


# 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).

# 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"> <li>- GNSS: longitude, latitude, altitude, altitude (ellipsoid), course, satellite quantity</li> <li>- ENV: voltage, light intensity, temperature</li> <li>- ODBA (overall dynamic body acceleration)</li> <li>- ACC: x/y/z acceleration data (upon request)</li> <li>- Beacon: with Debut series gateway devices</li> </ul>			
Data Storage	<p>Collected data will be stored in memory before transmission.</p> <ul style="list-style-type: none"> <li>- Flash memory: 16 MB</li> <li>- Regular data storage: 460 days at default setting (1h GNSS+1h ENV+10 min ODBA)</li> <li>- BOOST data storage: 280,000 pieces</li> <li>- ACC data storage: 28,700 pieces</li> </ul>			
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 2G

## SUB-MODELS

Name	Weight	Battery
INTERREX 2G 12 lite <sup>[1]</sup>	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

<sup>[1]</sup> 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

# 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 <sup>[1]</sup>	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

<sup>[1]</sup> 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 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)

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

# PRICING

Sub Model-Name	Device (Feed Subscription)		Ecotopia Data Services <sup>[1]</sup> (per unit per year)	Debut Renewal Plan <sup>[2]</sup>
	Retail	Promotion		
INTERREX 4G 18	1099	999	131.88	249
INTERREX 4G 18 plus	1099	999	131.88	249
INTERREX 4G 21	1099	999	131.88	249
INTERREX 4G 21 plus	1099	999	131.88	249

*Note: The prices are in US dollar.*

<sup>[1]</sup> To know more about Ecotopia Data Service, please click:

[https://www.ecotopiago.com/help/en/#/essential/data\\_service/overview](https://www.ecotopiago.com/help/en/#/essential/data_service/overview)

<sup>[2]</sup> To know more about Debut Renewal Plan, please click:

<https://www.youtube.com/watch?v=IM75JLGhsHU&t=6s>

<sup>[3]</sup> The promotion period is 2023 Sep 1 ~2024 August 31.

# ACCESSORIES

INTERREX series is designed with flexible holes to support both backpack harness and neck-collar attachment method.

## Back-Mount

Each device will be provided along with 1 meters of 3.5mm wide UHMWPE tape (for harness use) and 6 aluminum rings (for binding the harness) for free.



## INTERREX on Neck/Leg

INTERREX series, with its compact size and internal antenna, offers remarkable flexibility for customization into neck collars or leg bands. Pictures on the right are the models we've meticulously designed.

For comprehensive specifications and to explore further customization possibilities, kindly reach out to your dedicated sales manager.

