

## UCC HDLC Transparent Driver

### PRODUCT DESCRIPTION

This driver package applies to Freescale's QE based devices (e.g. MPC8360, MPC8321/3, MPC8568) UCC's HDLC/Transparent 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 adopted to support any popular operating system (a hook for WindRiver VxWorks is available)
- Supports both HDLC and Transparent protocols
- 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
- 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 (e.g. CRC error)
- Tx buffer with an error (e.g. CTS lost)
- Global event (e.g. busy)
- Extensive 32-bit statistics counter
- Supports H/W flow-control (CD/CTS)
- Supports internal loop-back for BIT module
- Can be purchased with DoGav's microcode to extend the synchronization pattern to up to 64-bits (originally supports only 8 or 16 synchronization pattern).
- Selection of include or discard synchronization pattern in the Rx buffer

## API FUNCTIONS

The following functions are the prototypes of the user API:

```
int DG_Init_83xx_Init (void); // board specific
int DG_Init_83xx_TRANS (DG_MPC83xx_HDLC_INIT_S *pINIT);
int TxUccHdls (UCC_NO_E UCC_NUM, P_UINT8 *buf, UINT16 size);
void EnableUccHdls (UCC_NO_E UCC_NUM);
void EnableIrq (UCC_NO_E UCC_NUM);
UINT32 GetRxCnt (UCC_NO_E UCC_NUM);
UINT32 GetTxCnt (UCC_NO_E UCC_NUM);
UINT32 GetRxErrCnt (UCC_NO_E UCC_NUM);
UINT32 GetTxErrCnt (UCC_NO_E UCC_NUM);
```

### Note:

This driver has been successfully deployed by several customers - some at a rate of 70Mbps.





### **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.

