

Advanced Menu Routines

This document describes the following sub-routines that interface to the Advanced Menu handler within GX:

- Set Advanced Menu Header (AMHDR\$)
- Display Advanced Menu Page (AMPAG\$)
- Advanced Menu Accept (AMACC\$)
- Get Advanced Menu Sequence (AMSEQ\$)
- Clear Advanced Menu (AMCLR\$)
- Get Advanced Menu Colour Profile Index (AMCOL\$)

All the following routines are within the DF\$001 DLM in the P.\$DFDLM library. This library must be linked in explicitly using the LNK option in the \$SDL32 dialogue. For example:

```
$A3 COMPILATION OPTION:LNK
$A3 LNK> LOAD-MODULE ID:P.$DFDLM UNIT:$DP
$A3 LNK> LOAD-MODULE ID:<CR>
```

Note that an entry for the DLM library P.\$DFDLM must be present in the \$\$DLM Index File on \$\$D.

1. AMHDR\$ Set Advanced Menu Header

The Set Advanced Menu Header function supplies information that is applicable across the entire menu display.

1.1 Invocation

To set the Advanced Menu Header code:

```
CALL AMHDR$ USING M0
```

where M0 is a control block of the following format:

01	M0		* AMHDR\$ CONTROL BLOCK
02	MOVERS	PIC 9(4) COMP	* BLOCK VERSION NUMBER
		VALUE 2	* MUST CONTAIN 2, 3 OR 4
02	MOSTYLE	PIC 9(4) COMP	* MENU DISPLAY STYLE
02	MOFLAGS	PIC 9(4) COMP	* MENU FLAGS
02	MOFKEYS	PIC 9(2) COMP	* VALUE FUNCTION KEYS
02	MOTOUT	PIC 9(4) COMP	* ACCEPT TIMEOUT
02	MOTXTL	PIC 9(4) COMP	* LENGTH OF TITLE TEXT
02	MOTXTP	PIC PTR	* POINTER TO TITLE TEXT
02	MOHELP	PIC 9(2) COMP	* HELP AVAILABLE FLAG
			* 0 = NO HELP
			* 1 = HELP AVAILABLE
02	MOHLPFI	PIC X(2)	* HELP FILE NAME
02	MOHLPIN	PIC X(12)	* HELP INDEX
02	MOMFNAM	PIC X(8)	* MENU FILE NAME (NOTIONAL)
02	MOMFUNI	PIC X(3)	* MENU FILE UNIT (NOTIONAL)
02	MOIC1 OCCURS 26		* DEFAULT ICON
03	MOIC1T	PIC X	* LINE TYPE LETTER (A TO Z)
03	MOIC1I	PIC 9(4) COMP	* ICON INDEX FOR THAT LETTER
02	MOIC2 OCCURS 26		* DEFAULT SHORTCUT ICON
03	MOIC2T	PIC X	* LINE TYPE LETTER (A TO Z)
03	MOIC2I	PIC 9(4) COMP	* ICON INDEX FOR THAT LETTER
02	MOCPRO	PIC 9(2) COMP	* COLOUR PROFILE INDEX
			* (FOR VERSION 3, OR HIGHER)
02	MOBMAP	PIC X(3)	* BITMAP INDEX (001, 002 ETC.)
			* (FOR VERSION 4, OR HIGHER)

Note that the version 1 M0 block has the following format:

```

01      M0
02      MOVERS          PIC 9(4) COMP      * AMHDR$ CONTROL BLOCK
                                VALUE 1    * BLOCK VERSION NUMBER
                                * MUST CONTAIN 1
02      MOSTYLE        PIC 9(4) COMP      * MENU DISPLAY STYLE
02      MOFLAGS        PIC 9(4) COMP      * MENU FLAGS
02      MOFKEYS        PIC 9(2) COMP      * VALUE FUNCTION KEYS
02      MOTOUT         PIC 9(4) COMP      * ACCEPT TIMEOUT
02      MOTXTL         PIC 9(4) COMP      * LENGTH OF TITLE TEXT
02      MOTXTP         PIC PTR           * POINTER TO TITLE TEXT
    
```

1.2 STOP Codes and Exception Conditions

The following STOP codes may be generated by AMHDR\$:

STOP code	Description
16401	AMHDR\$ has been called on a non GX screen.
16402	The MOVERS field does not contain 2.
16405	A zero-terminated string is longer than 255 characters.
16410	The value of the MOSTYLE field is invalid.
16411	The value of the MOFLAGS field is invalid.

The following EXIT codes may be returned by AMHDR\$:

EXIT code	\$\$COND	Description
16401	1	An exception was returned by GX.
16402	2	Insufficient memory to allocate a work buffer.

1.3 Programming Notes

AMHDR\$ is only available when running on GX. Any attempt to use AMHDR\$ on a non-GX terminal will result in a STOP code. The version of GX must be V3.5c, or later. The version of GSM must be GSM SP-16, or later.

AMHDR\$ must be called before any of the other Advanced Menu Handler calls can be made.

The allowed values in the M0STYLE field are:

M0STYLE value	Menu style
0	Invalid
1	Expanded button menu style
2	Explorer tree style menu
3	Drop down style menu
4	Start button style menu
5, and higher	Reserved for future use

The M0FLAGS field is a collection of bit flags. The current bit values are valie:

M0FLAG bit mask	Meaning
#0001	Show logo bitmap
#0002	Enable custom Help Mode
#0004	Reserved for future use
#0008	Reserved for future use
#0010	Reserved for future use
#0020	Reserved for future use
#0040	Reserved for future use
#0080	Reserved for future use
#0100	Reserved for future use
#0200	Reserved for future use
#0400	Reserved for future use
#0800	Reserved for future use
#1000	Reserved for future use
#2000	Reserved for future use
#4000	Reserved for future use
#8000	Reserved for future use

The M0FKEYS field contains a number of bit flags:

M0KEYS bit mask	Function key enabled
#01	<F1>
#02	<F2> and <F3>
#04	<F4>
#08	SYSREQ
#10	Reserved for future use
#20	Reserved for future use
#40	Reserved for future use
#80	Reserved for future use

The M0TOUT field contains the time-out value in seconds. A value of 0 disables the menu time-out feature.

All icons are taken from the [menuicons] section of the GX.INI file.

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02	M1VERS	PIC 9(4) COMP	* BLOCK VERSION NUMBER
		VALUE 1	* MUST CONTAIN 1
02	M1FILE	PIC X(8)	* MENU FILE-ID FOR MENU PAGE
02	M1UNIT	PIC X(3)	* MENU UNIT-ID FOR MENU PAGE
02	M1SEQ	PIC 9(4) COMP	* MENU SEQUENCE NUMBER (ALWAYS 0)
02	M1PAGE	PIC 9(4) COMP	* MENU PAGE NUMBER
02	M1NLINS	PIC 9(2) COMP	* NUMBER OF MENU LINES
02	M1HSF	PIC 9(2) COMP	* HELP SUPPLIED FLAG
02	M1ISF	PIC 9(2) COMP	* ICONS SUPPLIED FLAG
02	M1LINE	OCCURS 18	
03	M1INDEX	PIC 9(2) COMP	* MENU LINE INDEX
03	M1TYPE	PIC X	* LINE TYPE "N" OR "F"
03	M1FIL2	PIC X(8)	* MENU FILE-ID FOR MENU-LINE
03	M1UNI2	PIC X(3)	* MENU UNIT-ID FOR MENU-LINE
03	M1TPAG	PIC 9(4) COMP	* TARGET MENU PAGE NUMBER ("N" LINE)
03	M1ATTR	PIC 9(2) COMP	* LINE ATTRIBUTE
			* #00 = NORMAL LINE
			* #01 = INACTIVE LINE
03	M1TXTL	PIC 9(4) COMP	* LENGTH OF MENU-LINE TEXT
03	M1TXTP	PIC PTR	* POINTER TO MENU TITLE-LINE TEXT
02	M1HELP	OCCURS 18	
03	M1HINX	PIC 9(2) COMP	* HELP MENU LINE INDEX
03	M1HFIL	PIC X(2)	* HELP FILE NAME
03	M1HTAG	PIC X(12)	* HELP TAGE
02	M1ICON	OCCURS 18	
03	M1IINX	PIC 9(2) COMP	* HELP MENU LINE INDEX
03	M1IID	PIC 9(4) COMP	* ICON IDE NUMBER

2.2 STOP Codes and Exception Conditions

The following STOP codes may be generated by AMPAG\$:

STOP code	Description
16401	AMPAG\$ has been called on a non GX screen.
16402	The M1VERS field does not contain 2.
16405	A zero-terminated string is longer than 255 characters.
16412	The M1NLINS field is outside the range 1 to 18.
16413	An M1INDEX field is outside the range 1 to 18.
16414	An M1TYPE field does not contain a value between "A" and "Z".
16415	An M1ATTR field is higher than 1.

The following EXIT codes may be returned by AMPAG\$:

EXIT code	\$\$COND	Description
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16401	1	An exception was returned by GX.
16402	2	Insufficient memory to allocate a work buffer.

2.3 Programming Notes

AMPAG\$ is only available when running on GX. Any attempt to use AMPAG\$ on a non-GX terminal will result in a STOP code. The version of GX must be V3.5c, or later. The version of GSM must be GSM SP-16, or later.

2.4 Examples

[EXAMPLE REQUIRED]

2.5 Copy-Books

The "M1" copy-book, in copy-library S.DF, expands the M1 control block.

2.6 See Also

AMHDR\$ Set Advanced Menu Header
 AMACC\$ Advanced Menu Accept
 AMSEQ\$ Get Advanced Menu Sequence
 AMCLR\$ Clear Advanced Menu
 AMCOL\$ Get Advanced Menu Colour Profile Index

3. AMACC\$ Accept Advanced Menu Selection

The Advanced Menu Handler Accept operation initiates an accept on the menu just displayed by a combination of the Advanced Menu Handler Header and Page functions.

3.1 Invocation

To accept a response from Advanced Menu Handler page code:

```
CALL AMACC$ USING M2 M3
```

where M2 is a control block of the following format:

```
01 M2 * AMACC$ CONTROL BLOCK
02 M2VERS PIC 9(4) COMP * BLOCK VERSION NUMBER
VALUE 2 * MUST CONTAIN 2
02 M2LINE PIC 9(2) COMP * SELECTED MENU LINE
* (RESERVED - MUST BE 0)
02 M2PAGE PIC 9(4) COMP * SELECTED MENU PAGE
* (RESERVED - MUST BE 0)
02 M2FLAGS PIC 9(4) COMP * FLAGS
* #0001 = RESERVED
* #0002 = RESERVED
* #0004 = RESERVED
* #0008 = ENABLE <ESC>
* #FFF0 = RESERVED BITS
02 M2FILE PIC X(8) * MENU FILE NAME
02 M2UNIT PIC X(3) * MENU FILE UNIT
```

and M3 is a control block of the following format:

```
01 M3 * AMACC$ CONTROL BLOCK
```

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```

02 M3VERS          PIC 9(4) COMP      * BLOCK VERSION NUMBER
                                VALUE 2 * MUST CONTAIN 2
02 M3CODE          PIC 9(4) COMP      * RETURNED EXCEPTION CODE
02 M3DCPR          PIC X(8)           * DIRECT COMMAND PROG NAME (IF M3CODE = 1)
02 M3DCUN          PIC X(3)           * DIRECT COMMAND UNIT (IF M3CODE = 1)
02 M3CMFI          PIC X(8)           * CURRENT MENU FILE
                                (IF M3CODE = 2,3,11 OR 14)
02 M3CMUN          PIC X(3)           * CURRENT MENU UNIT
                                (IF M3CODE = 2,3,11 OR 14)
02 M3RMNU          PIC 9(4) COMP      * RUN MENU NUMBER (IF M3CODE = 27)
02 M3RMLN          PIC 9(4) COMP      * RUN MENU LINE NUMBER (IF M3CODE = 27)
02 M3RMSQ          PIC 9(4) COMP      * RUN MENU SEQ. NUMBER (IF M3CODE = 27)
02 M3TYPE          PIC X              * MENU LINE TYPE (IF M3CODE = 903)
02 M3ATTR          PIC 9(2) COMP      * MENU ATTRIBUTE (IF M3CODE = 903)
02 M3ENTS          PIC 9(2) COMP      * NUMBER OF ENTRIES (IF M3CODE = 29)
02 M3SETS OCCURS 32 * RETURNED RESULT SETS
03 M3FILE          PIC X(8)           * MENU FILE NAME
03 M3UNIT          PIC X(3)           * MENU FILE UNIT
03 M3DID           PIC 9(4) COMP      * MENU PAGE NUMBER
03 M3INDEX         PIC 9(2) COMP      * MENU LINE INDEX

```

Note that the version 1 M2 block has the following format:

```

01 M2
02 M2VERS          PIC 9(4) COMP      * AMACC$ CONTROL BLOCK
                                VALUE 1 * BLOCK VERSION NUMBER
                                * MUST CONTAIN 1
02 M2CODE          PIC 9(4) COMP      * RETURNED EXCEPTION CODE
02 M2DCPR          PIC X(8)           * DIRECT COMMAND PROG NAME (IF M2CODE = 1)
02 M2UDCN          PIC X(3)           * DIRECT COMMAND UNIT (IF M2CODE = 1)
02 M2RMNU          PIC 9(4) COMP      * RUN MENU NUMBER (IF M2CODE = 27)
02 M2RMLN          PIC 9(4) COMP      * RUN MENU LINE NUMBER (IF M2CODE = 27)
02 M2RMSQ          PIC 9(4) COMP      * RUN MENU SEQ. NUMBER (IF M2CODE = 27)
02 M2ENTS          PIC 9(2) COMP      * NUMBER OF ENTRIES (IF M2CODE = 29)
02 M2SETS OCCURS 32 * RETURNED RESULT SETS
03 M2FILE          PIC X(8)           * MENU FILE NAME
03 M2UNIT          PIC X(3)           * MENU FILE UNIT
03 MDID            PIC 9(4) COMP      * MENU PAGE NUMBER
03 M2INDEX         PIC 9(2) COMP      * MENU LINE INDEX

```

3.2 STOP Codes and Exception Conditions

The following STOP codes may be generated by AMACC\$:

STOP code	Description
16401	AMACC\$ has been called on a non GX screen.
16402	The M2VERS field does not contain 2.
16403	The M3VERS field does not contain 2.

The following EXIT codes may be returned by AMACC\$:

EXIT code	\$\$COND	Description
-----------	----------	-------------

16401	1	An unexpected error was returned by GX.
16402	2	Insufficient memory to allocate a work buffer.
16403	3	GX has returned an invalid menu depth
16408	8	Hard error returned by GX (the detailed error code is available in \$\$CRES)

3.3 Programming Notes

AMACC\$ is only available when running on GX. Any attempt to use AMACC\$ on a non-GX terminal will result in a STOP code. The version of GX must be V3.5c, or later. The version of GSM must be GSM SP-16, or later.

The type of response is returned in M3CODE which will contain one of the following values:

Value in M3CODE	Response	Further M3 processing required?
1	A direct "command" has been specified.	M3DCPR contains the name of the direct command; M3DCUN contains the associated unit number.
2	<F2> has been keyed	None.
3	<F3> has been keyed	None.
11	<ESC> has been keyed	None.
12	<F4> has been keyed	None.
27	A Run Menu Item has been selected.	M3RMNU contains the Run Menu menu number; M3RMLI contains the Run Menu line number; M3RMSQ contains the Run Menu sequence number.
28	The Help option has been selected. This exception will only be returned if the #0002 bit of M0FLAG was set in the Menu Header call.	M3ENTS contains the number of elements in the M3SETS array; M3SETS contains details of the route to the selected menu line. M3ENTS may be 0 if Help was selected while not over a specific menu button; or if the Help toolbar option was selected.
29	A menu option has been selected.	M3ENTS contains the number of elements in the M3SETS array; M3SETS contains details of the route to the selected menu line.
900	The timeout period has expired.	None.
903	A special menu option has been	M3ENTS contains the number of

	selected. This exception is reserved for future use and should not normally occur.	elements in the M3SETS array; M3SETS contains details of the route to the selected menu line.
--	---	---

No other values will be returned in M3CODE.

If M3CODE contains 29 the last element in the M3SETS array contains details of the selected menu line. The previous entries in M3SETS effectively return the route taken through the menu structure to reach the selected menu line.

3.4 Examples

[EXAMPLE REQUIRED]

3.5 Copy-Books

The "M2" copy-book, in copy-library S.DF, expands the M2 control block. The "M3" copy-book, in copy-library S.DF, expands the M3 control block.

3.6 See Also

- AMPAG\$ Display Advanced Menu Page
- AMHDR\$ Set Advanced Menu Header
- AMSEQ\$ Get Advanced Menu Sequence
- AMCLR\$ Clear Advanced Menu
- AMCOL\$ Get Advanced Menu Colour Profile Index

4. AMSEQ\$ Get Advanced Menu Sequence Number

The Get Advanced Menu Handler Sequence operation returns the sequence number of the menu currently held by GX.

4.1 Invocation

To obtain the Sequence Number from the Advanced Menu Handler page code:

```
CALL AMSEQ$ USING M4
```

where M4 is a control block of the following format:

```

01    M4                                         * AMSEQ$ CONTROL BLOCK
   02   M4VERS           PIC 9(4) COMP         * BLOCK VERSION NUMBER
                          VALUE 2             * MUST CONTAIN 2
   02   M4FILE           PIC X(8)             * MENU FILE NAME
   02   M4UNIT           PIC X(3)             * MENU FILE UNIT
   02   M4SEQ            PIC 9(4) COMP         * MENU SEQUENCE RETURNED HERE

```

4.2 STOP Codes and Exception Conditions

The following STOP codes may be generated by AMSEQ\$:

STOP code	Description
16401	AMSEQ\$ has been called on a non GX screen.

16402	The M4VERS field does not contain 2.
-------	--------------------------------------

The following EXIT codes may be returned by AMSEQ\$:

EXIT code	\$\$COND	Description
16401	1	An unexpected error was returned by GX.

4.3 Programming Notes

AMSEQ\$ is only available when running on GX. Any attempt to use AMSEQ\$ on a non-GX terminal will result in a STOP code. The version of GX must be V3.5c, or later. The version of GSM must be GSM SP-16, or later.

4.4 Examples

[EXAMPLE REQUIRED]

4.5 Copy-Books

The "M4" copy-book, in copy-library S.DF, expands the M4 control block.

4.6 See Also

AMHDR\$ Set Advanced Menu Header
 AMPAG\$ Display Advanced Menu Page
 AMACC\$ Advanced Menu Accept
 AMCLR\$ Clear Advanced Menu
 AMCOL\$ Get Advanced Menu Colour Profile Index

5. AMCLR\$ Clear Advanced Menu

The Advanced Menu Handler Clear operation removes the menu structure from the internal tables held by GX. Note that the AMCLR\$ routine is not strictly and has been added for completeness only. GX automatically performs all the necessary house-keeping on its in-memory menu file structures.

5.1 Invocation

To clear an Advanced Menu from the GX tables code:

```
CALL AMCLR$
```

No parameters are required.

5.2 STOP Codes and Exception Conditions

The following STOP codes may be generated by AMCLR\$:

STOP code	Description
-----------	-------------

16401	AMCLR\$ has been called on a non GX screen.
-------	---

The following EXIT codes may be returned by AMCLR\$:

EXIT code	\$\$COND	Description
16401	1	An unexpected error was returned by GX.

5.3 Programming Notes

AMCLR\$ is only available when running on GX. Any attempt to use AMCLR\$ on a non-GX terminal will result in a STOP code. The version of GX must be V3.5c, or later. The version of GSM must be GSM SP-16, or later.

5.4 Examples

[EXAMPLE REQUIRED]

5.5 Copy-Books

None.

5.6 See Also

AMHDR\$ Set Advanced Menu Header
 AMPAG\$ Display Advanced Menu Page
 AMACC\$ Advanced Menu Accept
 AMSEQ\$ Get Advanced Menu Sequence
 AMCOL\$ Get Advanced Menu Colour Profile Index

6. AMCOL\$ Get Advanced Menu Colour Profile Index

The Get Advanced Menu Handler Colour Profile Index returns the Colour Profile Index of the menu currently held by GX.

6.1 Invocation

To obtain the Colour Profile Index from the Advanced Menu Handler page code:

```
CALL AMCOL$ USING M5
```

where M5 is a control block of the following format:

```
01 M5 * AMSEQ$ CONTROL BLOCK
02 M5VERS PIC 9(4) COMP * BLOCK VERSION NUMBER
VALUE 1 * MUST CONTAIN 1
02 M5FILE PIC X(8) * MENU FILE NAME
02 M5UNIT PIC X(3) * MENU FILE UNIT
02 M5CPRO PIC 9(2) COMP * COLOUR PROFILE INDEX RETURNED HERE
```

6.2 STOP Codes and Exception Conditions

The following STOP codes may be generated by AMCOL\$:

STOP code	Description
16401	AMCOL\$ has been called on a non GX screen.
16402	The M5VERS field does not contain 1.

The following EXIT codes may be returned by AMCOL\$:

EXIT code	\$\$COND	Description
16401	1	An unexpected error was returned by GX.

6.3 Programming Notes

AMCOL\$ is only available when running on GX. Any attempt to use AMCOL\$ on a non-GX terminal will result in a STOP code. The version of GX must be V3.5e, or later. The version of GSM must be GSM SP-16, or later.

6.4 Examples

[EXAMPLE REQUIRED]

6.5 Copy-Books

The "M5" copy-book, in copy-library S.DF, expands the M5 control block.

6.6 See Also

AMHDR\$ Set Advanced Menu Header
 AMPAG\$ Display Advanced Menu Page
 AMACC\$ Advanced Menu Accept
 AMCLR\$ Clear Advanced Menu
 AMSEQ\$ Advanced Menu Sequence