELL ADVANTAGES

- Honeywell proven navigation algorithms
- World-class inertial sensor development, calibration, and compensation
- Cross Platform Compatibility with the HGuide n380 and n580
- Proven reliability, dependability, and ruggedness
- Onboard NTRIP Accepts RTCM3 GNSS Corrections
- Field-upgradeable SW
- IMU Only Data Port
- ECCN 7A994. Non-ITAR
- Vehicle and railroad operating modes (LAND CONSTRAINTS)
- Standard Odometer DMI input
- RINEX Generation for Post Processing

HGUIDE o360 TYPICAL KEY CHARACTERISTICS

GNSS Capability	SBAS, RTK, and Dual Antenna Standard
GNSS Signals (Standard)	GPS L1/L2; GLONASS L1/L2; BeiDou Phase 2&3 B1/B2/B3; Galileo E1/E5b
Time to First Fix/Signal ReAcquisition	Cold Start, 60 Sec: Warm Start, 30 Sec, Hot Start with Heading Fix, 10 Sec
Shock/Vibration	40 g for 11 msec (MIL-STD-810G) / Random 2.2g's RMS 20-2000 Hz
Supply Voltage/Power Consumption	+3.3 VDC +/- 4% / 3.5 Watts Room Temperature
Weight/Volume	30g / 71mm x 46mm x 12mm
Temperature (Op/Non-Op)*	-40°C to +85°C (0.8°C/min Max) / -54°C to 85°C (3°C/min Max)
Regulatory*	FCC, ISED, CE, RoHS, WEEE Certification Capable : COCOM Limit Compliant
Communication Ports	3.3 V CMOS (4x) , USB, Ethernet, 2 x CAN (J1339)
Discrete Signals	1 x PPS Output, 2 x Event In, Direct Quadrature Encoder Inputs
Data Storage	On-board Micro-SD Card Slot with optional USB access. 16 GB Typical Customer Size
Board Connector	2 x 14-pin male header (2 mm); Samtec PN TMM-114-03-G-D
GNSS Antenna Connector	RF: 2 x MMCX, female, straight, 100 mA Maximum Current

*Requires compliant housing and electrical interface.

HGUIDE o360 NAVIGATION PERFORMANCE

POSITION		VELOCITY		HEADING[1]	PITCH/ROLL
Horizontal (m, 1σ)	Vertical (m, 1σ)	Horizontal (m, 1σ)	Vertical (m, 1σ)	(°, 1σ)	(°, 1σ)
< 0.01 RTK < 0.6 SBAS	0.025 RTK < 0.8 SBAS	< 0.015	< 0.01	< 0.08	< 0.03

[1]In dual antenna mode with 2m baseline; longer baselines improve performance

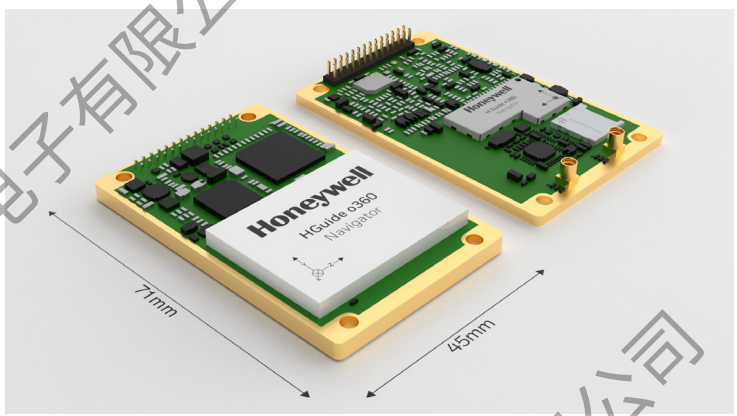
HGUIDE o360 RTK DUAL ANTENNA PERFORMANCE – GNSS OUTAGES WITH NO AIDING[2]

RMS Error	3 Seconds	10 Seconds	30 Seconds
Horizontal (meter)	0.12	0.3	2.5
Vertical (meter)	0.060	0.2	0.75
Heading (degree)	0.1	0.125	0.15
Horizontal Velocity (meters/s)	0.030	0.08	0.16
Vertical Velocity (meters/s)	0.01	0.02	0.06

[2]Results in table do not include use of any aiding. Unit accepts odometer pulse count aiding through the direct quadrature encoder input. HGuide MOTION DETECT and VEHICLE LAND CONSTRAINT modes also greatly improve railroad and car performance during GNSS outages even without an odometer. Contact Honeywell for more information.

o360 SIGNAL OVERVIEW

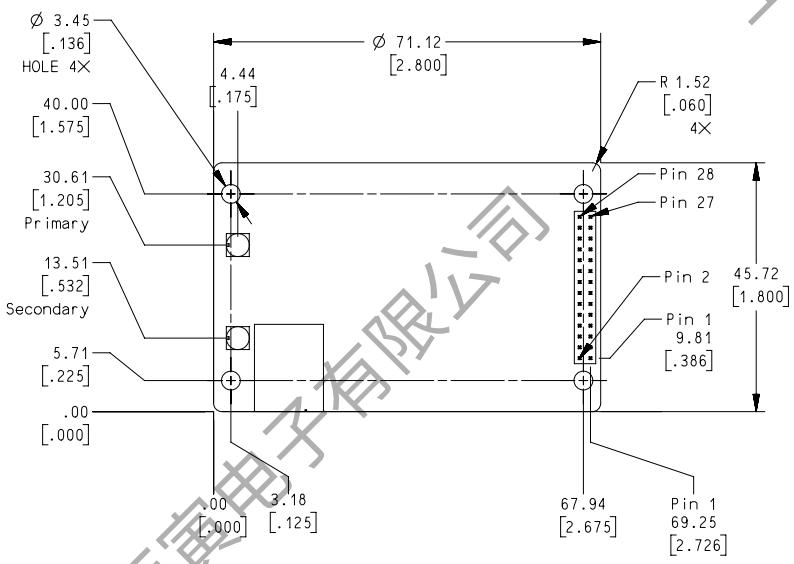
Signal	Electrical	Device Formats
COM1	3.3 VDC CMOS	HGNSI or NMEA
COM2 RX	3.3 VDC CMOS	RTCMv3
COM2 TX		HGNSI (GNSS Only), SGPGGA, $GPRMC
COM3 RX & TX	3.3 VDC CMOS	HGNSI or NMEA
COM4 RX & TX	3.3 VDC CMOS	i300 IMU Protocol
Ethernet	TBD	HGNSI J1939, NMEA, NTRIP (Pick 2)
USB TX Only	USB 2	HGNSI or NMEA
USB TX Read/ Write		Mass Storage Access
CAN	3.3 VDC CMOS	J1339

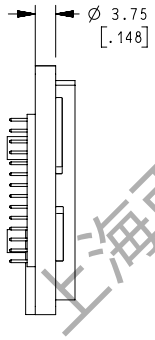


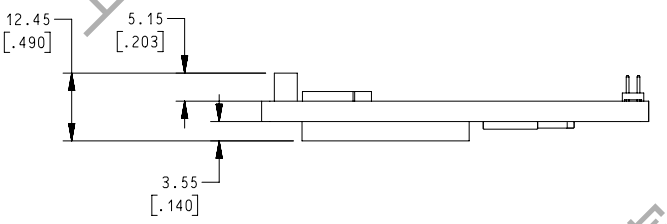
o360 2 X 14-PIN MALE HEADER (2 mm)

o360 Function	PIN #		0360 Function
COM2 RX	1	2	USB VBUS
COM2 TX	3	4	ETH BIAS
COM4 RX	5	6	3.3V IN
USB -	7	8	USB +
RESET (Active Low)	9	10	CAN1 RX DMI PHA RX
CAN1 TX EVENT IN2/DMI PHB RX	11	12	CAN2 RX
EVENT IN1	13	14	GND
COM1 TX	15	16	COM1 RX
GND	17	18	COM3 TX
COM3 RX	19	20	GND
COM4 TX	21	22	GND
PPS OUT	23	24	CAN2 TX
ETH TX+	25	26	ETH RX+
ETH TX-	27	28	ETH RX-

o360 MECHANICAL DRAWINGS





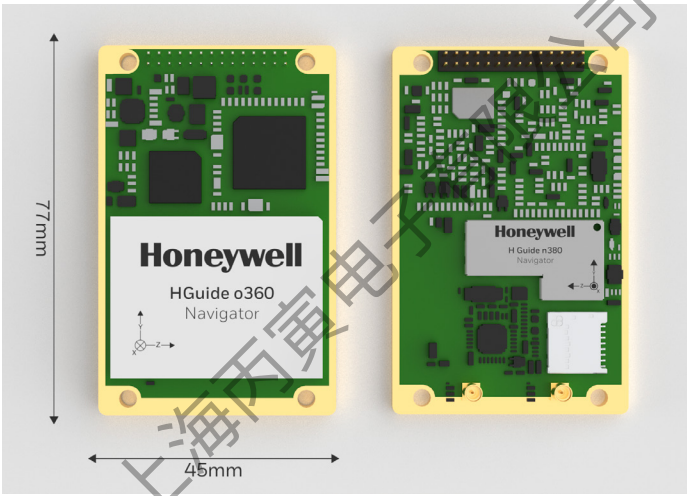


An STP file is available from Honeywell on request.

The referenced Center of Navigation Point is coincident with Geometric center of o360. All dimensions are in millimeters.

It is recommended to use 6#-32 UNC flat head screws or studs to install and secure the o360. M3 flat head screw can be used for the occasion where the installation alignment requirements are not high.

HGUIDE o360 PART NUMBER	
Marketing	**Honeywell Part Number**
o360-CA88	68960360-CA88



For More Information
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THE FUTURE IS WHAT WE MAKE IT

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