One Stamford Plaza, 263 Tresser Blvd
Suite 957, Stamford, CT 06901
Tel: 203.564.1526

Document No. 2013918-1
Revision 1.0

BC91/005010
BC91/005011
BC91/005012
BC91/005013
BC91/005014

Operation description

Release Date: 18Sep2013
Prepared by: Yossi Nurok

Distribution (Check all appropriate):
☐ Precyse Only ☐ Project Team Only ☐Customer and Supplier

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Revision Record

Rev.	Effective Date	Description
1.0	18/9/2013	Initial Release

Reference documents

#	Doc #	Description
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Product description

Precyse BC91/005010, BC91/005011, BC91/005012, BC91/005013, BC91/005014 are radio transmitters used to define location zones in an iLocate system.
The devices consist of 4 transceivers. Each transceiver operates in the 902MHz – 917MHz 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: 250 Kbps.
Write rate: 250 Kbps.

Communication:

4 channels with the following parameters:
Frequency: 902 – 917MHz
Modulation: 2-FSK
Deviation: 190 KHz
Channel bandwidth: 800 KHz
EIRP: Up to 11dBm, digitally controlled
Communication protocol: 2WiSAP, optional AES128 Encryption
Transmission: Continuous transmission of its identification.
Duty cycle: up to 20%

Electrical:

Power supply for BC91/005010, BC91/005012, BC91/005014: 3.6Vdc
Power supply for BC91/005011, BC91/005013: 12Vdc

External Antenna for BC91/005012, BC91/005013:
Lynx Technologies ANT-916-CW-RH-SMA

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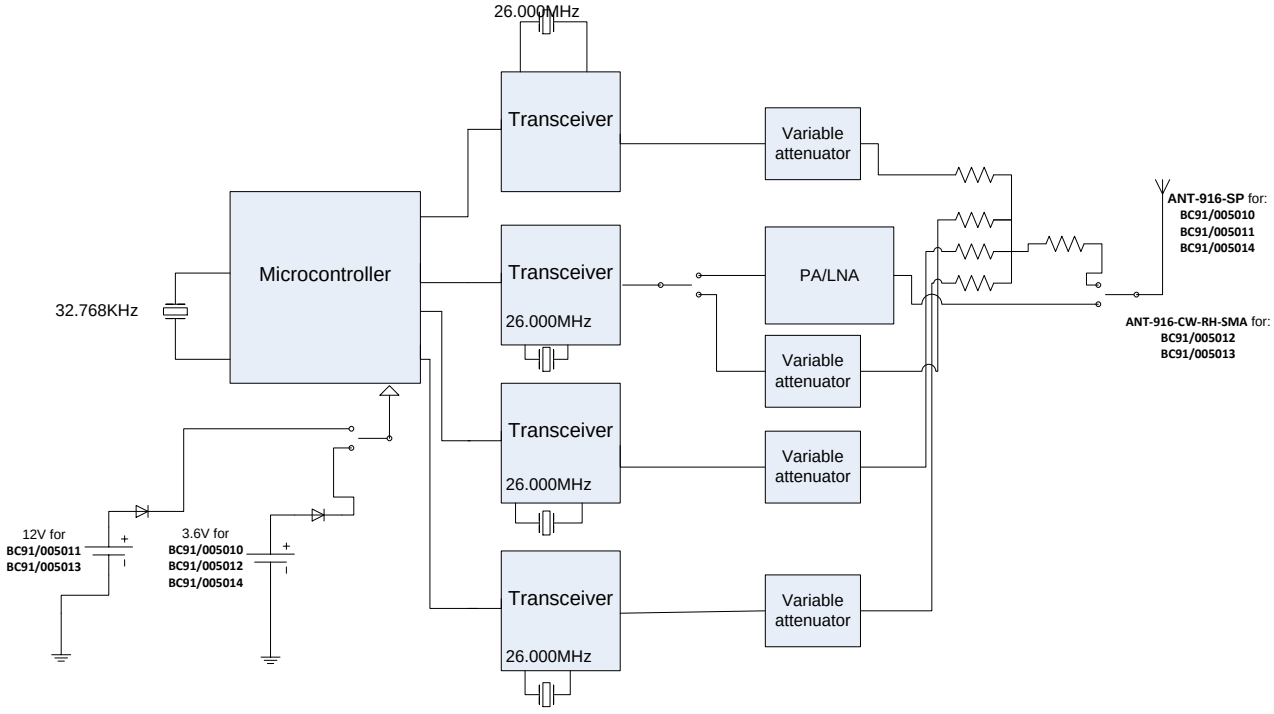
Block diagram



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Method of operation

The BC91/00501x has 4 independent transceivers. The transceivers cannot operate as MIMO or phase array (beam shaping).
All the transceivers are connected to a single low power microprocessor unit. Each transceiver in the unit transmits its identification packet at 20% or lower duty cycle.
Each transceiver operates at a different 800 KHz band (905.0, 905.8, 906.6 etc).
One of the channels (One which has the best reception from the base station) acts as a communication channel to the base station.
This unit's function is to provide location information to the mobile agents (tags). Upon packet reception, the tag transmits its signal strength (RSSI) and ID to the base station and its location can be calculated using various algorithms.

Installation:

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