

Wi-SUN Wireless Communications Troubleshooting

MX705110A Wi-SUN Protocol Monitor

Wireless signals (IEEE 802.15.4g/e (GFSK)) are saved during communications as IQ data by MS269xA/MS2830A signal analyzer for analysis using the Wi-SUN Protocol Monitor software to display the Frame Format (PHY/MAC), Tx timing, etc.

It is possible to check the details of a Wi-SUN protocol by having carried Wireshark dissector for Wi-SUN.

“This is the ideal solution for checking and troubleshooting device wireless communications.”

Features

- IEEE802.15.4g/e (GFSK) signal analysis function
- Binary display for physical layer frame data (Preamble, SFD)
- Header analysis display for MAC layer frame data
- FCS32 support
- RF analysis display (Tx timing, Tx power, time vs. Tx power graph)
- IQ data conversion to capture file (PCAP) for Wireshark

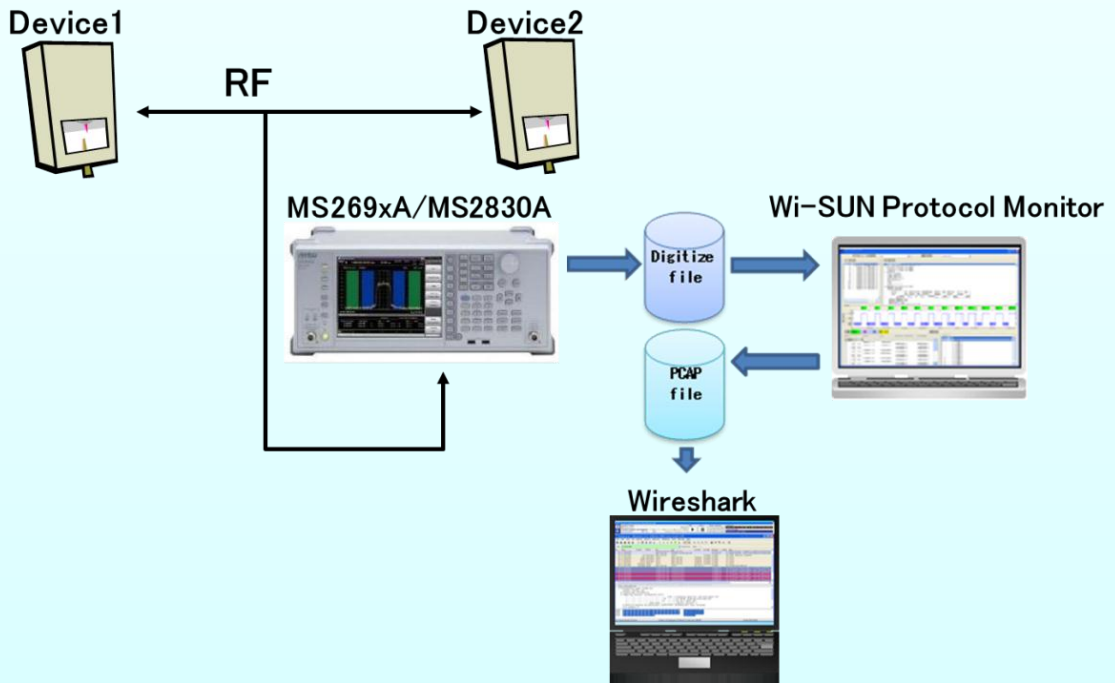
Protocol Monitor Screen

The screenshot shows the 'E802.15.4g.e-2012 Protocol monitor' window. It features several panes: 'Layer analyze (LSB first)', 'MAC Layer analyze (MSB first)', a 'TxPower(dBm)' vs 'Time[sec]' graph, and a 'Tx timing' table. Callouts point to specific areas: 'Burst Demodulation Results Display LSB/MSB First Switching' points to the layer analysis panes; 'MAC Frame Analysis Results Display LSB/MSB First Switching' points to the MAC layer details; 'Time vs. Amplitude Graph Display' points to the TxPower graph; 'Burst Tx Timing Time Display' points to the Tx timing table; and 'Transmission Power Display' points to the Tx power table.

START	END	START to	GAP TIME
0.00 [msec.]	2.24 [msec.]	1.84 [msec.]	-0.40 [msec.]
1.85 [msec.]	4.49 [msec.]	2.15 [msec.]	-0.49 [msec.]
4.00 [msec.]	6.08 [msec.]	1.70 [msec.]	-0.38 [msec.]
5.70 [msec.]	7.94 [msec.]	1.89 [msec.]	-0.41 [msec.]
7.54 [msec.]	12.50 [msec.]	4.01 [msec.]	-0.95 [msec.]
11.54 [msec.]	14.28 [msec.]	2.22 [msec.]	-0.50 [msec.]
13.78 [msec.]	16.48 [msec.]		

F	Power
F 1	33.8dBm
F 2	33.8dBm
F 3	33.8dBm
F 4	33.8dBm
F 5	33.8dBm
F 6	33.8dBm
F 7	33.8dBm
F 8	33.8dBm
F 9	33.8dBm
F 10	33.8dBm
F 11	33.8dBm
F 12	33.8dBm
F 13	33.8dBm
F 14	33.8dBm

<Measurement Setup>



The wireless signal between devices is recorded by the signal analyzer as IQ data (digitized file) and analyzed by the PC.

- Files can be transferred using either USB memory or a folder shared between the PC and instrument.

MS2830A

Model/Order No	Name	note
MS2830A	Signal Analyzer	V5.05.01 or more
MS2830A-041	6 GHz Signal Analyzer	
MS2830A-006	Analysis Bandwidth 10 MHz	

Operating Environment

Controller PC	
	CPU: x86, 32 bits, 1 GHz or better OS: Windows® 7 Professional SP1 32 bit Memory: 4GB min. HDD Free Space: 500 GB min. Display Resolution: 1024 x 768 pixels (W x H) Software: Wireshark (Version 1.10.0 or above versions.)

- Windows® 7 is a registered trademark and trademark of Microsoft Corporation in the USA and other countries.
- This product was jointly developed with the National Institute of Information and Communications Technology (NICT).