

# neoECU 20

## Multi-Network Embedded ECU

### Real-Time, Real Fast ECU Development -

#### 4xDWCAN, 1xSWCAN, 1xLSFTCAN, 4xLIN

neoECU 20 is a rapid prototyping tool for CAN and LIN ECUs. neoECU 20 can be setup to control and measure automotive signals in minutes. ECU logic is defined in function block modeling scripts, allowing you to arrive at a workable ECU early in the design process.



### Applications for neoECU 20:

- Try out new algorithms early in the design process.
- Gateway CAN, LIN, K-Line, analog, or digital data.
- Integrate into ECU load or ECU test boxes to make them intelligent.
- Allow application engineers who are not C programmers to try out new ideas.
- Create custom test instruments.
- Simulate a real ECU environment with dozens of low cost nodes.



### General Purpose I/O and Expansion

neoECU 20 has six general purpose I/O lines. Each line can be programmed to a digital input or output of which four can be analog inputs. All of these I/O can be measured or controlled by the embedded real-time scripting engine. For example, very precise timing measurements can be made using script for I/O to Network message timing applications.

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# neoECU 20

## Device Specifications

- neoVI 3G Architecture over 10x performance over previous devices
- 3 DSPs and 1 RISC processor for 125 MIPS of processing
- Power Consumption (typical): 150mA @ 14.4 VDC
- Sleep Power Consumption (typical): 8mA @ 12.0 VDC
- Power Supply: 6.5-27 volt power operation
- Temperature Range: -40C to +85C
- Vehicle Connectors: 25 pin male D-SUB and 9 pin male D-SUB
- Warranty: One year limited warranty
- Firmware: Field upgradeable design (flash firmware)
- General Purpose IO: 6 MISC IO (0 - 3.3V on MISC 1-6), 4 IO can be configured as analog
- General Purpose IO Rate Report Interval: 1 Hz to 10 KHz or \*based on digital change
- Microsoft certified USB drivers
- Isolated USB
- Stand-Alone including Scripting, Receive Messages, Transmit Messages, Expressions, IO, and Transport Layers
- Battery backed real time clock (RTC)

## Networks - General

- 64 Bit time stamping to accuracy of 10 microseconds on CAN and LIN networks and never overflows
- 0.5 microsecond accuracy timestamp available if using one network only
- Simultaneous operations on all CAN/LIN networks
- Transmit message double-buffering on all networks allows back to back message transmission

## Network Specifications

### 6x CAN Channels

- 4 Dedicated ISO11898 Dual Wire CAN Physical Layer (TJA1040)
- 1 Dedicated ISO11519 Low Speed Fault Tolerant CAN Physical Layer (TJA1054A)
- 1 Dedicated Single Wire CAN Physical Layer GMW3089 / SAE J2411 (MC33897)
- CAN 2.0B Active
- Up to 1 M-Bit software selectable baud rate for Dual Wire CAN channels (auto baud capable)
- Listen only mode support
- Unterminated network detection
- High Speed Mode, Test Tool Resistor, and High Voltage Wakeup support (SWCAN)

### 4x LIN (Local Interconnect), ISO9141, Keyword 2000, or K and L Line

- Full support for LIN 1.X, 2.X and J2602
- LIN J2602 / 2.X compatible physical layer
- Software selectable LIN master resistor
- UART based state machine
- Initialization Waveforms including Fast Init, Five Baud, and Custom
- Programmable Timing Parameters including Inter-Byte, TX Inter-Frame, RX Inter-Frame and Initialization Waveforms (0.5 ms Resolution)
- Software selectable baud rate
- LIN Bus Monitor Mode identifies errors: Sync Break Error State and Length, Sync Wave Error, Message ID Parity, TFrameMax/Slave Not Responding, Checksum Error and Transmit Bit Errors
- LIN Bus Master Mode operates at same time as LIN bus monitor
- LIN Bus Slave simulation - with or without an LDF file
- LIN Bus hardware schedule table with support for LIN diagnostics

## 25 Pin Connector

Pin	Description	Pin	Description
1	SW CAN	14	HS CAN 1 H
2	J1850 VPW	15	HS CAN 1 L
3	LSFT CAN H	16	HS CAN 2 H
4	LSFT CAN L	17	HS CAN 2 L
5	MS CAN H	18	Misc DIO 4
6	MS CAN L	19	HS CAN 3 H
7	ISO L	20	HSCAN 3 L
8	ISO K / LIN 1	21	TSYNC CLK H
9	DBG CLK	22	TSYNC CLK L
10	Misc DIO 1	23	Misc DIO 3
11	Misc DIO 2	24	DBG RESET
12	DBG DATA	25	VBATT
13	GND		

## 9 Pin Connector

Pin	Description	Pin	Description
1	LIN 1	6	MISC DIO 5
2	LIN 2	7	MISC DIO 6
3	LIN 3	8	NC
4	LIN 4	9	NC
5	GND		

## Ordering Information:

Part Number	Description
NEOECU-20	neoECU 20 device

\*Specifications subject to change. Please contact Intrepid for the latest information.

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