
10/100BaseT LAN, Wi2Wi Wireless LAN And External Modem Using iChipSec CO2128

Revision History

Version	Date	Description
1.0	August 2007	Original release
1.1	September 2007	WiFi module gets its reset signal from pin 59 of iChipSec 2128 (PIOC22) instead of SP708RCN (reset circuit)

Introduction

The Internet platform is based on the iChipSec™ CO2128 IP Controller™ with a 10/100BaseT Ethernet LAN and 802.11b/g Wireless LAN network. The Wireless LAN system is intended to connect an embedded device to a local LAN through an 802.11b/g Wireless LAN Access Point. Wireless LAN access is enabled via the Wi2Wi W2SW0001 Wireless LAN Module, which is based on Marvell's 88W8686 chipset.

LAN access is based on the CO2128's internal Ethernet MAC and an external Davicom DM9161A PHY chip (see <http://www.davicom.com.tw/eng/download/datasheet.htm>).

Dial-up and Cellular modems can be accessed via one of the available UARTS. Any modem that supports the basic Hayes AT command set (for example, ATD, ATZ) with an RS232 interface can be used. iChipSec works with GSM, GPRS, CDMA, CDMA 2000, EDGE, Satellite and dial-up modems.

The design is intended to connect to a host device through a standard EIA RS232 serial port. iChipSec can optionally be connected to a host device processor through a USB 2.0 Host or Device interface. iChipSec's AT+i™ commands are accepted at baud rates of 2400 through 230,400 bits/sec.

Features

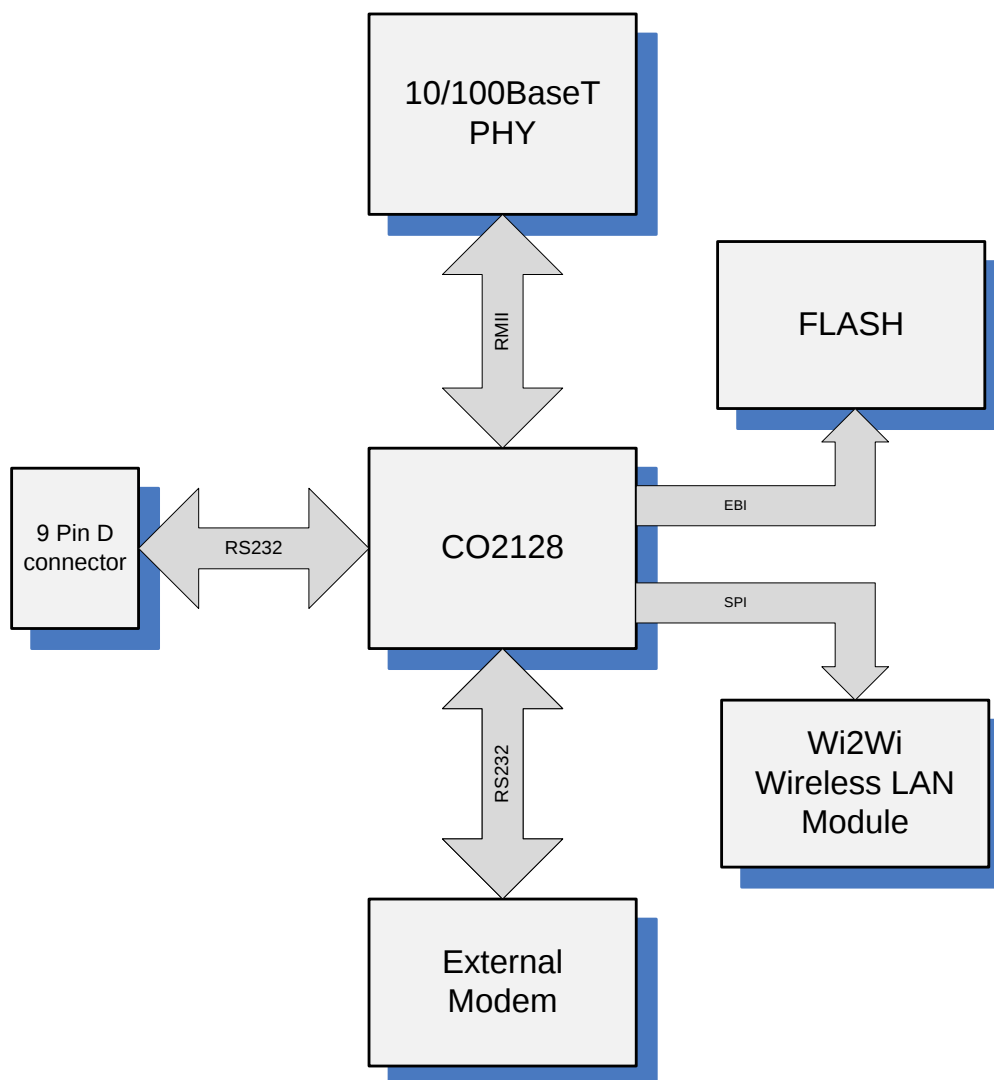
- Standard RS232 serial input channel via 9 pin 'D' connector
- Data and Internet connection through a 10/100BaseT Ethernet controller; Wi2Wi Wireless LAN Module based on the Marvell 88W8686 chipset, and any cellular or dial-up modem
- Full hardware flow control
- Power LED indicators
- Supports iChip AT+i™ commands for Internet connectivity
- Supports the full SocketModem AT command set on the modem platform

Reference Design

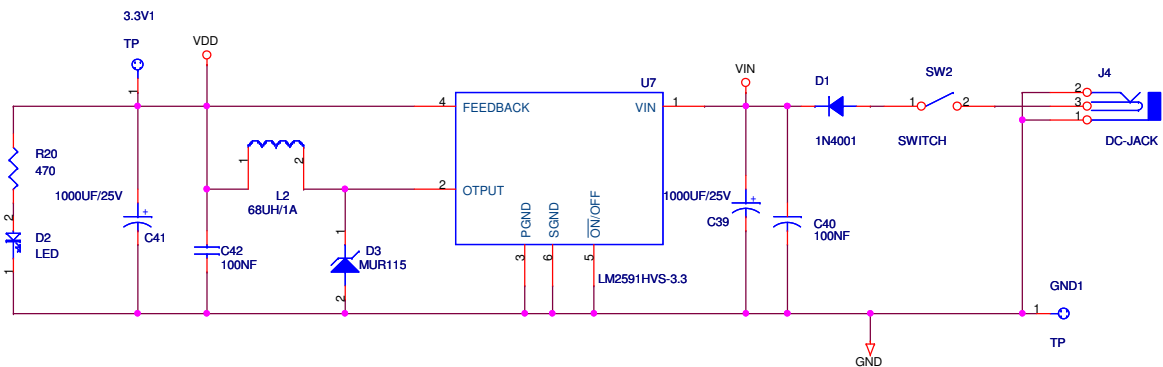
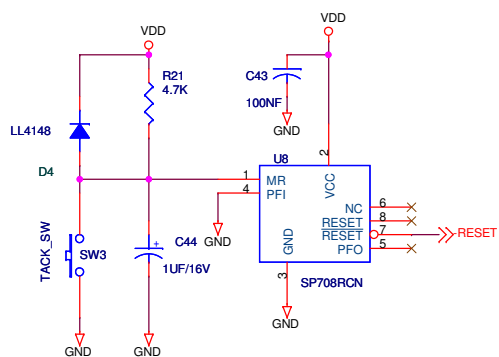
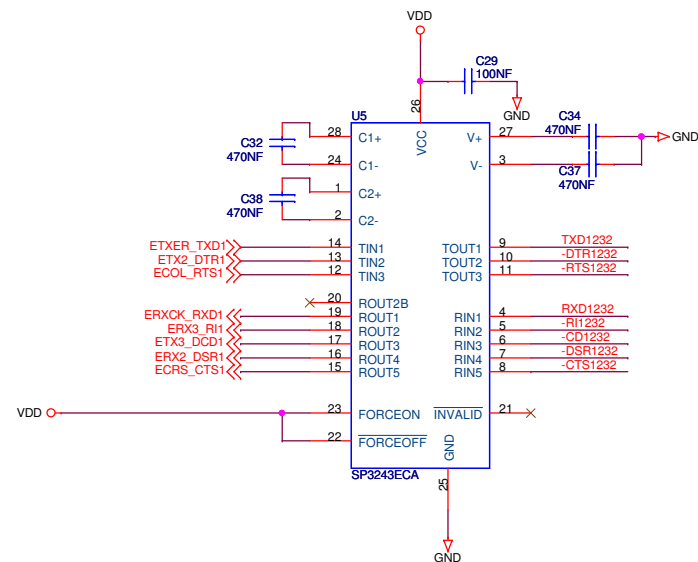
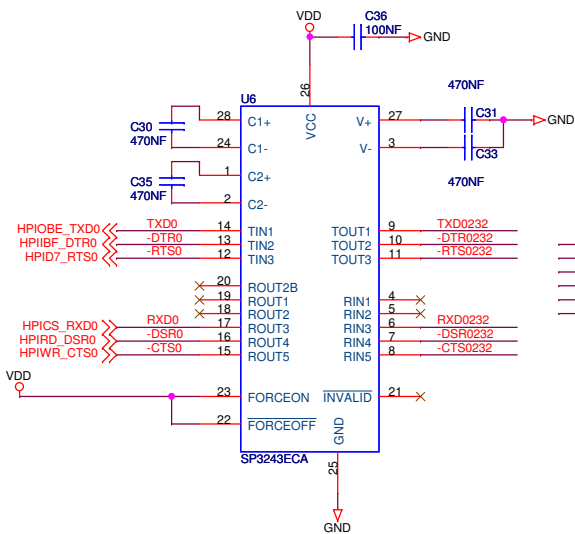
This reference design outlines the required connections to link an iChipSec CO2128 IP Controller with a 10/100BaseT Ethernet LAN, Wi2Wi W2SW0001 Wireless LAN Module, and an external modem, based on the block diagram, below. The reference design is intended to clarify iChip signal connections.

The host is connected to iChipSec CO2128 via an RS232 serial input channel. The external 10/100BaseT Ethernet PHY is connected via an RMII interface. The external Wi2Wi Wireless LAN Module is connected via its SPI serial interface. The external modem is connected via an RS232 serial input channel, and an external flash memory (M29W800DB-70N1E from ST Micron) is connected via an EBI interface.

Block Diagram

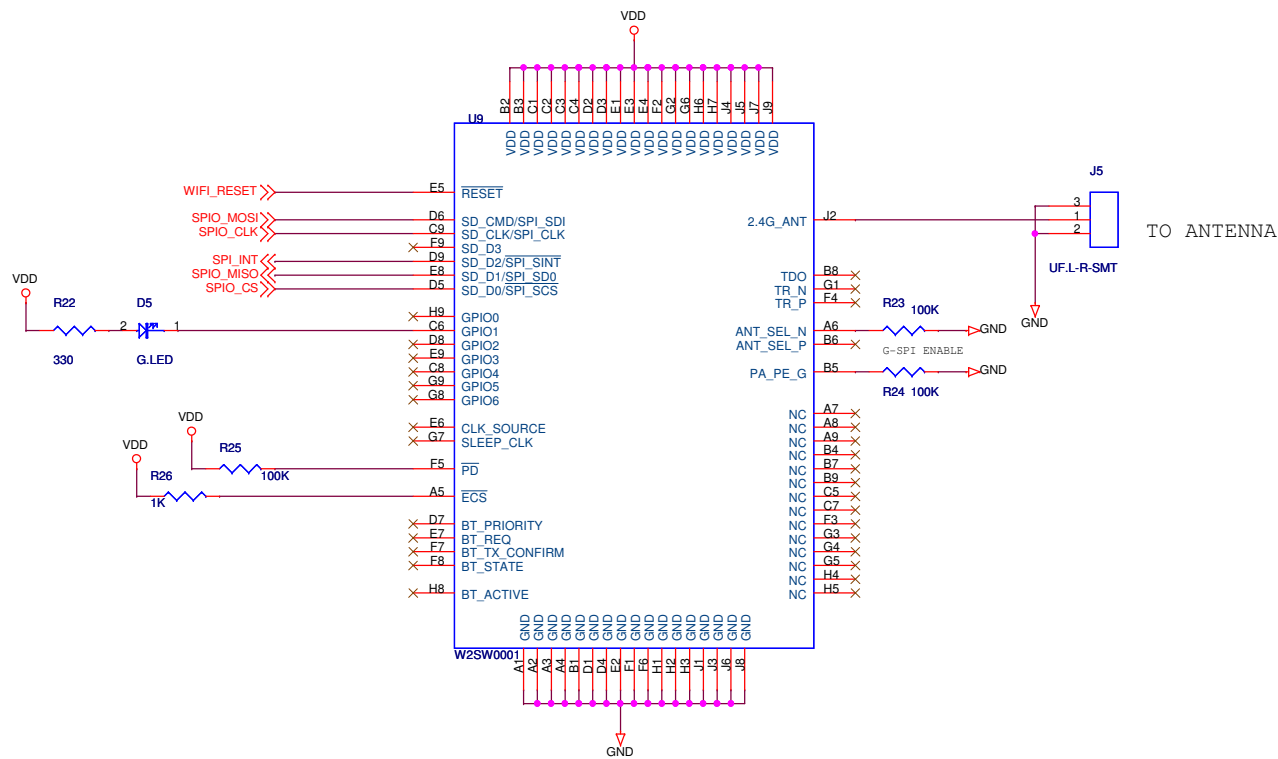
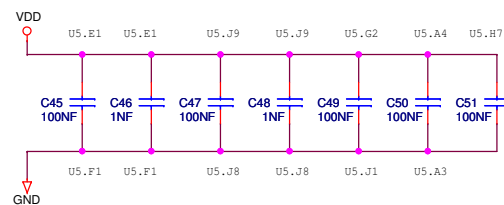


Schematics



UART0 + UART1 + POWER + RESET			
Title			
REFERENCE DESIGN CO2128 + Wi2Wi WIFI MODULE			
Size	Document Number		Rev
B			1.0
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WIFI - G INTERFACE



Title				
WIFI-G WITH W2Wi MODULE				
Size B	Document Number REFERENCE DESIGN CO2128 + W2Wi WIFI MODULE			Rev 1.0
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Bill of Materials

Item	Quantity	Reference	Part
1	32	C1,C2,C3,C4,C6,C7,C8,C9,C10,C11,C15,C16,C17,C18,C19,C22,C23,C24,C25,C26,C27,C28,C29,C36,C40,C42,C43,C45,C47,C49,C50,C51	100NF
2	1	C5	10UF/16V
3	2	C12,C14	22PF
4	1	C13	2.2UF/16V
5	2	C20,C21	100UF/16V
6	8	C30,C31,C32,C33,C34,C35,C37,C38	470NF
7	2	C39,C41	1000UF/25V
8	1	C44	1UF/16V
9	2	C46,C48	1NF
10	1	D1	1N4001
11	1	D2	LED
12	1	D3	MUR115
13	1	D4	LL4148
14	1	D5	G.LED
15	2	GND1,3.3V1	TP
16	1	J1	203199
17	1	J2	DB9 FEM
18	1	J3	DB9 MALE
19	1	J4	DC-JACK
20	1	J5	UF.L-R-SMT
21	1	L1	BK2125HM601
22	1	L2	68UH/1A
23	4	R1,R14,R15,R17	0
24	4	R2,R3,R6,R9	3K
25	4	R4,R23,R24,R25	100K
26	3	R5,R7,R8	10K
27	4	R10,R11,R12,R13	49.9 1%
28	1	R16	6.8K1%
29	3	R18,R19,R20	470
30	1	R21	4.7K
31	1	R22	330
32	1	R26	1K
33	2	SW1,SW3	TACK_SW
34	1	SW2	SWITCH
35	1	U1	CO2128
36	1	U2	M29W800DB-70N1E
37	1	U3	F4100-50MHZ
38	1	U4	DM9161A
39	2	U5,U6	SP3243ECA
40	1	U7	LM2591HVS-3.3

Item	Quantity	Reference	Part
41	1	U8	SP708RCN
42	1	U9	W2SW0001
43	1	Y1	12MHZ