



INTERREX



DEBUT x INTERREX series represents a collaborative venture between Druid Technology and INTERREX, a renowned color-ring manufacturer. This co-branded product line showcases a high-efficiency solar unit capable of sustained performance even in low-light environments. It integrates a high-precision GNSS module alongside multiple sensors for enhanced functionality.

Powered by the DEBUT OS, the INTERREX series offers robust onboard decision-making and computational capabilities. Seamless connectivity is ensured through INTELINK (Bluetooth 5.1), while users can benefit from a range of network transmission options including 2G, 4G, and 5G (both NB-IoT and LTE-M).



INTERREX - RINGS & TELEMETRY

BASIC SPECIFICATIONS

MODEL	INTERREX 12 / 18 / 21 / 30
Appearance	
Dimensions (LWD)	43 mm x 25 mm x 12/18/21/30 mm
Battery Capacity	30~110 mAh
Battery Life	Over 300~1000 positions under optimal GNSS satellite view at 5-minute interval
Battery Type	Lithium polymer rechargeable battery with under-and-over-charge protection
Solar type	GaAs solar unit (30% efficiency) with good performance under weak light
Antenna	Internal
Housing	ABS & PC injection molding
Color	Light brown
GNSS Module	Precision: CEP (50%) 5m Maximum update rate: 10 Hz
Working Temperature	-20°C~60°C (enough for very cold winter if close to warm-blood animal body)
Waterproof	IP 68 (2 ATM)
Data Types	<ul style="list-style-type: none"> - GNSS: longitude, latitude, altitude, altitude (ellipsoid), course, satellite quantity - ENV: voltage, light intensity, temperature - ODBA (overall dynamic body acceleration) - ACC: x/y/z acceleration data (upon request) - Beacon: with Debut series gateway devices
Data Storage	<p>Collected data will be stored in memory before transmission.</p> <ul style="list-style-type: none"> - Flash memory: 16 MB - Regular data storage: 460 days at default setting (1h GNSS+1h ENV+10 min ODBA) - BOOST data storage: 280,000 pieces - ACC data storage: 28,700 pieces
Working Schedule	Programmable from 1 min, changeable via 2G/4G/5G network, or instantly via INTELINK (Bluetooth)
Firmware Upgrade	Remotely via 2G/4G/5G network, or instantly via INTELINK (Bluetooth)



INTERREX - RINGS & TELEMETRY

INTERREX 2G

SUB-MODELS

Name	Weight	Battery
INTERREX 2G 12 lite ^[1]	8.9±0.1g	30 mAh
INTERREX 2G 12	9.4±0.1g	30 mAh
INTERREX 2G 18 lite	9.6±0.1g	30 mAh
INTERREX 2G 18	10.1±0.1g	30 mAh
INTERREX 2G 21	10.9±0.1g	30 mAh

^[1] The INTERREX 12/18 lite models signify the implementation of specialized craftsmanship aimed at reducing weight. Theoretically, these "lite" models may exhibit increased vulnerability to electromagnetic interference from the surrounding environment compared to their regular counterparts. However, field tests have demonstrated that despite this susceptibility, the "lite" models perform comparably to the regular ones when utilized in wilderness settings.

TRANSMISSION MODULE

Band	Uplink (MHz)	Downlink (MHz)	Output Power (dBm)
GSM850	824.2 ~ 848.8	869.2 ~ 893.8	33
EGSM900	880.2 ~ 914.8	925.2 ~ 959.8	33
DCS1800	1710.2 ~ 1784.8	1805.2 ~ 1879.8	30
PCS1900	1850.2 ~ 1909.8	1930.2	~ 1989.8

Maximum uplink/downlink data rate: 85.6 Kbps/85.6 Kbps



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INTERREX 4G

SUB-MODELS

Name	Weight	Battery
INTERREX 4G 12	8.8±0.2g	30 mAh
INTERREX 4G 18	9.6±0.2g	30 mAh
INTERREX 4G 18 plus ^[1]	11.4±0.2g	110 mAh
INTERREX 4G 21	10.5±0.2g	30 mAh
INTERREX 4G 21 plus	12.2±0.2g	110 mAh

^[1] INTERREX 18/21 plus models indicates that two batteries have been used to extend battery life when solar charging is not ideal.

TRANSMISSION MODULE

Band	Uplink (MHz)	Downlink (MHz)	Output Power (dBm)
LTE-FDD B1	1920 ~1980	2110 ~2170	23 dBm±2.7 dB
LTE-FDD B3	1710 ~1785	1805 ~1880	23 dBm±2.8 dB
LTE-FDD B5	869 ~ 894	824 ~ 849	23 dBm±2.9 dB
LTE-FDD B8	880 ~915	925 ~960	23 dBm±2.1 dB

Maximum output power: 23 dBm

Maximum uplink/downlink data rate: 5 Mbps/10 Mbps



INTERREX - RINGS & TELEMETRY

INTERREX 5G

SUB-MODELS

Name	Weight	Battery
INTERREX 5G 12	8.4±0.2g	30 mAh
INTERREX 5G 18	9.2±0.2g	30 mAh
INTERREX 5G 18 plus	10.9±0.2g	110 mAh
INTERREX 5G 21	10.1±0.2g	30 mAh
INTERREX 5G 21 plus	11.8±0.2g	110 mAh

TRANSMISSION MODULE

INTERREX 5G supports both NB-IoT and LTE-M (or called eMTC) frequency bands. You can activate selected bands for usage in different regions. Below lists all the bands that are supported.

■ NB-IoT bands

Band	Duplex mode	f (MHz)	Uplink (MHz)	Downlink (MHz)	UL/DL Bandwidth (MHz)	Duplex spacing (MHz)	Channel bandwidths (kHz)
B1	HD-FDD	2100	1920-1980	2110-2170	60	190	180(/200)
B2	HD-FDD	1900	1850-1910	1930-1990	60	80	180(/200)
B3	HD-FDD	1800	1710-1785	1805-1880	75	95	180(/200)
B4	HD-FDD	1700	1710 -1755	2110 -2155	45	400	180(/200)
B5	HD-FDD	850	824-849	869-894	25	45	180(/200)
B8	HD-FDD	900	880-915	925-960	25	45	180(/200)
B11	HD-FDD	1500	1427.9-1447.9	1475.9-1495.9	20	48	180(/200)
B12	HD-FDD	700	699-716	729-746	17	30	180(/200)
B13	HD-FDD	700	777-787	746-756	10	31	180(/200)
B14	HD-FDD	700	788-798	758-768	10	30	180(/200)
B17	HD-FDD	700	704-716	734-746	12	30	180(/200)
B18	HD-FDD	800	815-830	860-875	15	45	180(/200)
B19	HD-FDD	800	830-845	875-890	15	45	180(/200)
B20	HD-FDD	800	832-862	791-821	30	41	180(/200)
B25	HD-FDD	1900	1850-1915	1930-1995	65	80	180(/200)
B26	HD-FDD	850	814-849	859-894	35	45	180(/200)
B28	HD-FDD	700	703-748	758-803	45	55	180(/200)



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B31	HD-FDD	450	452.5-457.5	462.5-467.5	5	10	180(/200)
B66	HD-FDD	1700	1710-1780	2110-2200	70/90	400	180(/200)

▪ LTE-M (eMTC) bands

Band	Duplex mode	f(MHz)	Uplink (MHz)	Downlink (MHz)	UL/DL Bandwidth (MHz)	Duplex spacing (MHz)	Channel bandwidths (MHz)
B1	HD-FDD	2100	1920-1980	2110-2170	60	190	1.08(/1.4)
B2	HD-FDD	1900	1850-1910	1930-1990	60	80	1.08(/1.4)
B3	HD-FDD	1800	1710-1785	1805-1880	75	95	1.08(/1.4)
B4	HD-FDD	1700	1710 -1755	2110 -2155	45	400	1.08(/1.4)
B5	HD-FDD	850	824-849	869-894	25	45	1.08(/1.4)
B8	HD-FDD	900	880-915	925-960	25	45	1.08(/1.4)
B11	HD-FDD	1500	1427.9-1447.9	1475.9-1495.9	20	48	1.08(/1.4)
B12	HD-FDD	700	699-716	729-746	17	30	1.08(/1.4)
B13	HD-FDD	700	777-787	746-756	10	31	1.08(/1.4)
B14	HD-FDD	700	788-798	758-768	10	30	1.08(/1.4)
B17	HD-FDD	700	704-716	734-746	12	30	1.08(/1.4)
B18	HD-FDD	800	815-830	860-875	15	45	1.08(/1.4)
B19	HD-FDD	800	830-845	875-890	15	45	1.08(/1.4)
B20	HD-FDD	800	832-862	791-821	30	41	1.08(/1.4)
B25	HD-FDD	1900	1850-1915	1930-1995	65	80	1.08(/1.4)
B26	HD-FDD	850	814-849	859-894	35	45	1.08(/1.4)
B28	HD-FDD	700	703-748	758-803	45	55	1.08(/1.4)
B31	HD-FDD	450	452.5-457.5	462.5-467.5	5	10	1.08(/1.4)
B66	HD-FDD	1700	1710-1780	2110-2200	70/90	400	1.08(/1.4)

Maximum output power: 23 dBm

ACCESSORIES

INTERREX series is designed with flexible holes to support body or leg-loop harness attachment method.

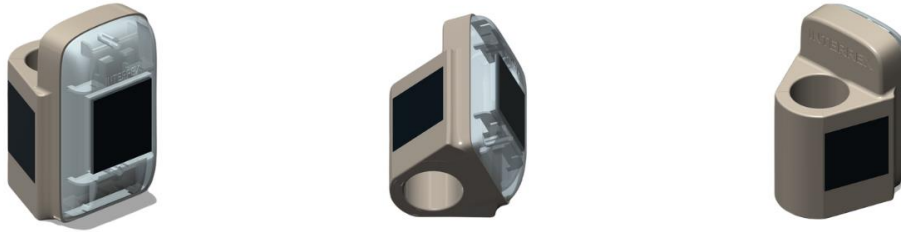
BACK-MOUNT

Each device will be provided along with 1 meters of 4mm wide teflon tape (for harness use) and 6 aluminum rings (for binding the harness) for free.





INTERREX-LEG & INTERREX-COLLAR



INTERREX-LEG/COLLAR series is solar-driven GPS-Cellular-ACC trackers suitable for leg/neck deployment. It can use all types of cellular network to suit different regions. Devices may be offered in versions with different internal diameters. To ensure efficient charging in all conditions, 3 solar panels are used. Implementing them on birds is very easy and extremely fast because thanks to the snap-fit design, the ring or collar closes with a 'click' system.

INTERREX-COLLAR - Basic specifications of existing models (other internal diameters are also possible).



Inner diameter	42mm	45mm	55mm		
Weight	33g – standard 35g - plus	38g – standard 40g - plus	49g – standard 52g – plus		
Dimensions (HxWxL)	45x52x61 – standard 45x52x67 – plus	45x57x65 – standard 45x57x71 – plus	54x68x75 – standard 54x58x81 – plus		
Battery	30mAh – standard 110mAh – plus	30mAh – standard 110mAh – plus	30mAh – standard 110mAh – plus		

INTERREX-LEG devices

INTERREX 4G C6 9

Weight – 12.8 (+/- 0.2) g | Dimensions (HxWxL) – 44x28x26mm



INTERREX 4G C6 10.5

Weight – 13.0 (+/- 0.2) g | Dimensions (HxWxL) – 44x28x27mm



INTERREX 4G C6 11.5

Weight – 13.3 (+/- 0.2) g | Dimensions (HxWxL) – 44x28x28mm



INTERREX 4G C6 12.5

Weight – 13.6 (+/- 0.3) g | Dimensions (HxWxL) – 44x28x29mm



INTERREX 4G C6 13

Weight – 13.2 (+/- 0.2) g | Dimensions (HxWxL) – 44x28x30mm



INTERREX 4G C6 14

Weight – 13.5 (+/- 0.3) g | Dimensions (HxWxL) – 44x28x31mm



INTERREX 4G C6 16

Weight – 15.3 (+/- 0.3) g | Dimensions (HxWxL) – 44x25x34mm



INTERREX 4G C6 18

Weight – 15.0 (+/- 0.3) g | Dimensions (HxWxL) – 44x26x35mm



INTERREX 4G C6 21

Weight – 14.5 (+/- 0.3) g | Dimensions (HxWxL) – 44x26x38mm



INTERREX 4G C6 22

Weight – 14.6 (+/- 0.3) g | Dimensions (HxWxL) – 44x26x39mm



INTERREX 4G C6 25

Weight – 16.5(+/- 0.3) g | Dimensions (HxWxL) – 44x26x42mm

