ISOMAX CHANGES FROM V0.76 TO V0.82

Changed default baud rate to 115200 baud.

Added generic high-level interrupt handler (GEN_IRPT and HANDLER).

Modified timer interrupt and generic interrupt handler to save the hardware stack (both levels) on an interrupt, to fix the problem of hardware stack overflow during state machine execution.

Changed signon message to display numeric version number (generated automatically from SYSTEM_VERSION) rather than a text string.

Added user-programmable Illegal Instruction interrupt vector. If user has not provided a vector, default action is Reset.

Modified IsoMax and Servo timer interrupt code to save temporary variables mr2,mr3,mr8,mr9,mr10,mr11. These are used by various kernel words (including floating point).

Increased C stack size from 128 to 160 cells to allow for more pushes on interrupt, and use of f.p.code during nested interrupts. (Interrupt now pushes 28 cells. F.p. primitives push 10 cells.)

Changed 2SWAP and 2ROT to not use ROLL (fixes D. crash problem).

Fixed bug in GPIO ?ON ?OFF that didn't push result on stack (didn't save updated stack pointer).

Added code to initialize PWM channels to "independent" on reset.

ISOMAX CHANGES FROM V0.6 TO V0.76

GPIO SOFTWARE UART

Added "software UART" functions to allow serial I/O on port E pins. Methods BAUD, IS-TX, IS-RX, RX? RX, TX?, and TX are supported for pins PE2-PE7.

INDEXED OBJECTS

Added "indexed objects" which allows I/O pins to be referenced by number rather than by name, e.g. 1 PIN instead of PA0. (Numbering varies among different IsoPod products.) Methods ON, OFF, TOGGLE, SET, ON?, OFF?, ANALOGIN, PWM-PERIOD, and PWM-OUT can be used (if supported by the pin hardware).

PWM OUTPUT IMPROVEMENTS

Increased the range of PWM-PERIOD to allow shorter periods: now 0004-7FFF for PWM outputs and 0004-FFFF for timer outputs.

Added new methods COMPLIMENTARY and INDEPENDENT to select mode of PWM outputs, and DEADTIME parameter for complimentary outputs.

Added PWM-UPDATE, a faster version of PWM-OUT that does not initialize the port.

QUADRATURE DECODER PORTS

New I/O objects QUAD0 and QUAD1 support the built-in quadrature decoders, with methods QUADRATURE, SIGNED, RESET, and POSITION. These methods are also defined for timers, so that pairs of timer inputs can be used as additional quadrature decoders.

REVISED PROGRAM MEMORY MAP

Revised link map for contiguous kernel.
0000h to 53FFh IsoMax kernel.
5400h to 7CFFh Application program ROM (empty).
(Note: exact boundary varies depending on IsoMax product.)

MISCELLANEOUS NEW WORDS

Added EVALUATE, D2*, MILLISECONDS, MICROSECONDS.

Added FROT.

Added UD*, RAND, DRAND, FRAND.

seed is now a 2VARIABLE.

STOP-TIMER has been renamed MSTOP.

Added SSTOP to halt soft UART processing, and SSTART to restart it.

MISCELLANEOUS CHANGES

Most I/O methods have be rewritten in assembly language for increased speed.

AUTOSTART no longer needs to have a ROM address specified; it always uses a fixed vector at the start of User Program Flash. (Cleared by SCRUB.)

Fixed F. to properly display 0.0.

Fixed FLOG and FLN to accept arguments greater than 4.0E9.

Fixed problems with F** and FATAN2.

Fixed flash routines to allow writes to user interrupt vector table.

DUMP now uses the current base (rather than always hex).

Changed IsoMax to use timer TC3. TD3 is now available for the user.

Timer TC2 is now used by IsoMax and not available to the user.