

DAPL 3000 Error Message Summary

This listing describes error messages that could be reported by DAPL 3000 software systems through versions 1.00. This listing applies for all models of xDAP processors.

If you know the activity that resulted in the error diagnosis, you can find the error message in the appropriate subsection:

- [Serious faults](#)
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Alternatively, you can use your browser to search for the error number.

Serious faults

Error messages listed in this section should never occur. They could indicate damaged hardware or damaged software systems.

Hardware faults

- *** Error 0: undefined error
- *** Error 2: fatal system error
- *** Error 3: fatal system error
- *** Error 5: fatal system error
- *** Error 8: fatal system error
- *** Error 10: fatal system error
- *** Error 12: fatal system error
- *** Error 14: fatal system error
- *** Error 15: fatal system error
- *** Error 16: fatal system error
- *** Error 26: fatal system error
- *** Error 28: fatal system error
- *** Error 29: fatal system error
- *** Error 30: fatal system error
- *** Error 32: fatal system error
- *** Error 34: fatal system error
- *** Error 35: fatal system error - **text**

These errors result from processor hardware traps of invalid instructions. These messages can occur when damaged DAPL system software is executed, or when DAPL system software runs on a damaged processor module. In some circumstances, it is possible for a custom command processing to execute invalid code and produce errors of this sort. First, try reloading your DAPL system from the *Data Acquisition* control panel application. If you think it is possible that the DAPL software on your disk drive has been damaged, try reinstalling your DAPL software system. If the error persists, you should call Microstar Laboratories about further problem diagnosis.

- *** Error 1145: hardware error: **description**

A hardware error occurred during DAPL system initialization. Contact Microstar Laboratories for technical support.

- *** Error 2335: **fault type** exception at **location**

- *** Error 2336: **fault type** exception at **location** error code = **code**

A hardware error resulted in a software fault that was detected by software exception handling. The fault is detected differently, depending on whether a hardware error code is produced at the time of the hardware fault. Damaged

hardware devices are the most likely cause. Contact Microstar Laboratories for technical support.

*** Error 2384: digital I/O port **number** faults at pins **bitmap**

*** Error 2385: digital I/O port **number** faults persistently at pins **bitmap**. Faulting pins are disabled

These messages can occur for some DAP models when DAPL system monitoring tasks receive notification from digital I/O port hardware that one of the digital output lines became temporarily or permanently shorted through a low impedance path to a power or ground voltage. Faults are always error conditions — you should take immediate action to diagnose and correct the problem. If the fault is temporary and persists only for a brief instant, the first message form is used and the output pin remains in service. If the fault is longer duration, the second message form is used, and the diagnosed pin is deactivated and placed into a high-impedance mode. The error message gives the address of the affected digital port. The **bitmap** shows the positions of faulted bits within that port, using a hexadecimal notation. The bit positions with a 1-value experienced the faults. Disabled bits remain disabled until the DAPL system is reinitialized by disconnecting the DAP from the host system and turning off the power supply switch, or by forcing the DAPL system to be reloaded from the Data Acquisition control panel application.

Software faults

*** Error 1256: **CmdName** - function **name** is not supported by this version of DAPL. Task terminated.

*** Error 1258: **CmdName** - attempt to use an undefined function

*** Error 1260: **CmdName** - buffer reference overrun; task terminated

*** Error 1261: **CmdName** - target is no longer present

*** Error 1262: **CmdName** - an unexpected error from C runtime library - **name**

*** Warning 1539: pipe reader/writer has sent an abort signal

*** Error 2312: synchronizer error - **name**

*** Error 2313: synchronizer error - **number**

*** Error 2324: synchronizer has no task user

*** Error 2328: pipe is too small for the data

*** Error 2329: illegal DAPL type

*** Error 2340: symbol does not have an associated descriptor

*** Error 2375: out of I/O configuration memory entries at **address**

*** Error 2376: I/O configuration memory entry **number** is out of range (**0-range**)

*** Error 2377: out of I/O sequence memory entries at **address**

*** Error 2378: I/O sequence memory entry **number** is out of range (**0-range**)

*** Error 1257: **CmdName** - attempt to destroy a synchronizer when it is in use

*** Error 1259: **CmdName** - null pipe buffer object is used; task terminated

*** Error 2339: building **command name** type information failed - **cause**

*** Error 2347: not enough data to complete the system configuration operation

*** Error 2356: cannot access **name** parameter as **property**

*** Error 2357: cannot access multiple targets as a single one; access them individually

*** Error 2371: not enough ROM space

*** Error 2372: ROM image **name** of the specified type does not exist

*** Error 2381: **name** is not an I/O channel pipe

*** Error 2382: channel pipe and its qualifier type mismatch

*** Error 2352: DAPL runtime error - **message**

*** Error 2353: DAPL library runtime error - **message**

*** Error 1255: **CmdName** - an unhandled case **number** in "???" an exception has occurred. Task terminated

*** Error 2314: uncaught exception - **exception message**. Task terminated.

*** Error 2315: uncaught exception - **exception code**. Task terminated.

*** Error 2316: unknown exception

These errors indicate a structural error in the DAPL system software. Ordinarily, it should be impossible to observe these error messages, but they could occur in an unpredictable manner after execution of invalid custom command code. The problem should exist only in the downloaded copy of the software in DAP memory, so first, try reloading your DAPL system using the *Data Acquisition* control panel application. If you think it is possible that the DAPL software on your disk drive has been damaged, try reinstalling your DAPL software system. If this does not correct the problem, call Microstar Laboratories about further problem diagnosis and repairs.

*** Error 2337: C library runtime error - **name**

*** Error 1251: **CmdName** - not enough local pool memory

A software exception was caused by an inconsistency in the runtime library support code provided by the C++ compiler. This is most likely to occur if there is a configuration problem for the Developer's Toolkit for DAPL, so that an incorrect compiler library components or incorrect compiler options are used. If you have verified that you are using the correct compiler library files and default toolkit options, and this problem persists, call Microstar Laboratories for technical

support.

***** Error 2295: calibration DACnumber out of range: compare**

When calibrating a DAP5400a or certain accessory expansion boards using the DAPL system CALIBRATE command, the calibration process failed to complete. It is not possible to apply a large enough adjustment to compensate for the observed offset and/or gain. The `compare` text gives information about the measurements observed and the values expected. Check connections to voltage references and try repeating the calibration. If you cannot get a successful calibration, there is probably hardware damage. Contact Microstar Laboratories customer support to arrange for further diagnosis and repairs.

***** Error 2296: calibration ADCnumber failed to converge: compare**

When calibrating a DAP5400a or certain accessory expansion boards using the DAPL system CALIBRATE command, the calibration process failed to complete successfully. There was too much random variation in the data set to achieve a reliable calibration. The `compare` text gives information about the measurements observed and the values expected. Check connections to voltage references and try repeating the calibration. If you cannot get a successful calibration, there is probably hardware damage. Contact Microstar Laboratories customer support to arrange for further diagnosis and repairs.

Software-captured exceptions

Error messages listed in this section result from software exception conditions caught by the DAPL system. Usually, these occur in custom-developed command software before the code is fully tested. There are a few special cases where exceptions can occur when dynamically changing a configuration parameter from a valid value to an invalid one while the task is running. Otherwise, when using commands provided by the DAPL system, these should never occur; please report the problem so it can be corrected in future DAPL system versions.

***** Error 2202: division by zero interrupt**

This error should never occur when using built-in DAPL commands. It can occur in custom command processing when the command attempts to divide by a zero number, or attempts to use a machine instruction to divide a 64-bit number by a 32-bit number, obtaining a result that exceeds the range of a 32-bit result. This problem must be corrected by recoding and recompiling the custom command, or by finding some other means to avoid data that causes the problem.

***** Error 2203: interrupt number at location**

An unexpected interrupt occurred, and was trapped by the DAPL system. If not the result of incorrect custom command programming, it could indicate a serious DAPL system error. Try reloading your DAPL system using the *Data Acquisition* control panel application. If you think it is possible that the DAPL software on your disk drive has been damaged, try reinstalling your DAPL software system. If this does not correct the problem, call Microstar Laboratories about further problem diagnosis and repairs.

***** Error 2204: general protection at location error code = code**

This message indicates that a task attempted to address an inaccessible memory location, one that was not reserved for the task. The `location` information describes where the illegal memory access attempt occurred. Faults of this kind are usually related to programming errors in custom command code: improper use of pointers or indexing, memory allocations of the wrong size, or initializations that were not performed as intended. Examine the code for custom command modules carefully. If the application does not use custom command modules, please report this error to Microstar Laboratories Customer Support.

***** Error 2205: fault exception number at location error code = code**

A hardware-related fault condition was detected. An error code produced by the processor hardware is shown in the error message text. If the application does not use custom DAPL commands or modules, please report this error to Microstar Laboratories Customer Support. Severe structural errors in custom command processing modules could result in specious errors of this type without any actual hardware fault. Check custom command code for improper use of pointers or indexing, improper use of segment registers, stack and dynamic memory range errors, invalid module linking, and floating point control instructions.

***** Error 2206: undefined interrupt**

A software-requested interrupt occurred. This usually results from execution of invalid program code, such as an invalid downloadable module or assembler coding with an invalid branch instruction. If the application does not use custom DAPL commands or modules, please report this error to Microstar Laboratories Customer Support.

***** Error 2207: floating point exception 16 : message**

A floating point exception occurred. The default configuration of the DAPL system adjusts the *Floating Point Unit* of the

processor hardware to apply standard fixups rather than raise floating point exceptions. However, it is possible for custom command processing to change control words in the floating point unit to disable the default fixup processing. If this occurs, a subsequent floating point fault event will cause the DAPL system to issue this error message. No mechanism is available currently for vectoring the interrupts to a user-defined interrupt handler for recovery. This problem must be corrected in the custom command code, and the module recompiled. The supplementary message text provides information from the processor hardware about the problem that caused the exception:

- invalid operation
- divide by zero
- overflow
- underflow
- denormal
- loss of precision
- FP stack error
- by INT instruction

General command parsing and syntax

Messages listed in this section occur when commands in a downloaded DAPL configuration file are parsed, or a direct command text is analyzed. Typically, these are typographical errors, unintentional incorrect references, or inconsistent numerical notations. Errors of this sort are usually not serious, and are relatively common while DAPL configuration files are under development and test, but they will never occur in a correctly-configured DAPL script. Changing the DAPL configuration file should correct these problems.

*** Error 1004: illegal command - "context"

While the DAPL command interpreter is parsing a configuration script, and expecting a command name at the beginning of a new line, it encounters text that it cannot recognize as a valid command name. This is probably a typographical error. Sometimes this error occurs when the previous line is not correctly marked with a back-slash continuation character, so a continuation of the previous line is interpreted as the beginning of a new command line.

*** Error 1009: illegal symbol type

During DAPL command parsing, a named element has the wrong type for its context. For example, there was an attempt to assign a value to a pipe in a LET command where a constant or variable name is required.

*** Error 1023: undefined symbol - **name**

A command contains an undefined symbol name. Usually this error results from neglecting to define a data element before referencing it in a processing task parameter list. This can also result from spelling a name incorrectly.

*** Error 1026: unmatched parentheses - **context**

In a command such as VECTOR initializer list or a DAPL expression, there is an open parenthesis that is not terminated by a closing parenthesis at the end of the expression.

*** Error 1030: string must be enclosed in quotation marks - **text**

When parsing the initializer expression for a STRING command, a string expression enclosed in double-quotes was expected, but instead, the **text** shown in the error message was encountered.

*** Error 1101: expecting '=' after option name

When setting the value of a system option with the OPTIONS command, the name of the option to be changed must be followed by an equals sign.

*** Error 1106: undefined pipe - **name**

An EMPTY or FILL command line specifies the name of a pipe that doesn't exist. Make sure that the pipe is properly declared, and verify that the name was given correctly in the command line.

*** Error 1110: illegal parameter - **parameter**

While the command line for a processing task is parsed, it can also be validated against a parameter processing specification. If there is an inconsistency between the parameter types that are allowable, and the parameter type actually used for the task definition, this diagnostic can result. The error might not really be at the parameter position indicated — this is just where the command parser learned about the inconsistency, which might not happen until the end of the parameter list.

*** Error 1112: illegal Boolean value - **value**

For switching certain system options on or off using the OPTIONS command, the switch value must be one of the

following:

- ON
- OFF
- YES
- NO

***** Error 1117: missing parameter(s)**

A command line is incomplete. Some examples:

- the time interval was omitted from a TIME command line
- the symbol to modify is missing from the EDIT command line
- no sample count is specified on the COUNT command line

***** Error 1118: extraneous characters at end of line - context**

Unexpected text appears beyond the point where a command line appears to be logically complete without the unrecognized text. Some examples of when this could occur:

- an optional command parameter is incorrectly typed
- a list of comma-separated items is missing a separator comma
- additional non-comment text follows the elements that should terminate the command
- an improperly formed comment at the line end

***** Error 1120: missing name**

In a command such as PIPES or LET, where the user is expected to specify the name of an element, the name is missing from the command line. This error can occur if a required name field is omitted, if there is a duplicated separator such as a comma in a list of names, or if an extra separator character such as a comma appears after the last element of a list.

***** Error 1122: symbol already is defined**

A name selected for a new element was previously assigned to some other element. Use RESET to remove all previous symbol definitions, or use ERASE command to remove symbol names selectively. Otherwise, select a different name for the new element.

***** Error 1128: number is out of range - number**

The number entered was too large or too small to be valid in its context. For data elements, this typically means that the number in the command text was too large to be represented in the specified data type. For a command that establishes a configuration parameter, such as COUNT for an input procedure, this could mean that the number is negative.

***** Error 1129: illegal decimal number - context**

A specification for an integer value contains invalid characters or has a numerical value that cannot be represented. Decimal numbers can contain only the characters 0 to 9, optionally preceded by a minus sign.

***** Error 1130: illegal hexadecimal word - context**

Invalid characters (not in the ranges A-F or 0-9) are present in a hexadecimal number notation, there are too many bits represented by the notation, or the value represented by the notation exceed the range of a 16-bit signed integer data element.

***** Error 1131: illegal hexadecimal long word - context**

Invalid characters (not in the ranges A-F or 0-9) are present in a hexadecimal number notation, there are too many bits represented by the notation, or the value represented by the notation exceed the range of a 32-bit signed integer data element.

***** Error 1133: number is negative - number**

Only positive numbers are allowed in this context.

***** Error 2211: IPIPES or OPIPES used in the wrong context**

The reserved IPIPES notation was used improperly for defining channels in an output updating procedure, or OPIPES was used improperly for defining channels in an input sampling procedure.

***** Error 2213: invalid channel range specification**

The channel range notation in a channel list has terms that are not valid integer values within ranges supported by the DAP hardware.

***** Error 2223: illegal channel group specification**

An incorrect IPIPES specification is found in a SET command for Data Acquisition Processor model that supports only certain predetermined channel groups. The most likely problem is an incorrect channel number in the channel list notation.

***** Error 2229: previously specified - term**

There is a redundant and possibly contradictory specification. A command line parameter appears more than once. For example, MAXSIZE=1000 and MAXSIZE=2000 are both present on the same PIPE definition line.

***** Error 2230: error in keyword syntax - context**

Unexpected text was encountered in a processing definition command line where a keyword notation was expected. Verify that the text has the correct upper or lower case. Check the command for the set of keywords it can accept.

***** Error 2231: unrecognized command syntax - context**

***** Error 2269: bad command syntax near context**

Unexpected text was encountered at a time when the command interpreter was not sure of what to expect. The `context` shows the part of the command line where the interpreter became confused and could not continue.

***** Error 2237: name name contains invalid characters**

In a DAPL command, a user-assigned name for a configuration element such as a pipe or procedure contains invalid special characters. Check the *DAPL Manual* for restrictions on characters that can be used in assigned names.

***** Error 2238: name name is already defined**

A slightly more informative version of Error 1122. The name selected for a new element was previously assigned to some other element. Use RESET to remove all previous symbol definitions, or use ERASE command to remove symbol names selectively. Otherwise, select a different name for the new element.

***** Error 2240: invalid time interval syntax context**

Restrictions on the range of time notations for a TIME command in an input sampling or output updating configuration were not followed. Check the details in the *DAPL Manual* regarding special restrictions on the TIME values specified by TIME commands.

***** Error 2241: invalid IPIPE or OPIPE specifier**

In a SET command, there is an unrecognized specification where an IPIPE or OPIPE channel or channel group specifier was expected. See the "Channel Pipe Notations" section of the *DAPL Manual* for information about channel specifiers and acceptable abbreviations.

***** Error 2242: invalid channel pipe syntax - context**

The channel pipe range notation following the IPIPE or OPIPE keyword is invalid. Check that the values cover the correct ranges and are properly enclosed in parentheses.

***** Error 2247: invalid numeric value - context**

In parsing various DAPL command types, the DAPL system encountered an expression that was expected to represent a number value, but something else was found instead. For example, a PRIORITY command will expect a numeric priority level. Probably a typographical error.

***** Error 2261: invalid floating point value**

An unrecognized or unrepresentable number value is specified in a context where a floating point number was expected.

***** Error 2262: invalid word integer value**

An unrecognized or unrepresentable number value is specified in a context where a 16-bit integer number was expected.

***** Error 2263: invalid long integer value**

An unrecognized or unrepresentable number value is specified in a context where a 32-bit integer number was expected.

***** Error 2264: inconsistent data type**

In a command that can accept multiple data types, but needs the parameters to share a common data type, the values provided are represented by different data types. For example, a floating point value is not acceptable where a 16-bit fixed point constant is needed for consistency.

***** Error 2265: missing initializer expression**

For a command such as VECTOR or CONSTANT where an initialization value or list is required, that list is missing.

***** Error 2268: unexpected end-of-line**

Interpretation of a command line ended abruptly without receiving all required elements. This error typically occurs if a separator character promises that additional elements will appear in the command line, but these are omitted.

***** Error 2271: symbol `name` has invalid type**

An otherwise valid symbol name was used in a manner that is not meaningful or not allowed. For example, a pipe name cannot be used to specify an initial value for a variable.

***** Error 2251: `name` is not a communication pipe**

A referenced system element was supposed to name a communication pipe object, but instead referenced some other type of element. This can occur when a user software application attempts to remove a communication pipe from service but names an invalid element by mistake. You can avoid this error in a running application by pre-configuring your communication pipes using the *Data Acquisition* control panel application.

***** Error 2351: illegal hexadecimal long long word - `context`**

In certain system commands that allow very large numbers, an unrecognized expression was encountered, typically because of a typographical error. Only a few system commands allow the extended 64-bit numbers. Other than the number of characters, the notations are the same as other hexadecimal number notations. See the *DAPL Manual* for more information about hexadecimal number notations.

***** Error 2362: symbol name `name` is reserved**

You must select different names for defining your configuration elements. To avoid confusion with references to input and output channel pipes, the following names are not allowed for new user-defined elements.

<code>ip</code>	<code>ipipe</code>	<code>ipipes</code>
<code>op</code>	<code>opipe</code>	<code>opipes</code>

In addition, the following names are reserved for backward compatibility with legacy DAPL 2000 configurations.

<code>inside</code>	<code>outside</code>
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***** Error 2369: invalid long long integer**

In certain system commands that allow very large numbers, an expression was encountered that cannot be interpreted as a representation of a 64-bit integer value. Only a few system commands allow the extended 64-bit numbers. This is probably a typographical error.

Directly executed commands and declarations

Error messages listed in this section are related to problems with directly-executed system commands (e.g. OPTIONS) or commands that define user-configurable elements (e.g. PIPES).

Configuration errors related to input sampling procedures, output updating procedures, or processing procedures appear in later sections.

***** Error 1037: procedure generation failed**

Insufficient system memory is available when attempting to activate an input, output or processing procedure with the START command. If the error message suggests a reset, enter a RESET command. Otherwise, use either a STOP command or RESET command to free up unused memory resources, and then try again to run the configuration.

***** Error 1043: procedure name must be an input or output procedure**

An EDIT command can make certain modifications to input or output procedures configurations but not processing configurations.

***** Error 1044: procedure currently is active**

An EDIT command cannot modify an input or output configuration that is currently running. Apply a STOP or RESET command and try again.

***** Error 1045: procedure generation failed - RESET the system**

The system ran out of available memory and cannot complete the activation of an input, output, or processing procedure. Use the RESET command to release memory taken during previous operations, then try again.

***** Error 1062: illegal EDIT procedure option - `context`**

See the EDIT documentation for a list of accepted options.

***** Error 1064: illegal output com pipe - `context`**

The `OUTPUT = pipe` option of a FORMAT command line can only be used to redirect output to an output

communication pipe that accepts text streams.

***** Error 1072: task creation attempt failed**

A procedure could not be started due to lack of available memory. Issue a STOP command or a RESET command to release memory taken during previous operation but never released, then try again.

***** Error 1073: active input procedure does not have a COUNT specification**

The SAMPLEHOLD command cannot be used with the currently active input procedure because it does not include a COUNT specification. Without a COUNT specification, the procedure would never terminate.

***** Error 1074: undefined procedure - *name***

A name given in the parameter list of a START or STOP command does not correspond to a previously defined procedure. The message will show one or more names beginning with the unrecognized procedure name.

***** Error 1075: procedure already is active - *name***

An attempt was made to start a procedure that was previously started but never stopped.

***** Error 1077: procedure is not active - *name***

The specified procedure was not started and cannot be stopped.

***** Error 1078: illegal display parameter - *context***

The display option specified on a DISPLAY command is not recognized. See the DISPLAY documentation in the *DAPL Manual* for a list of supported display options.

***** Error 1082: illegal pipe parameters**

An invalid configuration option was specified on a PIPES command. For example, the MAXSIZE parameter does not specify a valid positive number.

***** Error 1084: illegal blocking size**

An incorrect transfer block size was specified for a communication pipe. This can occur when application software configures the pipe, when pipe properties are configured in the Data Acquisition control panel application, or when an EDIT command modifies the pipe properties. The blocking size must be a number of elements greater than zero and less than the maximum buffering size of the output communications pipe.

***** Error 1085: illegal pipe type**

The characteristics of a pipe being modified by an EDIT command are inconsistent with the new pipe characteristics specified. The pipe characteristics are not changed. Check the documentation for the EDIT command in the *DAPL Manual* for information about modifying pipe properties.

***** Error 1098: MAXSIZE parameter is too large**

The maximum number of elements for buffering in the user-defined pipe is too large for available storage.

***** Error 1099: inconsistent pipe definition parameters**

Inconsistent pipe options were specified for a communication pipe, for instance, BINARY data and text ECHO.

***** Error 1105: illegal com pipe edit parameter - *context***

The parameters of a communication pipe that can be modified by an EDIT command are:

- ECHO
- NOECHO
- BLOCKING
- WIDTH

***** Error 1111: illegal OPTION command - *option***

The specified option code for the OPTIONS command was not recognized. See the OPTIONS documentation in the *DAPL Manual* for a list of available options.

***** Error 1127: this symbol cannot be edited**

The item specified cannot be modified by an EDIT command. Only communication pipes, input procedures, and output procedures can be modified by the EDIT command.

***** Error 1165: illegal OUTPORT syntax**

The range specification in an OUTPORT command line is invalid. Verify that the channel range number and the dot-dot separator are entered correctly.

***** Error 1166: illegal output expansion board type**

The second parameter on an OUTPORT command line must be a **TYPE=** expression with a value 0 for digital output expansion boards or a value 1 for analog output expansion boards. No other values are accepted. See the description of the OUTPORT command in the *DAPL Manual* or the hardware manual for your expansion board for details.

***** Error 1167: illegal output expansion port(s)**

The first parameter on an OUTPORT command line must be a port number or a port range specification, but something else was found instead. See the description of the OUTPORT command in the *DAPL Manual* for more information about how to specify output ports and port ranges for expansion boards.

***** Error 1168: pipe already is reserved by a user task**

An attempt was made to use a FILL command to put data into a pipe where a running task is already writing data. If you need the FILL operation, you must stop procedure that has the task writing to the pipe, then try again.

***** Error 1171: previous input procedure still is active**

There was an unsuccessful attempt to start an input procedure while there is other active input processing. Stop the other active input processing and try again.

***** Error 1172: task(s) reading from input channel pipe(s) still are active**

An attempt was made to start an input procedure while a running task is already reading data from the input channel pipes. Stop the active input procedure and the processing procedure with the reader task, and try again.

***** Error 1173: previous output procedure still is active**

***** Error 1174: task(s) writing to output channel pipe(s) still are active**

An attempt was made to start an output procedure while it, or the task supplying its data, was already running. Stop the output procedure and the processing procedure with the data supplier task, and try again.

***** Error 1176: cannot FILL an input com pipe - *name***

***** Error 1187: cannot FILL a system pipe - *name***

The FILL command cannot place data into system command pipes or input communication pipes. This is either a typographical or application software error.

***** Error 1198: unipolar output is not available**

When parsing an OUTPORT command, the DAPL system encountered a **BPOUTPUT=OFF** specification for a Data Acquisition Processor model or expansion board type that does not support an unipolar analog output mode. Remove this option from the OUTPORT command line.

***** Error 2217: illegal SCHEDULING option - *mode***

An incorrect value was specified for the OPTIONS SCHEDULING mode. See the OPTIONS command in the *DAPL Manual* for information about scheduling mode options.

***** Error 2218: illegal BUFFERING option - *mode***

An incorrect value was specified for the OPTIONS BUFFERING mode. See the OPTIONS command in the *DAPL Manual* for information about buffering mode options.

***** Error 2219: scheduling quantum must be smaller than *number***

The quantum option must be within the range supported by your DAP hardware. See the HWDIF.HTM sheet for details about your particular DAP model.

***** Error 2220: scheduling quantum must be larger than *number***

The quantum option must be within the range supported by your DAP hardware. See the HWDIF.HTM sheet for details about your particular DAP model.

***** Error 2221: out of memory**

The command to define a new element or task cannot be completed because all memory was previously allocated for other purposes. Issue a STOP or RESET command to release unused memory resources, and try again.

***** Error 2225: auto cycle must be longer than holdoff interval**

On a TRIGGER command, the automatic **CYCLE** triggering feature is inconsistent with the **HOLDOFF** interval, so that it is not possible to trigger at the interval specified. Modify one of these two configuration parameters.

***** Error 2226: holdoff must be specified for deferred mode**

The **DEFERRED** mode of a software trigger requires the **HOLDOFF** property to determine when to assert delayed events. Specify a value for the **HOLDOFF** option.

***** Error 2227: property *name* unavailable or already defined**

For a software trigger definition, either a trigger property not compatible with the selected triggering mode was specified, or a redundant property specification attempts to override a value previously defined.

***** Error 2228: invalid trigger option - context**

An incorrect number was assigned to one of the optional parameters on a TRIGGERS command line. The `context` field in the error message provides additional information to identify the invalid specification.

***** Error 2246: invalid one-shot gating option - context**

When attempting to edit the GATE setting of a software trigger configured in MANUAL operating mode, only the keywords ARMED or DISARMED are allowed.

***** Error 2252: symbol name reserved or used, cannot erase**

An ERASE command is not able to remove the specified procedure, command or data element because the element is currently active, or because the element is a reserved part of the operating system. Elements used by a downloaded configuration are temporarily marked as reserved until the configuration is cleared by a RESET command.

***** Error 2272: MAXSIZE parameter is too small**

The storage size requested is too small for a user-defined pipe. Specify a larger value for the MAXSIZE parameter.

***** Error 2325: rescue time quantum is out of range**

When specifying the `RQUANTUM` option on an OPTIONS command, the value of the rescue time quantum was beyond a reasonable range. Only advanced applications with rigorous requirements for real-time response should change this option from the default value. After any adjustments, the system performance must be tested carefully.

***** Error 2326: rescue interval is out of range**

When specifying the `RINTERVAL` option on an OPTIONS command, the value of the time period between activation of rescue check operations was beyond a reasonable range. Only advanced applications with rigorous requirements for real-time response should change this option from the default value. After any adjustments, the system performance must be tested carefully.

***** Error 2342: invalid eventlog size number; must be in the range of number and number**

In an OPTIONS command, the `EVENTLOGSIZE` parameter was assigned a value that was negative or too large. Try again with a different value.

***** Error 2350: unable to convert scalar type to scalar type**

While parsing a DAPL data element, initialization expressions generally tolerate various number notations. However, if conversion to the storage data type of the element results in a numerical error, such as a loss of precision, this diagnosis results. Find another form of the initialization expression that avoids this problem.

***** Error 2355: CmdGroup does not support command CmdName**

A processing task specified in a processing configuration group is of the wrong type. Specify this processing task within a processing procedure group compatible with the command version.

***** Error 2363: expecting '=' after name**

The syntax of an OPTIONS system command requires values to be assigned using an "equal sign" notation, for example:

```
PROMPT=ON
```

The option name was recognized, but the character following it was unexpected. This is most likely a typographical error.

***** Error 2364: comma expected but found context**

When preparing to execute a system command that provides a list of named items to process, for example the STOP or EMPTY commands, the only things that should be present in the list are symbol names or separator commas. However, some other unidentified text was found. This is probably a typographical error.

***** Error 2370: buffer memory request exceeds number byte limit of target pipe"**

When defining a pipe having the `STATIC` attribute, the PIPES command specifies more than the maximum buffer size that the system can support. Modify the configuration command code to use a smaller buffer size and recompile the module.

Input configurations and output configurations

The errors in this section indicate problems with the IDEFINE command, ODEFINE command, or the sub-commands related

to input sampling or output updating configurations. Errors of this type should be corrected by modifying the input or output specifications in your DAPL configuration file.

Input configurations

*** Error 1040: illegal input pin identifier

An incorrect pin identifier is specified on a SET command.

*** Error 1041: sampling time is too small

The sampling time necessary to capture samples for all of the channels defined for your input sampling configuration is faster than your Data Acquisition Processor model can support. Or, if you have specified an explicit sampling interval with a TIME command, the value of this time interval is faster than your Data Acquisition Processor model can support. Use a longer time interval. See the HWDIF.HTM listing for details about the sampling time intervals your Data Acquisition Processor model can support.

*** Error 1060: illegal input clocking parameter - `mode`

An mode specified by the CLOCKING command must be either `INTERNAL` or `EXTERNAL`.

*** Error 1147: input procedures must have at least one input channel pipe

Input procedure configurations must define one or more channel pipes. The number of definitions must be consistent with the CHANNELS or GROUPS command.

*** Error 1148: maximum number of counter/timer channel pipes is exceeded

The number of counter/timer channel pipes specified in an input configuration is greater than the maximum supportable by the hardware devices.

*** Error 1149: a single counter/timer channel pipe is illegal

A counter/timer configuration is invalid. A counter/timer accessory board needs both a control signal channel and a data signal channel to operate, but one of these is missing, so data cannot be captured or read. See the manual for the counter/timer board for more information about configurations.

*** Error 1162: input burst mode can only be used with HTRIGGER and COUNT

To use *input burst mode*, you must use a HTRIGGER ONESHOT command to initiate the input burst with hardware triggering, and a COUNT command to specify when the input sampling burst is finished.

*** Error 1184: slave mode does not support input burst mode

If the timing source for the input procedure is the master Data Acquisition Processor in a multiple Data Acquisition Processor system, a Data Acquisition Processor in SLAVE mode cannot use the SAMPLE BURST mode. For the slave, sampling activity occurs whenever the master sends timing pulses, leaving the details of burst mode timing to the master. See the documentation for the SLAVE and SAMPLE commands in the *DAPL Manual* for additional information.

*** Error 1189: invalid configuration for fast input sampling - increase the TIME parameter

Some Data Acquisition Processor models have a "fast input sampling" feature that partially overlaps analog and digital port activity to get better throughput. The specified time interval is too short to allow the analog samples to be successfully captured, even with "fast sampling" features. You must either include more reading cycles for digital ports in your configuration, or increase the scan time interval. See the *Sampling* chapter in the *DAPL Manual* for more information about sampling configurations.

*** Error 1192: fast input sampling is not available with CLClocking and external clocks

When channel list clocking (default) and CLOCKING EXTERNAL are both used, fast sampling features are not available. In order to capture data from mixed analog and digital sources, the maximum rate is the same as if all input channels were analog. Increase the scan time and try again. See the HWDIF.HTM listing for more information about sampling rate limits for your hardware model.

*** Error 1195: illegal input buffer parameter - `context`

The BUFFERS command can accept only the keyword parameters `STATIC` or `DYNAMIC`. The `context` field of the error message shows what the command interpreter found on the command line.

*** Error 2224: all channels in the procedure must be specified

For some DAP models, all channels specified by the CHANNELS or GROUPS command must have corresponding SET command to define the properties of each channel. This is particularly the case for the xDAP family, for which the assigned input pins determine the number and timing of sampling operations. Your configuration is missing one or more of the required SET commands.

***** Error 2233: time is too small for counter/timer inputs**

A sampling rate for an input sampling configuration is within the capabilities of the Data Acquisition Processor but too fast for operating a counter/timer board. Use a longer sampling interval for the input sampling configuration. See the counter/timer hardware documentation for information about sampling rate constraints.

***** Error 2239: invalid number of channels or channel groups**

The number of channels specified within an input or output processing procedure is not within the range supported by the Data Acquisition Processor hardware. See the HWDIF.HTM sheet or the hardware manual for your DAP device for information about how many channels can be supported.

***** Error 2243: invalid internal clock specifier - context**

To use the counter/timer card's internal oscillator as a timing source, a SET command can accept an additional positional keyword ICLOCK after the CT pin specifier. Other notations are not allowed with CT pin specifiers.

***** Error 2245: invalid gain specifier**

On a SET command in an input sampling configuration, the optional range selection (gain) notation is unrecognizable or has an invalid value.

***** Error 2291: invalid VRANGE specification**

For a Data Acquisition Processor model that supports adjustable ranges for all channels using a VRANGE command, the voltage range specified by the VRANGE command is not one of the range setting supported by your Data Acquisition Processor hardware. For more information about input ranges, see the HWDIF.HTM listing.

***** Error 2292: GROUPS or CHANNELS command required**

The number of channels for an input sampling configuration must be specified by a GROUPS or CHANNELS command within the configuration. This command was missing.

***** Error 2298: invalid channel group stepping mode**

***** Error 2299: illegal channel group stepping mode specification**

Reserved for future hardware features.

***** Error 2386: scan time is out of range**

The time specified by the SCAN command in an input sampling procedure is outside of the range that your model of Data Acquisition Processor can support. If the number is too small, the hardware cannot go fast enough to obtain a sample value for every channel within the specified time. If the number is too large, the range of internal hardware counters is insufficient to support the specified scanning interval. You can't go faster than the hardware will support, but you can get the equivalent of longer time intervals by sampling faster than you need and discarding extra samples with processing.

***** Error 2387: time is not valid for the current scan**

If a TIME command is present in an input sampling configuration, and a SCAN interval is also defined there, the time interval on the TIME command must be sufficiently short that sampling operations can provide a value for each input channel within the total interval specified by SCAN. Try reducing the length of the interval specified on the TIME command.

***** Error 2388: scan is not valid for the current time**

This problem can occur when an input sampling configuration is defined, or when the configuration is modified later with an EDIT command. Given the channels selected for sampling, and with the time interval between sampling events specified by a preceding TIME command, it is not possible to complete the sampling for every channel within the time allowed by the SCAN command. For the case of using an EDIT command, the TIME and SCAN intervals were previously consistent, but would become inconsistent because of the change. For the case of a SCAN command, try a longer SCAN interval, or specify more channels that can be simultaneously sampled so that a shorter SCAN interval is possible.

***** Error 2389: scan must be equal to time*channels**

For some DAP models with a simpler channel architecture, the TIME and SCAN intervals cannot be adjusted independently. Adjust the time intervals on the SCAN and TIME commands to satisfy the constraint described in the error message text.

***** Error 2390: model does not support input configuration command name**

The input sampling configuration has a hardware configuration command that is not supported by the hardware on your DAP model. Remove the command referenced in the error message, or modify the command in a manner so that it no longer refers to unavailable hardware features.

***** Error 2391: scan command is not allowed after time command**

The DAPL system must know the channel configuration and the SCAN time interval before it can validate and configure

a TIME command. Place the TIME command after the SCAN command.

***** Error 2392: set command is not allowed after scan command**

The DAPL system must have full information about which channels are used before it can determine which sampling operations can be performed simultaneously, and how many sampling operations are needed to capture a sample for every input channel. A SET command for configuring an input channel was located after the SCAN command was processed. Either the SET command was extraneous and needs to be removed, or the SET command needs to be moved somewhere before the SCAN command in the DAPL configuration script.

***** Error 2393: scan or time is not valid for the new channel configuration**

If an EDIT command tries to modify a channel configuration so that more sampling operations are required to obtain a sampled value for every channel during the SCAN interval, and this number of sampling operations cannot be completed in the available SCAN interval, the change is invalid and is not applied. Reevaluate the proposed configuration change so that your configuration remains within feasible limits.

***** Error 2394: aggregate sampling rate exceeds the `number` samples per second hardware limit**

This problem occurs when the aggregate sampling rate of an input configuration is too high for the hardware though the SCAN and TIME values are acceptable. Reevaluate the SCAN and TIME values to reduce the rate to within the limit.

Output configurations

***** Error 1049: too many output channel pipes**

An output procedure attempted to define more than the maximum number of output channel pipes supportable by the Data Acquisition Processor model. If you need more channels, investigate other alternatives for expansion board accessories, or other DAP models.

***** Error 1055: illegal output pin specification**

A pin identifier on a SET command in an output procedure configuration is not supported by the Data Acquisition Processor model. This could be typographical, or possible the DAPL configuration file was intended for a different DAP model with support for other kinds of hardware.

***** Error 1057: update time is too small**

The output update time interval is smaller than the digital to analog output converters can support on this Data Acquisition Processor model. You must specify a longer update time interval on the TIME or SCAN command.

***** Error 1068: illegal output clocking parameter - `context`**

The clocking option specified by the CLOCKING command must be either `INTERNAL` or `EXTERNAL`.

***** Error 1069: illegal output hardware trigger parameter - `context`**

An output hardware trigger mode specified on an HTRIGGER command must be `GATED`, `ONESHOT`, or `OFF`.

***** Error 1091: number of wait samples is too large**

The OUTPUTWAIT count in an output procedure is larger than available memory size can support. This is probably a typographical error.

***** Error 1139: CYCLE count is out of range**

The CYCLE count in an output procedure must be a nonnegative integer and must not exceed the available system memory.

***** Error 1154: number of wait samples is too small**

The OUTPUTWAIT count in an output procedure is too small for this hardware configuration. Increase it and try again.

***** Error 1157: illegal UPDATE parameter - `mode`**

The mode for the UPDATE command must be either `BURST` or `CONTINUOUS`.

***** Error 1160: output count is less than cycle size**

If both COUNT and CYCLE are present in an output procedure, COUNT must be greater than or equal to CYCLE multiplied by the number of channel pipes.

***** Error 1161: count parameter is less than the number of wait samples**

The COUNT command and the OUTPUTWAIT command for an output updating procedure are inconsistent. Either increase the number of samples on the COUNT command or decrease the number of samples on the OUTPUTWAIT

command and try again. An output updating configuration would never produce any output updates if the COUNT command terminated the collection of output data before a sufficient number of samples became available for updating to start.

***** Error 1170: output procedures must have at least one output channel pipe**

The CHANNELS command will not accept 0 or a negative count for the number of output channels.

***** Error 1180: outputwait must be a multiple of the number of channel pipes**

The OUTPUTWAIT parameter in an output procedure must be an integer multiple of the number of output channel pipes.

***** Error 1185: slave mode does not support output burst mode**

If the timing for an output procedure originates from the master Data Acquisition Processor in a multiple Data Acquisition Processor system, a Data Acquisition Processor in SLAVE mode cannot use the UPDATE BURST mode for output timing. For the slave, updating activity occurs whenever the master sends timing pulses, leaving all details of burst mode timing to the master. See the documentation for the SLAVE and UPDATE commands in the *DAPL Manual* for additional information.

***** Error 1190: all the output channels in the procedure must be specified**

The output procedure must define with a SET command every channel specified by the CHANNELS command.

***** Error 2311: output hardware triggering is not available**

Your Data Acquisition Processor model does not have the hardware features to support the hardware triggering configured by a HTRIGGER command.

***** Error 2366: COUNT must be specified to use output burst mode with CYCLE**

When a CYCLE command specifies repeated output patterns in an output procedure, this pattern will continue indefinitely unless a COUNT command is used to stop it. Otherwise, once started, burst activity would continue indefinitely.

***** Error 2367: output hardware is not present on this model**

Either there was a request to the DAPL system "`DISPLAY OUTPORTS`", or an HTRIGGER command in an output processing configuration, but your particular Data Acquisition Processor does not have the necessary output hardware ports to support this command. It is possible that a configuration not intended for your particular DAP model was used.

***** Error 2368: output burst cycle mode can only be used with HTRIGGER and COUNT**

To use *output burst mode*, you must use a HTRIGGER ONESHOT command to initiate the output updating burst with hardware triggering, and a COUNT command to specify when the output updating burst is finished.

Both input and output configurations

***** Error 1033: channel pipe list or vector must end with ')' - context**

While parsing a channel list notation in a SET command for an input or output procedure configuration, the DAPL system reached the end of the command line before it reached a closing parenthesis to terminate the channel list. This is probably a typographical error.

***** Error 1035: time is too large**

The sampling scan time or updating time specified is beyond the range supportable by the Data Acquisition Processor model. See more information about the SCAN and TIME commands in the *DAPL Manual*.

***** Error 1142: simultaneous input and output exceeds maximum rate**

Input sampling or output updating rate exceeds the maximum rate allowed when both input and output procedures are active.

***** Error 1159: count must be a multiple of the number of channel pipes**

The COUNT parameter must be an integer multiple of the number of channel pipes. Both input and output procedures can terminate their scans only at the end of channel lists (except in the case of overflow or underflow conditions).

***** Error 1193: illegal CLCLOCKING parameter - mode**

An invalid mode is specified on the CLCLOCKING command line in an input or output configuration. The only valid parameters are ON or OFF.

***** Error 2250: invalid hardware trigger option - context**

The HTRIGGER command in an input sampling or output updating configuration can accept only the options:

- GATED
- ONESHOT
- OFF

***** Error 2345: a CHANNELS command is required**

To validate the input or output configuration, the command line processing must know in advance how many channels to expect. Include a CHANNELS command near the top of your input sampling and output updating procedure.

***** Error 2374: channel list does not support duplicate channels**

When using a channel list notation, a channel number can appear at most once in the list. For example, the following is not allowed:

```
IPIPES(0,1,1,1,5)
```

To make copies of a data stream, use a processing task.

Processing task definitions

These messages indicate error conditions caught as processing task definitions are interpreted.

***** Error 1006: illegal parenthesis nesting**

When defining a DAPL expression task in a processing procedure, the command line does not have exactly one closing parenthesis for each opening parenthesis. A parenthesis might be missing, or an extra parenthesis might be present. Correct the command notation and try running your configuration again. Be careful, incorrectly paired parentheses can result in unexpected differences in your results.

***** Error 1010: expression is too complex**

The DAPL expression contains too many operators or too many levels of nested parentheses. The limit of expression nesting is 10 levels. You should be able to perform an algebraic simplification of your expression to reduce some of the nesting levels. Or consider breaking the computations into two or more DAPL expression tasks.

***** Error 1029: illegal decimal point specification - context**

In a FORMAT command, the specifier for printing a decimal point is negative or out of range.

***** Error 1038: input channel pipe number is out of range**

Input channel pipe numbers must be from 0 to $n-1$, where n is the number of channel pipes established by the CHANNELS or GROUPS command in the input procedure.

***** Error 1046: expecting '=' after pipe name**

In a processing procedure, a task definition begins either with the name of a command that defines a task, or the name of a destination element for a DAPL expression. If a data element name is placed where a command name was intended, or if a data element name is correctly specified but the *equal sign* to follow it is missing, this error results.

***** Error 1054: output channel pipe number is out of range**

Output channel pipe numbers must be between 0 and $n-1$, where "n" is the number of channel pipes established by the CHANNELS command in the output procedure.

***** Error 1199: cannot have multiple output channel pipes in one task**

To avoid a possible deadlock condition, a task can write to only one output channel pipe. When a single task computes more than one output data stream, the streams can be merged and written in one operation using an output channel pipe notation with a channel list. See the *DAPL Manual* for more information about output channel list notations.

***** Error 1214: CmdName - parameter number - role should not be a type**

A parameter in a parameter list for a task set up by a CmdName task has the wrong type. This message occurs at the time of parsing a task definition command as a DAPL processing configuration is downloaded. The data types of the task parameters are compared to the internal specification for the parameter types the command can accept, prior to other processing. This *compile-time* error diagnosis is not available with custom commands that use DAPL 2000 programming conventions.

***** Error 2214: channel numbers in a channel list must be in ascending order**

When defining a processing task that delivers multiple-channel data to an output procedure, the channel list notation for the output channel pipe specifies channel numbers that are out of order. The output processing must send the data out in strict ascending sequence. Reorganize the terms in the channel list.

***** Error 2266: invalid left-side term for DAPL expression**

A DAPL expression specifies a target element that cannot accept the computed results, for example a constant or input communication pipe.

***** Error 2267: bitwise operation with floating point operand**

In a DAPL expression task definition, bitwise operations such as shift and or logical OR cannot be applied to floating point data. Bit values in floating point numbers are relatively hard to determine because of numerical rounding effects. If the operation is intentional, it might be possible to do it by converting the floating point values to integer values in a pipe, then use a separate DAPL expression to operate upon the bits of the intermediate values. Otherwise, you must use custom command programming.

***** Error 2270: cannot read from output com or channel pipe *name***

In a DAPL expression task definition, one of the terms specified as a data source is an output communications pipe, from which data can not be received. Most likely, the wrong pipe name was selected.

***** Error 2293: specified FORMAT line exceeds *number* character limit**

The FORMAT command allows a limited output line size. If you need to format more text information, try adjusting the field widths using field width notations, or use the slash notation to split the displayed data into multiple lines with linefeed separators. See the FORMAT command description in the *DAPL Manual* for more information about the special formatting notations.

***** Error 2327: task execution priority is out of range**

DAPL processing tasks run at a limited number of priority levels, each with tasks having equal opportunities for scheduling within that priority level. See the PRIORITY command in the *DAPL Manual* for information about selecting the appropriate priority for a processing procedure.

***** Error 2338: parsing *command* specification failed - *context***

While the DAPL system was registering the custom command code from a downloaded module, the listed command was found to have an invalid parameter specifier text. This is most likely a typographical error, but it could also mean an incorrectly structured specification. Correct the parameter type specification, and recompile the custom command module. You should never see this error for the commands provided with the DAPL system; if you do, please report the problem to Microstar Laboratories technical support.

***** Error 2354: undefined symbol name or keyword - *name***

Reserved for diagnosing symbolic cross reference errors in future versions of the DAPL system.

***** Error 2373: too many channel list vector elements**

When the DAPL system analyzed a reference to an input or an output channel pipe, it detected that the list of channel numbers and channel number ranges expands into more channels than the Data Acquisition Processor supports. This is probably a coding error. Check for a typing error, duplications, etc., in the channel pipe notation.

***** Error 2379: input/output stream of type *stream type* is not supported**

An error was detected when processing a data type specification for a parameter list. Reserved for future system use.

***** Error 2380: hardware associated with input/output stream of type *stream type* is not supported**

An input channel pipe or and output channel pipe was specified as a parameter in a task definition, but your particular DAP model does not support the hardware devices for this type of pipe. The *stream type* shown in the error message says whether the reference is to an *IPIPE* or an *OPIPE* stream. This could be a typographical error. Possibly, a configuration developed on one DAP model was used on another DAP model that does not have the same hardware features.

Configuration warnings

These warnings indicate unusual conditions that could cause your configuration to produce unexpected run-time results. Check the reason for the warning, and if there is a problem, make appropriate corrections to the configuration as necessary before running it again.

***** Warning 1501: time is being rounded down to *number* uS**

The time interval value specified on a TIME command is not an exact multiple of the time resolution interval supported by your Data Acquisition Processor model. To force it to be an exact multiple, the DAPL system adjusted the value. To avoid this message, check the time resolution for your particular DAP model in the HWDIF.HTM listing, and force the time value on your time command to be an integer multiple of that resolution value.

***** Warning 1504: more than one input procedure**

More than one input procedure exists when a START command is invoked without parameters. Your DAP model is restricted so that it cannot run all of them. The system will start as many as it can; typically, it starts the first one that it finds. Specifying only one input procedure in your configuration, or explicitly starting only an allowable number of input procedures using a START command, can avoid this message.

***** Warning 1505: more than one output procedure**

More than one output procedure exists when a START command is issued without parameters. Only one of the output procedures can start.

***** Warning 1532: maximum number of counter/timer channel pipes is exceeded**

Too many channel pipes are configured for using a counter/timer accessory card. Check the hardware manual for the timer/counter board for information about configuring the signal channels.

***** Warning 1533: a single counter/timer channel pipe is illegal**

To operate a counter/timer accessory board successfully, it is necessary to configure one input channel to connect to the control signal line, and one input channel to connect to the data transfer port. The configuration is missing one of these two channels. The configuration will run, but no useful information will be captured from the counter/timer board.

***** Warning 1535: counter/timer not supported in SLAVE mode**

Data Acquisition Processors operating in SLAVE mode cannot access timer/counter accessories. The timing signals to drive the hardware are only produced by the DAP configured as the MASTER. You must reconfigure your hardware devices appropriately.

***** Warning 1537: option value is not supported by this model**

This message can occur when the OPTIONS command is used to specify configuration parameter for hardware devices not supported by the Data Acquisition Processor model. Remove the extraneous OPTIONS command specifications.

***** Warning 1538: redundant or conflicting specification**

In an input sampling or output updating procedure, one of the configuration options appears more than once or overrides a previous option. For example, this message can occur if a CHANNELS and a GROUPS command are both used, or if two VRANGE commands are present. One of the redundant configuration commands should be removed.

***** Warning 1541: scan is being rounded down to **number****

The time interval specified on the SCAN command in an input processing procedure was not an exact integer multiple of the internal digital timer resolution. The time interval was reduced to the first allowable interval value less than the specified one. This might not be the best choice for your particular application. It is recommended that you review the selection and adjust your configuration either to match the DAPL system's correction, or to replace it with a more suitable choice that does not produce this warning.

***** Warning 1542: time is being adjusted to **number****

For input sampling configurations where channel list timing has been specified using a TIME command without a SCAN command, the value specified on the TIME command does not match the actual time interval between sampling events. This is not unusual for DAPL 3000 configurations using legacy DAPL 2000 notations. For example, suppose that a TIME command for 8 channels specifies 0.25 microseconds between sampling events. This specification is equivalent to a SCAN time interval of 2.0 microseconds for the 8 channels. After the DAPL system takes into account that all 8 channels are sampled simultaneously by the hardware, the actual time interval between sampling events is 2.0 microseconds, not 0.25 microseconds as originally specified. This is not an error, but it might affect what you need to do when analyzing the measured results.

Start-up and runtime

These messages indicate processing task errors and inconsistencies that do not become apparent until tasks begin to execute. Some of these problems occur when the task attempts to establish connections to other tasks for transfer of data. Custom commands that are unable to resolve and validate task parameters can sometimes produce these messages. Run-time errors cause premature termination of running tasks.

***** Error 1158: one or more procedures still are active**

There was an attempt to perform an operation on a pipe, but this operation cannot be performed because the pipe is reserved for use by a running task. For example: an application requests a **Purge** operation to remove leftover data from a pipe; however, the request cannot be granted because a processing task is active and writing data to that pipe. Issue a STOP command to terminate the other tasks, and then try again to perform the failed operation.

***** Error 1206: *CmdName* - too many tasks writing to a pipe**

Multiple processing tasks are starting to run and attempting to write data to the same pipe. In the case of the output channel pipe, only one task can place data into the output channel pipe. Usually this error occurs because of an incorrect processing configuration, but it can also occur if processing procedures are started without first using the STOP command to end previous processing.

***** Error 1207: *CmdName* - cannot read from an output COM pipe**

A processing procedure is attempting to open a pipe to read data, but the pipe is an output communication pipe and cannot provide any data. Most likely, a task parameter is incorrectly specified.

***** Error 1208: *CmdName* - cannot write to an input COM pipe**

A processing procedure is attempting to open a pipe to write data, but the pipe is an input communication pipe and cannot accept any output data. Most likely, a task parameter is incorrectly specified.

***** Error 1209: *CmdName* - too many tasks being signaled**

This somewhat obscure message arises when a task in a processing configuration is prepared for execution as a reader task for trigger events, but that trigger is already used by other running tasks. All reader tasks for one software trigger must be started in the same start group.

***** Error 1210: *CmdName* - too many tasks asserting a trigger**

When starting a processing configuration, the DAPL system detected that multiple tasks were preparing to write events to the same software trigger. Most likely, the processing configuration is incorrectly structured.

***** Error 1211: *CmdName* - channel number out of range**

During task initialization, the system determined that a task was trying to access an input channel pipe that is not within the range defined by the current input procedure. Check the ranges of channel pipe numbers in processing task parameter lists, and verify consistency with the input sampling procedure.

***** Error 1215: *CmdName* - too few parameters**

A task determined that the wrong number of parameters were supplied. Something is probably missing; add the additional task parameter to your configuration.

***** Error 1216: *CmdName* - too many parameters**

A processing task determined that the wrong number of parameters were supplied in the task parameter list. The parameter list in the task definition is most likely incorrectly specified.

***** Error 1217: *CmdName* - parameter error**

A processing task found an error related to an unusual restriction on one of its parameters. Commands provided by the DAPL system should not issue this error without additional warnings about the special nature of the problem; look for these in the error log. Custom commands might not provide any additional information.

***** Error 1218: *CmdName* - stack overflow error**

A custom task has insufficient stack space to continue executing. Verify that the task is not pushing data onto the processor stack without releasing it, and verify that the stack size is sufficient to support task operation. Commands provided by the DAPL system always work with fixed stack space and will never produce this message. Custom commands doing certain kinds of recursive processing could get into trouble. See the advanced information from the *Developer's Toolkit for DAPL* about stack size adjustment if this is critical to the application.

***** Error 1221: *CmdName* - out of memory**

All memory is used and a request to allocate more memory cannot be granted. Task execution is terminated. Issue a STOP command before running the configuration again. This error is somewhat different from an ordinary *memory overflow* warning, because it means that the processing cannot continue, so some values buffered in memory might fail to be processed. Memory resources are more likely to be in conflict when large numbers of samples are buffered.

***** Error 1223: *CmdName* - cannot write to an input channel pipe**

A processing procedure is attempting to open an input sampling pipe for writing data. Input channel pipes receive data from digital or analog-to-digital input ports; data cannot be written to these pipes. Either a task parameter is incorrectly specified, or an unfinished custom command under test requested the wrong kind of connection.

***** Error 1224: *CmdName* - cannot read from an output channel pipe**

A processing procedure is attempting to open an output channel pipe for reading data. Output channel pipes transmit data to digital or digital-to-analog output ports; data cannot be read from these pipes. Either a task parameter is incorrectly specified, or an unfinished custom command under test requested the wrong kind of connection.

***** Error 1225: *CmdName* - tasks in more than one procedure are reading from a pipe**

Processing tasks in two or more different processing procedures are attempting to read from the same pipe source, but these processing procedures were in different "start groups," not started by the same START command. All tasks reading from the same pipe must be started at the same time.

***** Error 1230: `CmdName` - this service is not available**

There was an attempt to do an operation other than a `GET`, `PUT`, or `NUM` operation on a system command text pipe. Other pipe operations such as `OPEN`, `CLOSE`, block `GET`, block `PUT`, `REM` and `PURGE` are not allowed on system command pipes. This error can result when the predefined `SysIn` pipes is incorrectly specified as a task parameter, or when application programs treat number streams and text pipes identically.

***** Error 1236: `CmdName` - parameter `number` - `message`**

A task found a configuration error in the indicated parameter position. The supplemental message will provide more information about the kind of detected problem. Typical messages are:

- parameter has the wrong type
- value is out of range
- missing parameter

***** Error 1237: `CmdName` - this task is not compatible with the operating system version**

An attempt was made to execute a custom command task that is not supported by the version of DAPL installed on the Data Acquisition Processor. Call Microstar Laboratories Customer Support and ask for information about recompiling the command code using a newer version of the Developer's Toolkit for DAPL.

***** Error 1238: `CmdName` - invalid parameter in calls to toolkit library functions**

A custom command queried the type of a system element associated with one of the task parameters, using the `param_type` function. However, the index passed to this function did not correspond to any of the parameter positions. This only occurs when there is a coding error in the custom command code. Correct this error and recompile the command module.

***** Error 1250: `CmdName` - invalid repeating parameter type list**

A custom command task that uses a *repeating parameter pattern* for verifying task parameters (e.g. a task accepts a variable number of input pipes) detected an incorrectly structured type information list. This most often occurs when the `T_LIST_END` code for marking the end of the repeated pattern is missing.

***** Error 1252: `CmdName` - task startup failed `reason`**

There was a configuration inconsistency between dependent downloaded modules that prevented a task from being correctly started. The problem is usually due to missing or insufficient system resources. The "reason" text provides additional information about what the system was trying to do when the problem was detected. This error should only occur with custom command modules using advance resource sharing features. Some of the `reason` texts that might appear in the message are the following:

- could not open the owner module
- could not create private mapped module list
- could not create private memory space

***** Error 1253: `CmdName` - task terminated**

***** Error 1254: `CmdName` - task `ID number` terminated abnormally**

The DAPL system task scheduler stopped task execution because an unexpected error condition. This error typically occurs after some other problem was detected, such as a caught exception after which the task cannot continue to run normally. This error typically occurs when running an unfinished custom command during test and development; the rest of the DAPL system is probably undamaged, but this is a serious problem that requires immediate attention.

***** Error 2259: `command name` - memory page fault**

While a running task was attempting to access a block of memory, it pointed to an address range that was outside of that block. This kind of fault typically occurs because of incorrect memory allocations, index range errors, or pointer errors in custom command code. One of the most common reasons is using a pointer value before initializing it to point to a valid memory location. This kind of error should never occur in processing commands provided with the DAPL system — if it does, please report the problem to Microstar Laboratories technical support.

***** Error 2310: invalid pipe open mode**

A custom command called a `pipe_open` function from the Developer's Toolkit for DAPL. The *opening mode* parameter is supposed to be one of the predefined enumeration codes to request either reading or writing. The value of this parameter was not recognized. Check the command C++ code to see why an invalid opening mode was specified, and recompile the command.

***** Error 2317: output buffer is too small; need at least `number` bytes of space**

***** Error 2318: access of buffer is out of range**

These are reserved for diagnosing problems that occur when using pipe functions in custom commands, for future versions of the DAPL system.

***** Error 2319: `element type handle not opened`**

In a custom command program, there was an attempt to access an element through its handle object, but the association was not successfully initialized by an `open` operation for that handle. The `element type` message provides additional details about what kind of object handle is affected: `pipe`, `trigger`, etc.

***** Error 2320: `MaxCount must be non-zero and a multiple of Multiple number`**

***** Error 2321: `MinCount must be a multiple of Multiple number`**

***** Error 2322: `Multiple must be non-zero, smaller than pipe size and a factor of both MaxCount and MinCount`**

***** Error 2323: `Get or Put count must be a multiple of Multiple number`**

In a custom command, functions for reconfiguring a pipe dynamically detected an error condition. These are reserved for future versions of the DAPL system.

***** Error 2330: `handle is not valid for the operation`**

In a custom command program, an operation attempted to use an open and valid object handle, but the operation could not be performed because it was inconsistent with an operating mode established when the handle was opened. For example, a function to write data to a storage object is invalid if the object handle was opened for read-only access.

***** Error 2332: `DAP model does not support this function`**

In a programming interface, such as the DAPIO32 programming or the DTD custom command interface, a valid function is referenced, but the action could not be performed on your specific DAP model. Ordinarily, this error should occur, but it could happen if you do some unusual hardware-specific programming, and then use your custom command on a different and DAP model.

***** Error 2348: `requested pipe count is too large for the operation`**

A Developer's Toolkit for DAPL operation requested a pipe operation involving more samples than can be covered by a 32-bit count. Check in the custom command code that the number of samples always remains in a reasonable range.

***** Error 2359: `unable to map number bytes from address location - message`**

Some of the DAPL system pipe functions can present data to processing tasks as contiguous data blocks. But actual data locations may be distributed through physical memory, and features of the processor are used to adjust the page addressing to make the data appear contiguous. This process can fault if the system runs out of available memory during the memory re-mapping process, or if storage areas are corrupted because of severe errors in custom command programming. If there are no custom command tasks, or all custom commands are thoroughly tested, using RESET or ERASE to release system memory resources should correct this problem.

Run-time warnings

Warnings indicate unusual conditions that occur during the execution of a configuration. Some results might be unexpected. Check carefully if any warnings occur.

***** Warning 1509: `earliest saved options overwritten`**

When using an OPTIONS SAVE command to temporarily save system configuration options, all levels of the stack are full. To complete the operation, the earliest saved option is overwritten. This probably means an application error; the SAVE option is not consistently followed by a RESTORE option.

***** Warning 1510: `nothing to restore`**

An OPTIONS RESTORE command was issued but no OPTIONS SAVE command previously saved any options, so there is no action. This could be an application software error.

***** Warning 1530: `input channel pipe overflow at sample # number`**

All buffer memory has been filled by the active input procedure. See the *DAPL Manual* for more information about overflow and underflow conditions. The input sampling procedure is terminated, but samples already collected remain buffered in memory for processing.

***** Warning 1531: `output channel pipe underflow at sample # number`**

No data were available at the time when clocked output hardware was supposed to have data ready for an updating operation. The output updating procedure is terminated. This can be a normal and expected result for certain kinds of burst mode signal generation — the output updating is expected to stop after supply of data is cut off.

***** Warning 1534: `input hardware overflow at sample # number`**

The DAPL system was unable to respond to a hardware interrupt for servicing a buffering device quickly enough, and this broke the continuity of the sampling. The hardware sampling procedure is shut down, but processing of data samples already in memory can continue. The sample number indicates the sequence number of the last retained data sample, where samples are numbered starting with zero. This error should never occur unless a custom control task interferes with interrupt processing, leading to a timing fault. If this error occurs for any other reason, please call Microstar Laboratories Customer Support.

Custom commands, modules, and downloading

***** Error 1102: TYPE parameter is out of range**

***** Error 1103: custom command length must be even when reading a word com pipe**

***** Error 1114: invalid byte or word pipe - context**

***** Error 2209: command format is not compatible with the operating system version**

***** Error 2222: out of 16-bit custom command stack memory**

***** Error 2248: invalid command stack size**

***** Error 2249: invalid command code size**

An error was encountered when attempting to download a legacy 16-bit custom command binary file. 16-bit custom commands are obsolete in the DAPL 3000 system, and using them should be considered dangerous even if they appear to work correctly. Recompile the custom command using an updated version of the Developer's Toolkit for DAPL.

***** Error 1249: CmdName - out of 16-bit selectors; task terminated**

***** Error 2260: out of selectors**

A legacy 16-bit custom binary attempted to make too many requests to reserve dynamic memory, and the processor hardware did not have enough entries in its selector table for all of them. Recompile the custom command using an updated version of the Developer's Toolkit for DAPL. Memory allocations are not limited in this manner when using newer versions of the Developer's Toolkit for DAPL.

***** Error 2273: installing modname failed**

There is an unspecified structural error in the downloaded module. This usually indicates that the module binary file is corrupted. Check whether the custom command module was successfully built; verify that your working copy matches the binary module as originally built.

***** Error 2274: installing modname failed: insufficient memory**

The storage necessary to install the module in the DAPL system memory is unavailable. Verify that a STOP or RESET command has been used to free storage prior to loading the module. If possible, use smaller storage arrays within the module.

***** Error 2275: installing modname failed: bad module name**

The name assigned to a module must conform to the requirements of other DAPL system names. The name can contain only alphanumeric characters and underscores.

***** Error 2276: installing modname failed: bad binary image**

The binary file has invalid data. Check whether the custom command module was successfully built; verify that your working copy matches the binary module as originally built.

***** Error 2277: installing modname failed: missing dependency module modname**

This module cannot be loaded until another module providing required data or functional elements is loaded first.

***** Error 2278: installing modname failed: could not find import module export function name**

A resource expected to be imported from another installed module is not available from that module. This is usually a problem with incompatible versions.

***** Error 2280: installing modname failed: could not register one of its components**

An element provided by the module could not be recorded in the DAPL system, so that element is not accessible. This usually occurs because of a name conflict. For example, a variable with the same name already exists, or the programmer has assigned the same name to a module and a command defined within that module.

***** Error 2281: installing modname failed: incompatible with one of the system components**

When a downloaded module contains a validation function to be called by the DAPL system after module loading, and this validation function reports an error, this error message is issued. This is usually a problem with incompatible versions.

***** Error 2282: installing modname failed: incompatible with modname interface version number build version number**

When a downloaded module contains a version compatibility function to be called by the DAPL system after module loading, and this compatibility function reports an error, this error message is issued. This is usually a problem with incompatible versions.

***** Error 2284: invalid processing command property structure**

While a downloadable module is being loaded into the DAPL system, and the contents of the module are being registered, a `TCmdProperties` structure was found to have invalid data. This could be caused by inconsistent versions of the Developer's Toolkit for DAPL. Other possible reasons: a coding error in initializing one of the structure fields, or recording an invalid structure address in the callback function used by the DAPL system for module registration.

***** Error 2349: installing command `name` failed - `message`**

The system was able to load the command module code into memory, but while in the process of incorporating the specified command code into the DAPL system, it ran out of memory for setting up internal system objects. Most likely, there is nothing wrong with the command or the module code. Perform a RESET command, or use ERASE to remove as many unnecessary elements as possible, and try again to download the command module.

Interactive queries and monitoring

Error messages related to interactive queries result from the actions of software applications, working through the query functions of the DAPIO programming interface. Applications can check for error messages using the error queueing facilities, by monitoring message texts, or by inspecting the host system error message log. Correcting these errors typically requires modifying the application software.

Error messages related to STATISTICS monitoring are usually seen when running tests manually through some kind of command line monitor software, such as the *Interpreter* page of the DAPstudio application. Typing errors are common, but the immediate feedback display of the error message text makes problem correction easy.

***** Error 2253: temporary access conflict. `resource` could not be accessed**

Access to a shared system resource was requested by a host software application via the system `SysInfo` or `SysConfig` pipe, using DAPIO32 functions. If system resources are locked up so that the request cannot be completed, and timeout occurs, this error results. The `resource` information describes the resource that is the subject of the conflict, for example, the shared symbol table of all defined elements.

***** Error 2255: temporary access conflict. `element` could not be removed**

A host software application was unsuccessful when it attempted to remove a system element from the configuration using DAPIO32 functions. The element was being used by some other part of the system. For example, a communication pipe cannot be removed by the Data Acquisition control panel application if that pipe is part of an existing application configuration.

***** Error 2283: query buffer is too small; need at least `number` bytes of space**

A request did not provide for sufficient storage space to return all of the requested information.

***** Error 2285: missing query parameter(s)**

A request did not provide sufficient storage space to return all of the requested information about command properties.

***** Error 2286: symbol serial number `number` is undefined**

A request asked for information about a symbol that does not exist. Either the serial number was mis-copied, or some independent process removed the symbol before the query could be processed.

***** Error 2287: `module` does not own the `name` property**

A request requests property information about a symbol that does not have the specified property.

***** Error 2288: symbol query does not support the `name` property**

The information query feature is not able to locate the information requested. This message can occur if the property name in the request is misspelled.

***** Error 2289: illegal STATISTICS parameter - `name`**

A STATISTICS command line specifies an unrecognized command option. See the *DAPL Manual* for information about the options supported by the STATISTICS command.

***** Error 2290: STATISTICS collection is currently OFF**

A request to display the current STATISTICS report was disregarded because no statistics were available to display.

First, start the task statistics collection using the STATISTICS ON command line.

*** **Error 2343: invalid query/configure option - context**

*** **Error 2344: query/configure option name is required**

*** **Error 2346: value is not a valid value for the query/configure option name**

When using DAPIO32 interface functions to obtain information about a DAP or its configuration, a query option was unrecognized, missing, or contained invalid data. Check your DAPIO32 programming manual for information about available query options.

DAPL 3000 version 1.00 Error Message Summary

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