

## ECHO Narrowband UHF Wireless Module

The ECHO is a complete Radio Transceiver Module operating in the license free ISM (Industrial Scientific and Medical) UHF bands. The ECHO modules come pre-tuned for 433, 868, or 902 MHz. Based on the XE1205 transceiver, the ECHO offers the unique advantage of both narrow-band and wide-band communication. Offering high output power and exceptional receiver sensitivity, the radio module is suitable for applications seeking to satisfy the European (ETSI EN300-220-1 and EN301 439-3) or the North American (FCC part 15.247 and 15.249) regulatory criterion.

### Features and Benefits

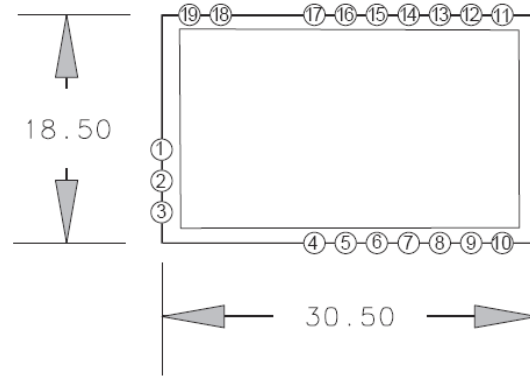
- Drop-in Replacement for Semtech DP1205 Module
- Narrowband UHF Transceiver Module
- UHF ISM Bands: 433, 868 or 915 MHz
- Data Rate 152.3 kbit/s (304.7 kbPS max)
- Best Sensitivity -118 dBm @ 1.2 kbps
- 25 kHz channel spacing
- 37 dBc ACPR @ 25 kHz/CH (RFOP3 Mode)
- 16-Byte FIFO with Interrupts
- Pattern Recognition (IRQ on match)
- User Defined 50 Ohm Antenna
- 30.5 mm x 18.5 mm x 4.6 mm
- Supply Voltage 2.4 V – 3.6 V
- Line Power 14 mA Rx/62 MA Tx/200 nA Sleep
- Industrial Temperature Rating -40 to +85 °C
- RoHS 6 Compliant



### Applications

- long-range low-power point-to-point systems
- Narrowband and Wideband Security Systems
- Process Controls, Factory Automation
- Access Controls, Security and Alarms
- Industrial Equipment Controls
- Automatic Meter Reading
- Cable Replacement
- Irrigation, Weather Stations, Baby Monitors
- Konnex and KNX compatible systems
- EN 300-220-1 V1.3.1 systems
- Out-of-band control channel for 2.4 and 5 GHz systems.

Parameter	Module Spec
Antenna	50 Ohm port
Crystal Drift	±5 ppm/°C
Crystal Frequency	39.000 MHz ±10 ppm
Interface	SPI
Lead Free	RoHS 6
Moisture Sensitivity Level	MSL 2
MTBF	50,000 Hrs
Order Code with 900 MHz	UGW5S9XESM33
Order Code with 868 MHz	UGW5S8XESM33
Order Code with 433 MHz	UGW5S4XESM33
Size height	4 mm
Size PCB	30 x 18 mm
Supply Voltage	2.4 to 3.6 VDC
Parameter	Chip Spec
Data Rate MAX	4.8 kBPS
Line Power Rx Max	14 mA
Line Power Tx Max	62 mA
Channel Spacing	25 kHz
RF Tx Power MAX	+15 dBm
RF Rx Sensitivity	-121 dBm
Temp Range	-40 to + 85 °C



Pin	Function	I/O	Description
1	GND	-	Module Ground
2	RF_IN_OUT	I/O	50 Ohm RF port
3	GND	-	Module Ground
4	VDDA	-	Supply Voltage
5	GND	-	Module Ground
6	VDD	-	Supply Voltage
7	NSS_CONFIG	I	SPI SELECT
8	NSS_DATA	I	SPI SELECT
9	IRQ0	O	Interrupt
10	GND	-	Module Ground
11	GND	-	Module Ground
12	IRQ1	-	Interrupt
13	DATA	I/O	Data
14	CLKOUT	O	Output clock
15	MISO	O	SPI Data
16	MOSI	I	SPI Data
17	SCK	I	SPI CLOCK
18	SW(0)	I/O	Sleep Mode
19	SW(1)	I/O	Sleep Mode

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