

UCC Ethernet Driver

PRODUCT DESCRIPTION

This driver package applies to Freescale's QE based devices (e.g. MPC8360, MPC8321/3, MPC8568) UCC's Ethernet protocol.

The driver abstracts UCC programming model and provides the user application with a simple and easy to use API.

PRODUCT FEATURES:

- A stand alone driver
- Can be easily adopted to support any popular operating system (a hook for WindRiver VxWorks is available)
- Supports 1000/100/10 Mbps (TSEC)
- Supports both Single and multi BD rings (up to 8)
- Supports all extended features (e.g. addition of MAC addresses, VLAN, IP header check-sum, QoS)
- Initializes the UCC registers parameters using a single C function call
- Very efficient buffer pool handling
 - Module is implemented in assembler
 - Two modes of operations:
 - *Safe* - driver checks return buffer to guarantee no double release
 - *Fast* - all extra check are disable
 - Mutual Exclusion supported to enable use at interrupt and none-interrupt instances
 - Optionally, Rx buffers are managed by DoGav's customized microcode



- Interrupt driver (if desired)
- Supports up to five call-back functions from interrupt handler:
 - Rx buffer (or frame)
 - Tx buffer
 - Rx buffer with an error
 - Tx buffer with an error
 - Global event (e.g. pause message)
- Extensive 32-bit statistics counter
- NAT capabilities (port to port) with DoGav's customized microcode
- Payload check-sum for UDP with DoGav's customized microcode

API FUNCTIONS

The following functions are partial list of the prototypes of the user API:

```
int DG_Init_83xx_Init (void); // board specific
int DG_Init_83xx_Ether (DG_MPC83xx_HDLC_INIT_S *pINIT);
int TxUccEther (UCC_NO_E UCC_NUM, P_UINT8 *buf, UUINT16 size);
void EnableUccEther (UCC_NO_E UCC_NUM);
void EnableIrq (UCC_NO_E UCC_NUM);
UUINT32 GetRxCnt (UCC_NO_E UCC_NUM);
UUINT32 GetTxCnt (UCC_NO_E UCC_NUM);
UUINT32 GetRxErrCnt (UCC_NO_E UCC_NUM);
UUINT32 GetTxErrCnt (UCC_NO_E UCC_NUM);
```

Note:

This driver has been successfully deployed by several customers.





ABOUT DOGAV SYSTEMS

DoGav Systems is a leading provider of software and hardware consultancy and training services. It specializes in Freescale's processors, in particular the PowerQUICC family of communication processors. It has a proven track record of over 20 years supporting Freescale customers in developing market-leading products for the communications equipment market.

DoGav Systems is Freescale's most experienced and active microcode developer. Since receiving its license in 2000, it has developed numerous customized microcode packages for both small and large Freescale customers. These packages are now successfully deployed in commercial products. In addition, DoGav Systems also offers more than 30 off-the-shelf microcode products for the PowerQUICC I, PowerQUICC II, PowerQUICC III and PowerQUICC II Pro processors.

