
Micrel 10/100BaseT LAN and EBI Flash Memory Using iChip™ CO2128

Revision History

Version	Date	Description
1.0	November 2007	Original release

Introduction

This reference design demonstrates the iChip™ CO2128 connected to a 10/100BaseT Ethernet LAN via an RMI interface, to a host processor via an RS232 interface, and to a flash memory chip via an EBI interface.

LAN access is based on iChip CO2128's internal Ethernet MAC and an external Micrel KSZ8041NL chip.

The design is intended to connect to a host device through a standard EIA RS232 serial port. Connect One's AT+i™ commands are accepted at baud rates of up to 3Mbps. 3Mbps.

Features

- Standard RS232 serial input channel
- Supports serial host interface rates of up to 3Mbps (250K, 1M, 1.5M, 3M)
- SSL3/TLS1 security implemented in hardware
- Data and Internet connection through a 10/100BaseT Ethernet controller
- Full hardware flow control
- Supports AT+i™ commands for Internet connectivity

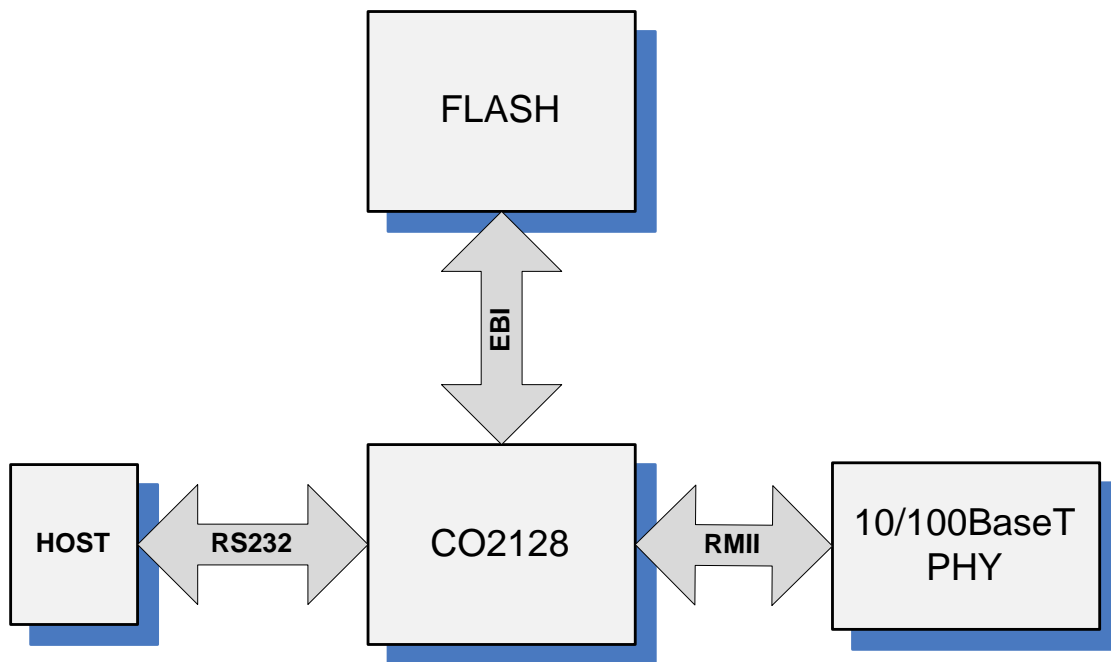
Reference Design

This reference design outlines the connections required to link an iChip CO2128 with a 10/100BaseT Ethernet LAN and an external flash memory chip, based on the block diagram, below.

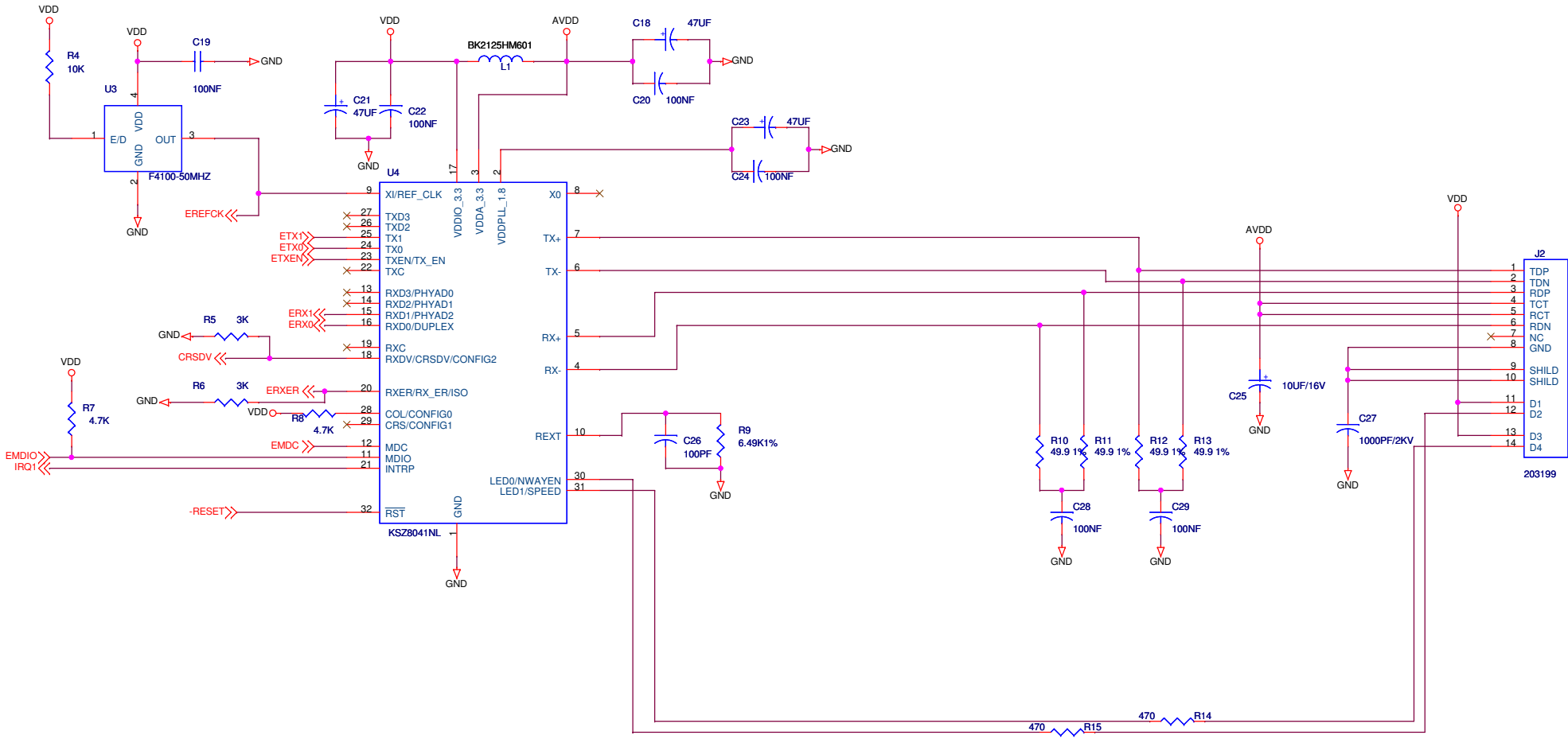
The host is connected to iChip CO2128 via an RS232 serial input channel. The external 10/100BaseT Ethernet PHY is connected via an RMI interface. The external flash memory (M29W800DB-70ZE6L from STMicroelectronics) is connected via an EBI interface.

Block Diagram

The diagram below illustrates an architecture in which the iChip CO2128 loads its firmware from external flash memory. All the components required for this architecture are listed in the Bill of Materials section, below.



Schematics



RMII INTERFACE			
Title REFERENCE DESIGN CO2128 + LAN			
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Bill of Materials

Item	Quantity	Reference	Part	Manufacturer
1	18	C1, C2, C3, C5, C6, C7, C8, C9, C10, C11, C15, C17, C19, C20, C22, C24, C28, C29	100NF	Any
2	2	C4, C25	10UF/16V	Any
3	2	C12, C14	22PF	Any
4	1	C13	2.2UF/16V	Any
5	1	C16	10UF/6.3V	Any
6	3	C18, C21, C23	47UF	Any
7	1	C26	100PF	Any
8	1	C27	1000PF/2KV	Any
9	1	J1	HEADER 8	Any
10	1	J2	203199	Any
11	1	L1	BK2125HM601	Any
12	1	R1	0	Any
13	3	R2, R5, R6	3K	Any
14	1	R3	100K	Any
15	1	R4	10K	Any
16	2	R7, R8	4.7K	Any
17	1	R9	6.49K1%	Any
18	4	R10, R11, R12, R13	49.9 1%	Any
19	2	R14, R15	470	Any
20	1	U1	CO2128	Connect One
21	1	U2	M29W800DB- 70ZE6L	STMicroelectronics
22	1	U3	F4100-50MHZ	FOX

Item	Quantity	Reference	Part	Manufacturer
23	1	U4	KSZ8041NL	Micrel
24	1	U5	NC7SZ08	Fairchild
25	1	Y1	12MHZ	Any