

# RC2301DK

# RC2301DK Demonstration Kit Quick Start ZNM-ready Location Engine demo



#### Introduction

The RC2301DK demonstration kit shows a ZNM-ready location demo application on the Figure 8 Wireless Z-stack from Texas Instruments. To make the demonstration a minimum of 8 nodes are required:

- One Location Dongle (D) configured as network coordinator
- Six reference nodes (R1 to R6) configured as network routers
- One blind node (B) with RC2301 configured as network router

The kit contains all 8 boards and each board has an identifier label on the reverse side.



# **RC2301DK**

# **Quick Start Guide**

# 1. Download location demo PC application

Download the latest verion of the location demo PC(Z-Location Engine) SW from TI ( <u>http://www.ti.com/litv/zip/swrc070c</u>) and install it on your PC.

### 2. Set up the Location Dongle

Start the Z-location Engine program on the PC. Power up the Location Dongle and connect it to a COM-port on your computer. Make sure the "Select COM port field at the bottom of the application window correspond to the correct port. The program does not support USB-Com port, only pure RS232 COM ports.

Press the " $\blacktriangleright$ " button in the application and observe that the application connects to the dongle at the bottom of the application window.

■ Refresh	
Vode resp.: 0 (0 unsuccessful)	Dongle: Disconnected

Figure 1. Before connection

- Refresh		
).: 0 (0 unsuccessful)	Dongle: Connected, Short Addr: 0x7C28, IEEE Addr: 0x0015200000020381	

Figure 2. After connection

# 3. Add a background image

Select the *Background* tab in the application window. Select a Background Image and type in the width and height. Displacement should be 0 if the image shall be placed in the top left corner of the image window in the application.

Setup Background Reference Node Setup Blind Node Setup			
Background Image	Background Settings		
Message count: 0 Blind Node resp.: 0 (0 unsuccessful) Dongle: Disconnected			

Figure 3 Background tab

Press Update, and the picture should become visible in the application window.



#### 4. Power up reference nodes

Connect power to reference node 1 (R1). Make sure that it is in range of the location dongle. The reference node will appear in the Reference Node Setup tab in the application, and will also appear in the graphical window as a yellow ball.

© Z-Location Engine CC2431				
Settings Help				
► <b>u</b>	-}		10	0% 🔽
	30	40	50	<
Setup Background Reference Node Setup Bli	nd Node Setup			
Status. Address X Y 0x1AF9 2.00 8.00	Update Node           X:           Y:	Update		
Message count: 3 Blind Node resp.: 0 (0 unsuc	cessful) Donale: Conr	nected, Short Addr: 0x7C28	. IEEE Addr: 0x00152	00000020381

Figure 4. Reference Node Setup tab

Double-click on the node in the list and change the location coordinates. Press update. Status of the device will be *updating*. When the update is complete, double-click the node again to make sure the updating was successful. Then place the node at the specified location.

Repeat for nodes R2 to R6.

#### 5. Activate blind node

Activate the blind node by connecting it to a battery. After a few seconds the blind node will appear in the application window as a green ball.

#### 6. Tuning the application

The application can be tuned by changing the parameters that the location engine in RC2301 uses. This is done in the Blind Node Setup tab. Double-click on the blind node you want to change, set the parameters and press update. For a description of the parameters see the



# **RC2301DK**

chapter on Blind Node Configuration in the Z-Stack Location Profile document by TI (Document Number: F8W-2006-0002).

Setup   Background   Reference Node Setup   Blind Node Setup				
Status. Address X Y	Update Node			
	Node id: Cycle Time:			
	A: Rep. short addres:			
	N: Rep. Endpoint:			
	Operating Mode: Min. Ref. Nodes:			
	Collect Time: Update			
1				
Message count: 162 Blind Node resp.: 0 (0 unsuccessful) Dongle: Connected, Short Addr: 0x7C28, IEEE Addr: 0x001520000020381 //				

Some parameters of the application can also be tuned in the Settings window.

Settings				
Start Node request interval: Remove node after	5	seconds seconds		
<ul> <li>Request Conf. data Ref. Nodes</li> <li>Request Conf. data Blind Nodes</li> <li>Request Position data blind nodes</li> </ul>				
()	C	ancel		

### Contact Information **Radiocrafts AS** Sandakerveien 64 NO-0484 OSLO

NORWAY

www.radiocrafts.com radiocrafts@radiocrafts.com Fax: +47 22 71 29 15

Tel: +47 4000 5195