

**THINGS ALL EASON BASIC PROGRAMS NEED
“WINBUILD POINTERS”**

This technote will detail a few elements that make debugging and using the Eason 1000 series easier.

Two programming items that all programs should have in it are the ability to start the program on power up and to handle any errors in the program without crashing. This is accomplished with the following two sets of code.

POWER RESUME ON - This statement should be at the top of all programs. The command causes the unit to run on power up if it was running when it shut down. This allows the program not to come up in a vulnerable condition where access can be made to the code running the program.

ON ERROR GOTO - This is an especially useful command in that it allows for an error handling routine to be placed into the program. When used in concert with the ERR and ERL functions, the user will be able to tell on what line number an error occurred and the error code associated with it. Another option for this command is the ability to attempt to reset communications if they fail. Simply check the value of the ERR and branch off an IF ... THEN statement based on the error number to reset communications. For example when communicating with a plc that is running a significant amount of ladder code it is possible for the communications with the PLC to timeout. To fix this program branch to an error handling screen check to make sure the ERR=53 then reinitialize communication and RESUME your program.

Debug Tricks - The following commands are very helpful as debugging tools. They are typically issued in terminal mode with the Eason. **CALL COMLNK(257,1)** - This command puts the unit into pass-thru mode where all characters received on Com1 are passed to Com2 and vice versa. This is very useful when debugging communications with motion controllers to be sure that syntax and responses are working as expected. The **TRACE** command allows the programmer to see the line numbers of the program as they occur, this is very useful for debugging instances where the program appears to lock up. The **TRACE** will reveal if the program is stuck in a loop or on a given command. Another helpful trick while developing a program is to embed a **HOT KEY** in the unit that will jump to the end of the program and exit it. This makes it very easy to halt and restart program for testing certain elements.

Snippets of Code - These snippets of code are very useful in most programs for doing small routines for which there isn't a call or pseudocode.

REPEAT: ZJUNK=INKEY(#1):UNTIL ZJUNK=0

This command line will clear any of the Eason's three buffers simply by using #1, #2, or nothing to indicate which of the buffers. #1 refers to Com Port 1. #2 refers to Com Port 2. A blank between the parenthesis refers to the Keyboard buffer.

INP ALLIO&: IOPT5%=BIT(5,ALLIO&)

This bit of code will read in the I/O port and then parse out a given bit. Allio& is a numeric representation of the I/O port. Iopt5% is the value of bit 5.

Help on all the commands used in this note can be found in the Winbuild help system or in the Basic Users Guide.