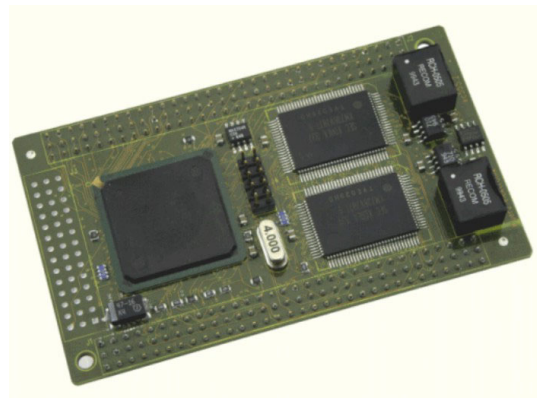


Wuerz elektronik
Im Burgfeld 4; D-35781 Weilburg
Tel.: ++49 6471 629 884; Fax:++49 6471 629 885
Mail: info@wuerz-elektronik.com
<http://www.wuerz-elektronik.com>



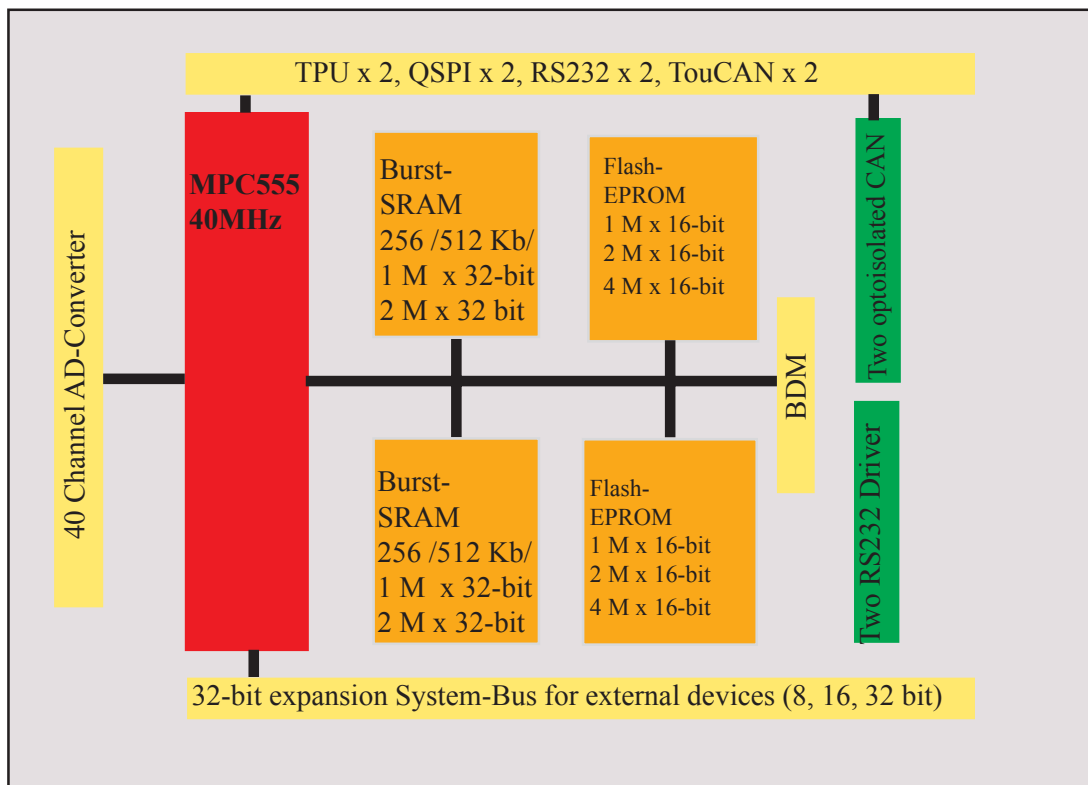
ec555 Microcontroller Module

Product Information



Status: May 2005





Microcontroller Module with Freescale Processor MPC555.

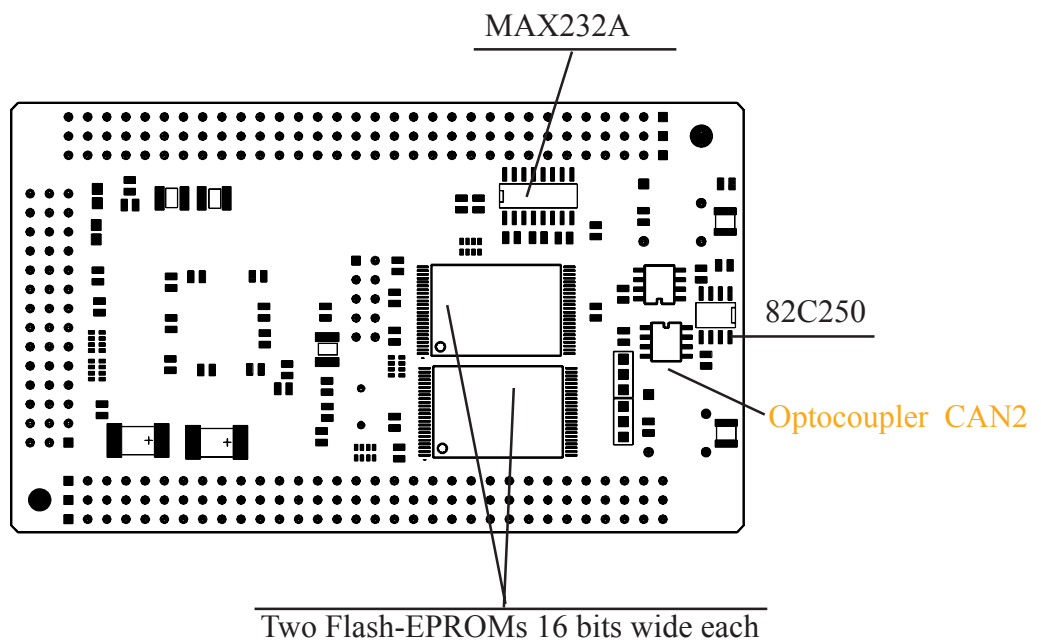
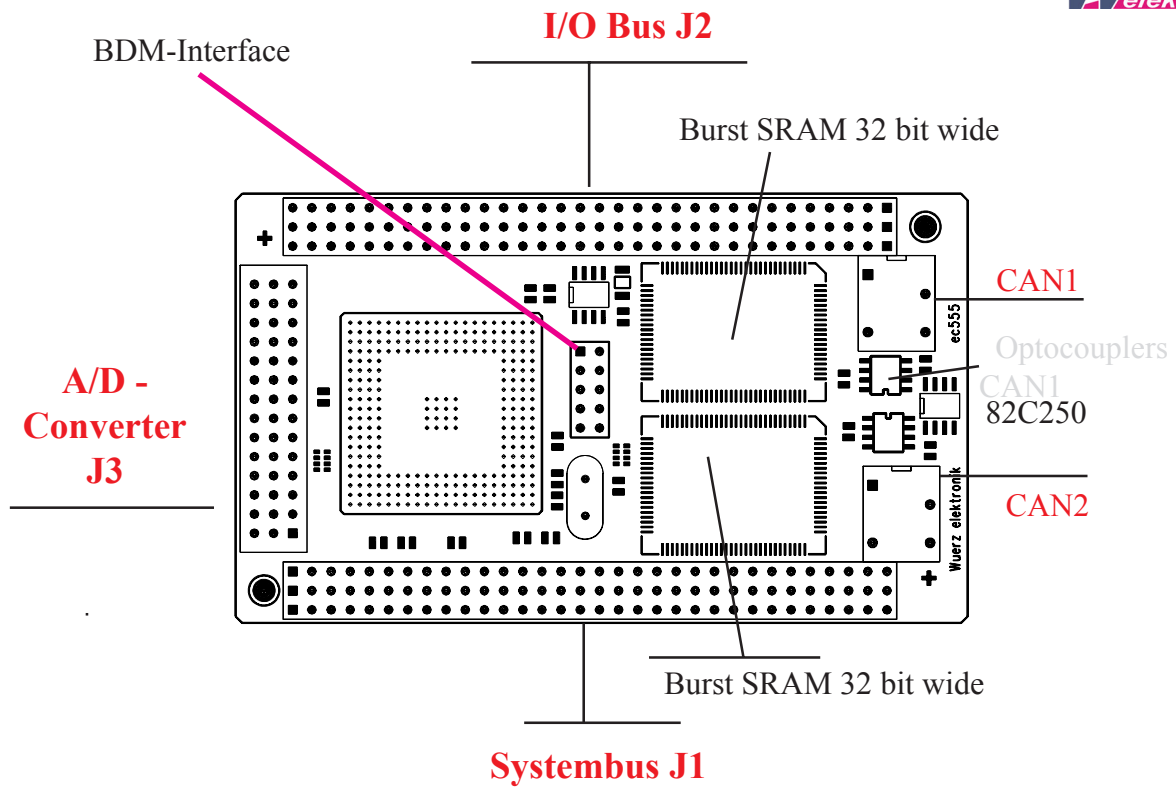
The module “ec555“ made by Wuerz elektronik is a credit-card sized module with the Freescale processor MPC555. The MPC555 is a RISC MCU with a 32 bit PowerPC architecture and integrated floatingpoint unit. The processor operates at 40 MHz. It has an on-chip 448 Kbyte flash-EPROM and an internal 26 Kbyte SRAM. The internal flash is split in two modules with 256Kb / 192 Kb; each module consists of 8 / 6 separately erasable 32 Kb blocks. The flash can supply most commands in a single cycle, using a special burst mode. The processor is assisted by intelligent periphery modules, such as a 32 channel 10 bit A/D converter, two TouCAN (CAN 2.0B) controllers, two time processor units, each with 16 channels, two serial interfaces. The periphery modules are known from the MC683xx family.

The design intention of the module, sized 97x57 mm, was a stand-alone solution for embedded applications. The module can have up to 16 MB external flash-EPROM (2 M*32 bit), up to 8 MB synchronous burst SRAM , two RS232 drivers and two CAN interfaces. The CAN interfaces are optically insulated and have their own DC/DC converters. The module is “CAN-Ready” for transfer rates up to 1 Mbps. A 10 pin debug interface (BDM) can be used to program the internal and the external flash-EPROM via debug software. All processor signals are accessible on three connectors. Pins (spacing 2,54 mm) serve for the connection of add-on modules. The module is also available for an extended temperature range as an option. Single 5 Volt Power Supply. An Evaluation-board with a 10 base ETHERNET for the development of applications is available.

Special features:

Due to its ruggedness the module can also be used in extreme environments.

Conformal coating is optionally possible.



Bus configuration of the ec555 Module

Systembus

J1-C		J1-B	J1-A
VCC (+5V)	1	VCC (+5V)	VCC (+5V)
GND	2	GND	GND
+3.3V	3	+3.3V	+3.3V
D16	4	D1	D0
D17	5	D3	D2
D18	6	D5	D4
D19	7	D7	D6
D20	8	D9	D8
D21	9	D11	D10
D22	10	D13	D12
D23	11	D15	D14
D24	12	ENCLK/BUC	CLKOUT
D25	13	*SRESET	*PORESET
D26	14	*CS3	*HRESET
D27	15	*WE1	*WE0
D28	16	*TS	RD/*WR
D29	17	*TEA	*OE
D30	18	*IRQ0	*IRQ2
D31	19	*IRQ1	*IRQ7
*CS0	20	*IRQ6	*IRQ5
*CS1	21	*IRQ3	*IRQ4
*CS2	22	A9	A8
*WE2	23	A11	A10
*WE3	24	A13	A12
*BURST	25	A15	A14
*BDIP	26	A17	A16
*BI/*STS	27	A19	A18
*TA	28	A21	A20
TSIZ0	29	A23	A22
TSIZ1	30	A25	A24
A30	31	A27	A26
A31	32	A29	A28
J1-C		J1-B	J1-A

I/O Bus

J2-A		J2-B	J2-C
TPB0	32	TPB1	TBB2
TPB3	31	TPB4	TPB5
TPB6	30	TPB7	TPB8
TPB9	29	TPB10	TPB11
TPB12	28	TPB13	TPB14
TPB15	27	T2ACLK	TPA0
TPA1	26	TPA2	TPA3
TPA4	25	TPA5	TPA6
TPA7	24	TPA8	TPA9
TPA10	23	TPA11	TPA12
TPA13	22	TPA14	TPA15
T2BCLK	21	*PCS0	*PCS1
*PCS2	20	*PCS3	MISO
MOSI	19	SCK	ECK
TMS	18	MDA12	*TRST
MDA11	17	MDA15	SGPIO7
MDA14	16	MDA29	SGPIO6
MDA28	15	MPW0	MDA13
MDA31	14	MPW3	MDA27
MPW2	13	MPW18	MDA30
MPW17	12	VF2/MPIOB2	MPW1
EXTCLK	11	MPIO7	MPW16
VF1/MPIOB1	10	MPIO10	MPW19
MPIO6	9	MPIO13	VF0/MPIOB0
MPIO9	8	*RESIN	MPIO5
MPIO12	7	*RTSCONF	MPIO8
MPIO15	6	TXD1-RS232	MPIO11
RXD1-RS232	5	TXD2-RS232	MPIO14
RXD2-RS232	4	EPEE	UBAT-IN
	3		
CAN_L1	2	CAN_H1	CAN_GND1
CAN_L2	1	CAN_H2	CAN_GND2
J2-A		J2-B	J2-C

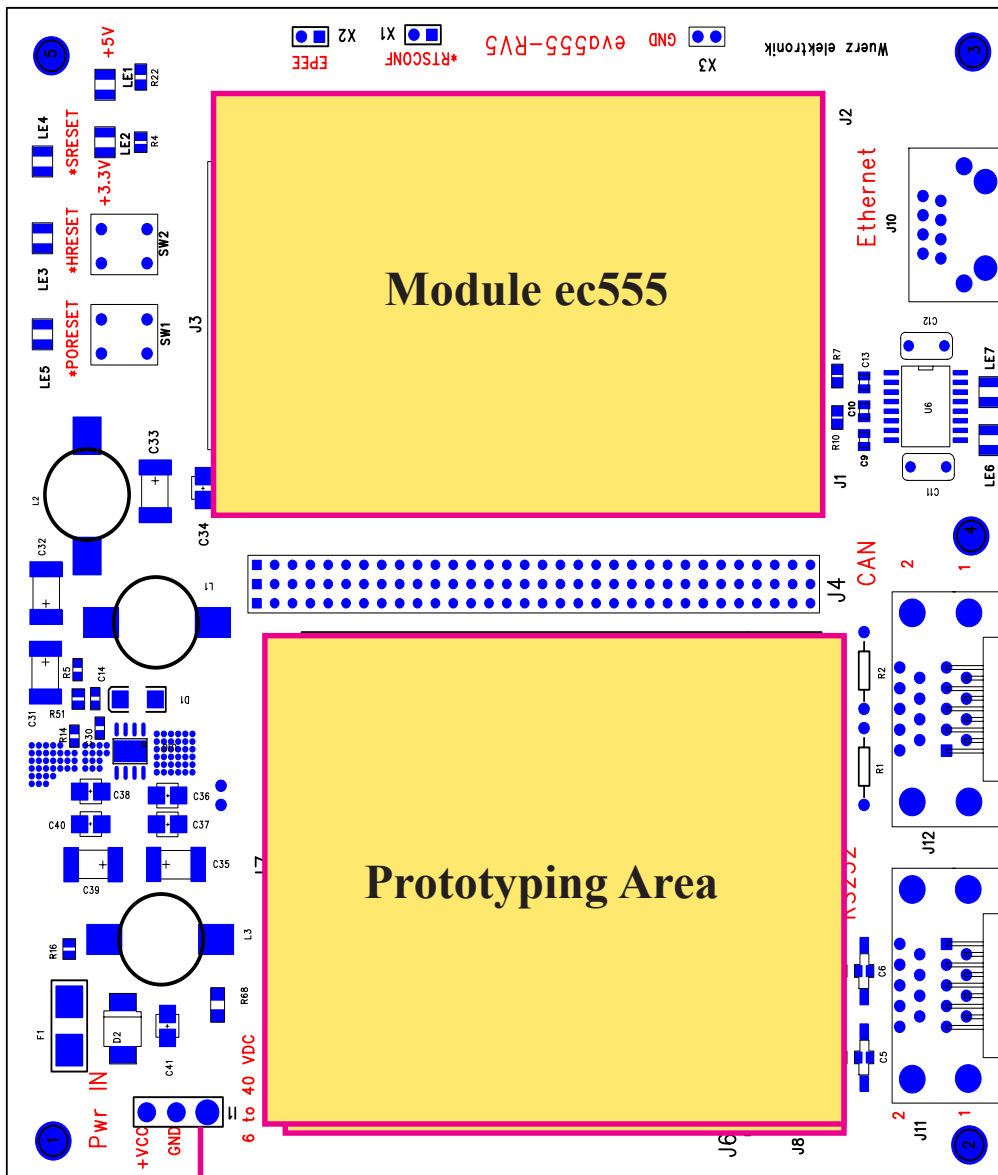
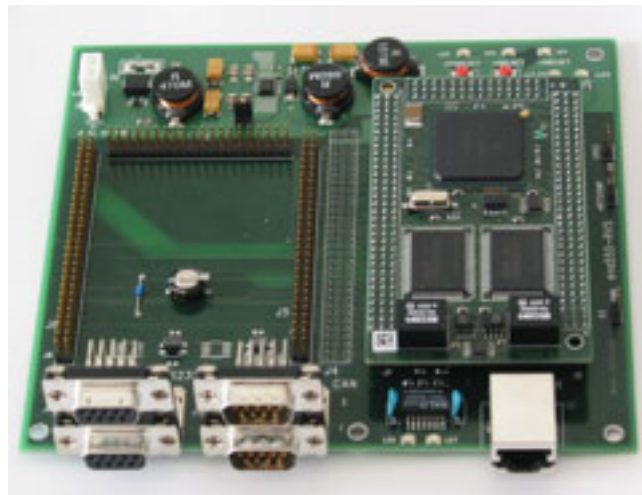
Technical Specifications

Board	Multilayer 97 x 57 mm, Height 15 mm
Main Processor Architecture	MPC555 RISC MCU Central Processing Unit 32 bit PowerPC Core Performance 52.7K MIPS (Dhrystone 2.1)@40MHz 448 Kbytes Flash-EEPROM 26 Kbytes of Static RAM Two Timeprocessor Units (TPU3), 32 Channel 10-bit Analog-to-Digital Converter Two CAN 2.0B Controller Modules (TouCANs) Queued Serial Multi-Channel Modules (QSMCM) provides two Serial Communication Interfaces (SCI) and one Queued Serial Peripheral Interface (QSPI)
Static RAM	Two 32-bit organized Synchronous Burst SRAMs up to 16 MByte (256K x 32-bit), (512K x 32-bit), (1 M x 32 bit) or (2 M x 32 bit)
Flash-Memory	Two 16-bit organized TSOP/II devices up to 16 Mbytes capacity 32-bit data bus width, 3.3 Volt types
Utilities	MAX704 Battery -Backup Power Switching and Reset Backup of Processor SRAM and KAPWR
Background Debugger	The board has a 10-pin connector. All commercial MPC555 compilers and debuggers using the background mode of the MPC555 can be used for the ec555 board. The pin allocation is compatible to Freescale standards.
Serial Interface	The Processor has two SCI (Serial Communication Interfaces) each SCI Channel consist of one RXD and one TXD. These signals are driven by one MAX232A RS232 Transceiver (116kbit/s).
CAN Interface	Two optically isolated CAN-Interfaces. Each CAN-Interface has its own DCDC Converter, Optocouplers and PCA82C250T Transceiver. The physical interface is according to ISO/DIS 11898
Operating Temp.	Commercial (0°C to +70°C) or extended (-40°C to +85°C)
Power Supply	Single 5 Volt , 300mA
Optional:	Conformal coating

ROM Monitor included

The ROM Monitor supports programming of the internal and external Flash. Downloading of S-Records and binary Data files via serial port

Evaluationboard for the ec555 Module



Power supply 6 V to 40 Volt DC

Ethernet

RS232 1 + 2 CAN 1 + 2

Tools for ec555 module - MPC555

ROM monitor for ec555

supports: programming of the internal and external Flash, download of SRECORDS and binary files via RS232. (Shipped with every module-SRECORD)

PROG555 , ICD555

Low cost Debugger and Programmer from P&E

GNU Debugger

Complete development environment running under Linux/Windows (GNU)

Board support packages for ec555 modules

from:



available for :

SingleStep/CrossCode Compiler

from

DIAB-SDS

MQX Real-Time Executive

from



www.embedded-tools.de

Board Support Packs

from



www.metrowerks.com

OSE Realtime Operating System



E-Mail: info@enea.de