ZigBee tools

ESD Systems

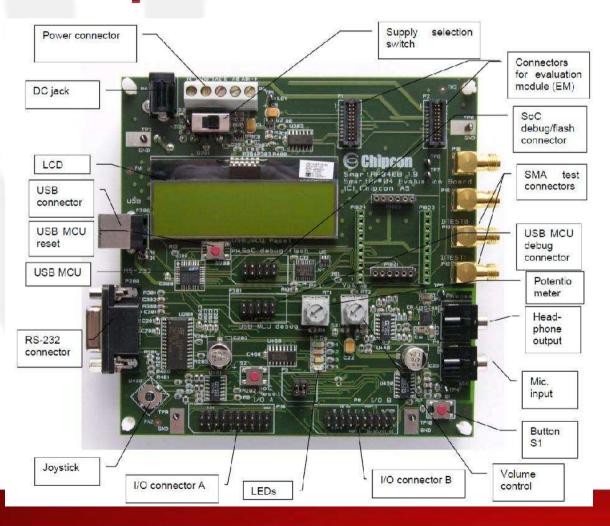
- Z-Stack[™]: is TI's ZigBee compliant protocol stack for a growing portfolio of IEEE 802.15.4 products and platforms
- IAR: is a development tools for testing and compiling Z-Stack based applications.
 - It incorporates IAR C/C++ Compiler for ARM Cortex-M3, assembler, linker, librarian, text editor, project manager, and debugger
- SmartRF[™] Studio: is a Windows application that can be used to evaluate and configure Low Power RF-ICs from Texas Instruments.



 Zigbee boards:

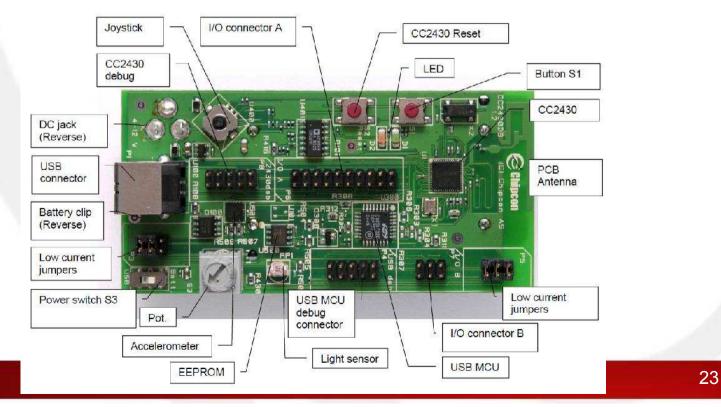
 Chipcon SmartRF04EB
 Evaluation
 Board with
 CC2430EM







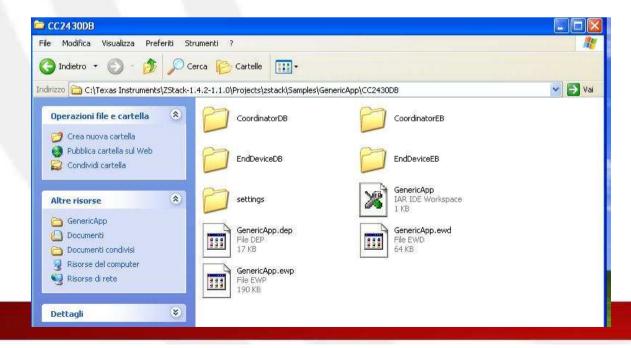
- Zigbee boards:
 - Chipcon CC2430DB Development Board





ESD Stresses

- Open GenericApp example(Zstack & IRA tools) from example folder as shown bellow:
 - C:\texasInstrument\Zstack-1.4.2.1.1.0\project\Zstack\ samples\GenericApp\CC2430DB\GenericApp





 Choose Coordinator or End device based on your board type (ED, DB) and ZigBee role (ZC,ZR,ZED)

VI IAR Embedded Workbench IDE		1000	-	1000		
File Edit View Project Too	ls Window	Help				
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Workspace	×					
CoordinatorEB						
CoordinatorDB CoordinatorEB						
RouterDB RouterEB EndDeviceDB EndDeviceEB DemoDB DemoEB						
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- then

ESD

- Project-> buildall
- Project->Debug
- (for configuration)

Reset zigBee kit from its switch.

- S300 for EB
- S2 for DB
- Repeat these steps to configure other devices

File Edit View	Project	Tools Window	Help
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CoordinatorEB		ort File List	
Files	Edit	Configurations	
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		te New Project Existing Project	
–⊕ NWK	Optio	ons	Alt+F7
		ce Code Control	9
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	Com	pile	Ctrl+F7
⊞ 🛄 ZDO ⊞ 🚞 ZMac	Rebu	ild All	
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	Stop	Build	
	Debu Make	i <mark>g</mark> e & Restart Debu	Ctrl+D



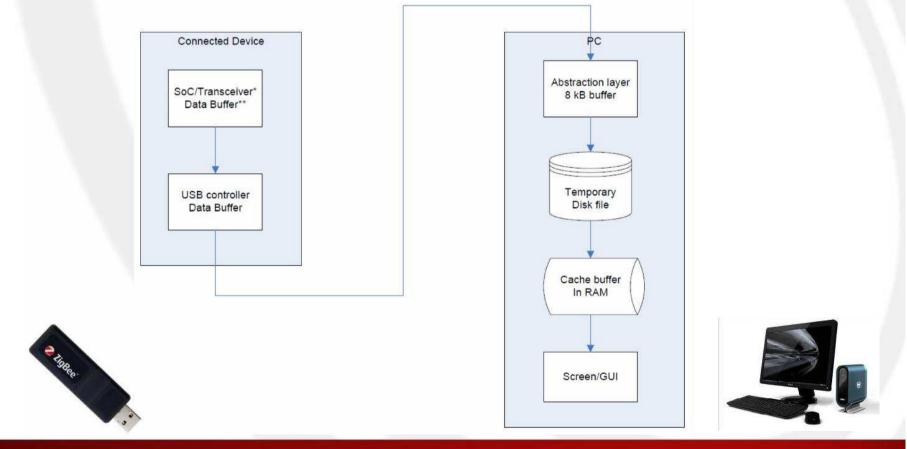
- SmartRF tool
 - IEEE address 8 bytes (static)

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- 1. Read
- 2. Change IEEE
- 3. Write

Program CCxxxx SoC or MSP430	.	
System-on-Chip MSP430		
EB ID Chip type 2907 002430	EB type SmartRF04EB	EB firmware ID EB firmwa 0400 0031 (old)
Interface:		
Flash image:		
Read IEEE Write IEEE F-128 (adr	: 0x1FFF8] 💌	IEEE 0x FF FF FF FF FF FF
		IEEE Ox FF FF FF FF FF FF FF
Read IEEE Write IEEE F-128 (adr		
tain IEEE address when reaco		
1 ons	3	IEEE 0x FF FF FF FF FF FF
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Linin IEEE address when rear ons Erase Erase and program Erase, program and verify Append and verify	Basenning the chip	tive after program/append): 128 kB - All pages
Linkain IEEE address when rear ons Erase Erase and program Erase, program and verify Append and verify Verify against hex-file	Base in the chip Base in the chip Flash lock (effec Write protect: ☐ Write protect	tive after program/append): 128 kB - All pages
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Linkain IEEE address when rear ons Erase Erase and program Erase, program and verify Append and verify Verify against hex-file	Flash lock (effec Write protect: Write protect Block debug	tive after program/append): 128 kB - All pages toot block commands (incl. read access) pend and verify'' when set!





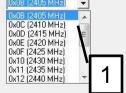


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Capturing device Radio Configuration Select fields Packet details Address book Display filter Time line

IEEE 802.15.4 Channel:







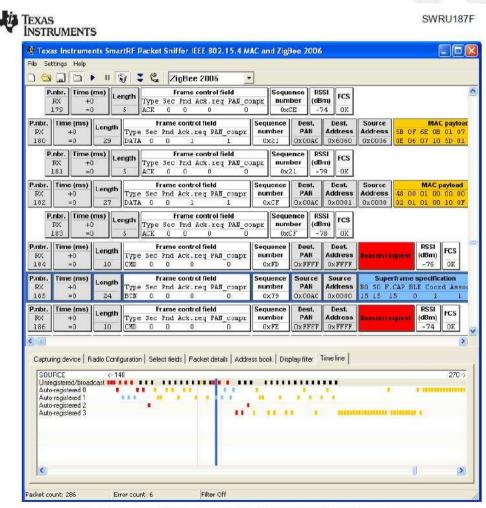


Figure 12: Packet sniffer screenshot from the IEEE8022.15.4/ZigBee protocols

