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Revision 1

**BC24403000**

# **Operation description**

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**Prepared by:** Lior

***Distribution (Check all appropriate):***

Precyse Only  Project Team Only  Customer and Supplier  
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## **Revision Record**

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**Precyse Technologies, Inc.**



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## Reference documents

## TABLE OF CONTENTS

Section/Title	Page
<b>Product description</b>	3
<b>Performance:</b>	3
<b>Communication:</b>	3
<b>Electrical:</b>	3
<b>Block diagram</b>	3
<b>Method of operation</b>	4
<b>Installation:</b>	4

## Product description

**The Precyse BC24403000 is a radio transmitter used to define location zones in an iLocate system.**

**The device consists of 4 transceivers. Each transceiver is IEEE 802.15.4 compliant and operates in the 2403MHz – 2483MHz frequency band.**

### Specifications:

#### *Performance:*

**Read range:** up to 500 m. (Within line of sight)

**Write range:** up to 500 m. (Within line of sight)

**Read rate:** 256 Kbps.

**Write rate:** 256 Kbps.

#### *Communication:*

##### **4 channels with the following parameters:**

**Frequency:** 2410 – 2475 MHz ISM license free band

**Modulation:** Q-PSK (DSSS)

**Channel bandwidth:** 5MHz

**EIRP:** Up to 23 dBm, digitally controlled

**Communication protocol:** 2WiSAP, optional AES128 Encryption

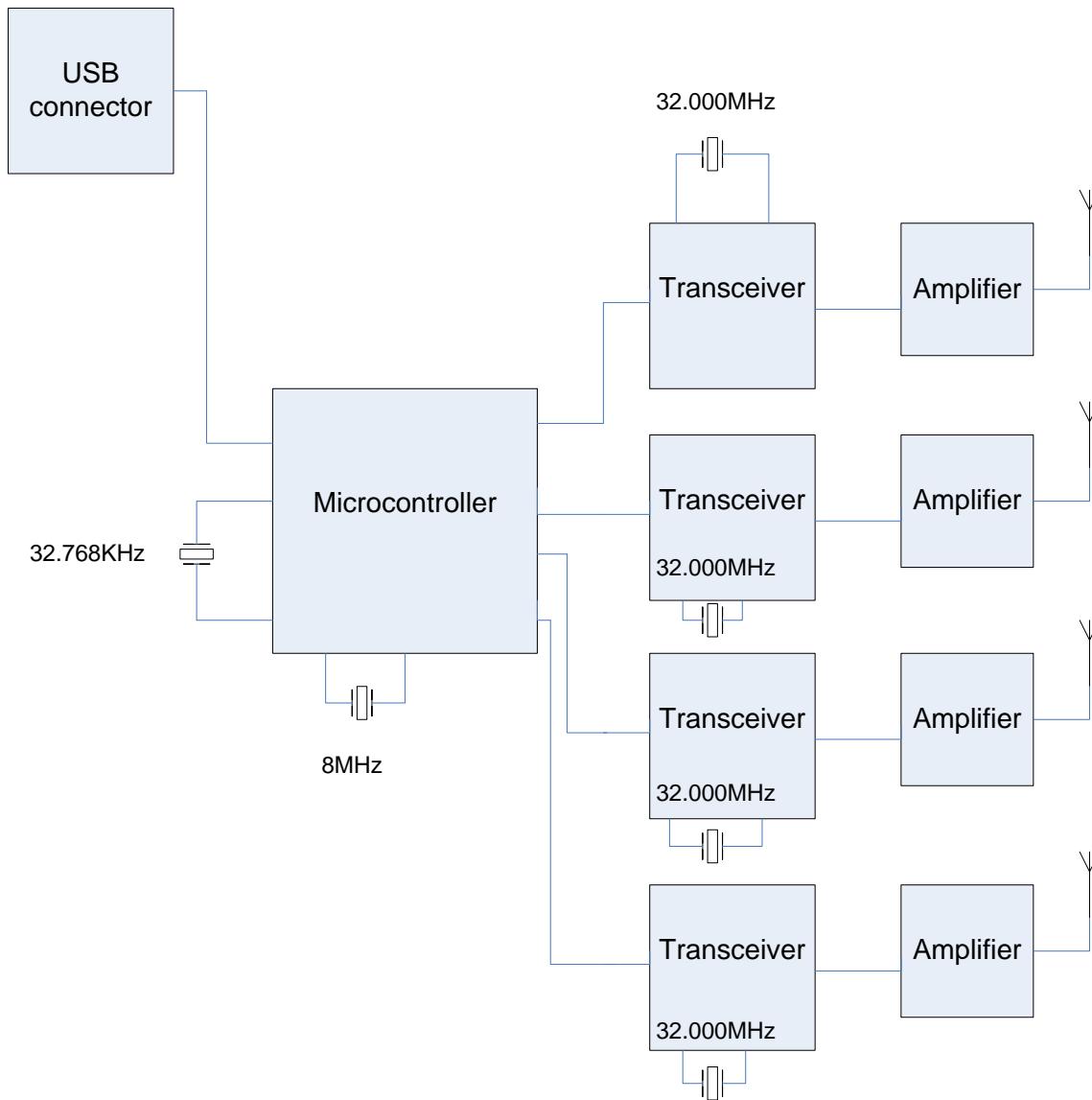
**Transmission:** Continuous transmission of its identification.

**Duty cycle:** up to 20%

#### *Electrical:*

**Power supply:** 12-24Vdc 2A max.

## Block diagram



## Method of operation

The PBC has 4 independent transceivers. The transceivers cannot operate as MIMO or phase array (beam shaping).

All the transceivers are connected to a single microprocessor unit. Each transceiver in the unit transmits its identification packet at 20% or lower duty cycle.

Each transceiver operates at a different 5MHz band (2410, 2415, 2420 etc). The 5MHz band is a requirement of the IEEE 802.15.4 MAC (U10, U16, U22 and U28).



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**One of the channels (One which has the best reception from the base station) acts as a communication channel to the base station.**  
**Each channel has a 30db, 23dBm power amplifier on board. Those are all internal to the unit and cannot be detached or changed. (U12, U18, U24 and U30)**

## **Installation:**

**Installation of the unit is intended for professional technician, see attached installation guide.**