PGRUN.DLL Manual

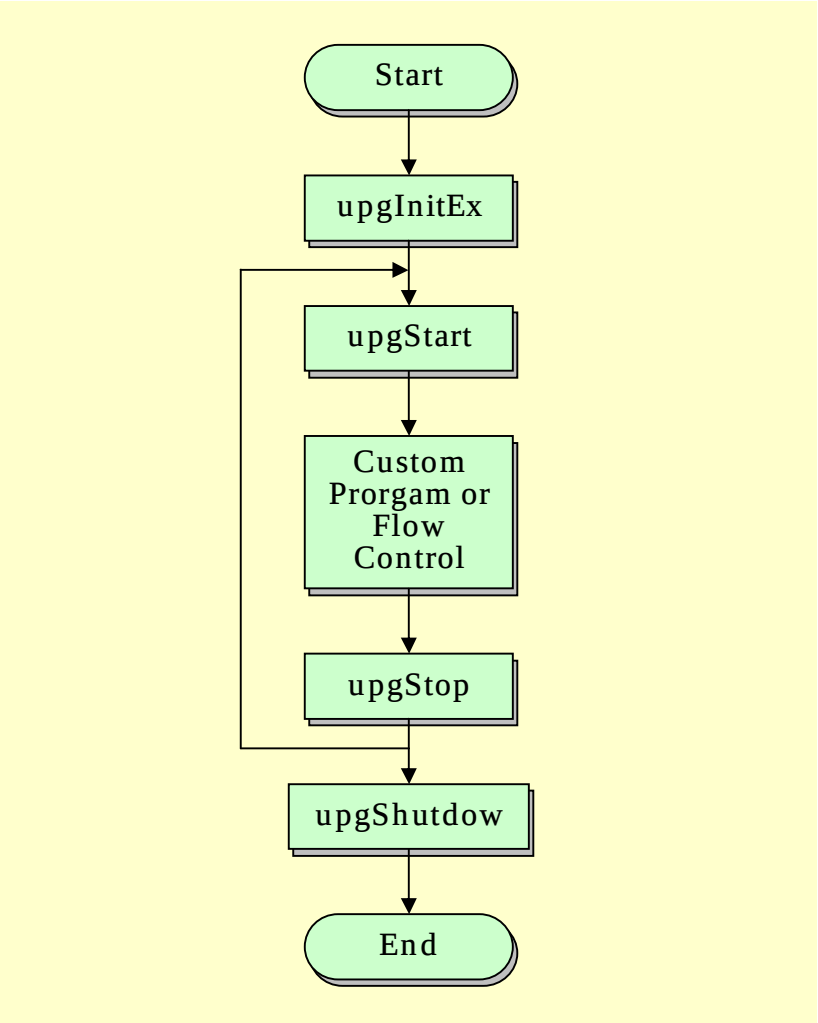
: What is PGRUN.DLL ?

PGRUN.DLL is a dynamic-link library for Windows OS. It provides several function calls to control the Acute Pattern Generator (PG1000 Series and PG2000 Series). You may use some language, such as Visual C or Visual Basic, to control Pattern Generator (PG) with PGRUN.DLL library. Even this library supports other languages which can link with DLL. We have some Visual C and Visual Basic sample codes in our web site. It will be added for other languages at a later date.

PGRUN.DLL include following function calls:

```
BOOL upgInitEx( int iModel, int iSlot );
int upgStart( LPCSTR szFileName, int iFileType,
              LPPGSI lppgsi );
BOOL upgStop();
BOOL upgKeyEvent();
unsigned int upgGetStatus();
BOOL upgShutdown();
```

: *Using Flow Chart*



: *Function Call Reference*

The PGRUN.DLL function call reference is C style. And this reference is valid for version 1.0.0.1 or later.

upgInitEx

Initialize the pattern generator.

```
BOOL upgInitEx(int iModel,int iSlot);
```

Parameter

iModel

PG model ID, it must be zero.

iSlot

USB slot or PCI slot or LPT slot, it must be zero,too.

Return values

If the function succeeds, the return value is nonzero (TRUE).

If the function fails, the return value is zero (FALSE).

Remarks

You must call the upgInitEx to initialize the PG before to use any other function calls of PGRUN.DLL. The upgInitEx is not only to Initializes the PG. It will check the PG hardware. You may call the upgInitEx just once.

upgStart

Download the waveform file to the PG and start output.

```
int upgStart(
  LPCSTR szFileName,   // file name
  int iFileType,       // file type
  LPPGSI lppgsi        // system information
);
```

Parameters:

szFileName

Pointer to a null terminated string that specifies the name of the object to open. This waveform file will be downloaded into the PG memory.

iFileType

Specifies the type of waveform file. This can be one of the following values.

```
0 : PGW
1 : PGV
```

The PGW file is binary format and the PGV file is text vector.

lppgsi

Reserved value; must be null.

Return values

If the function succeeds, the return value is zero. If the function fails, the return value can be one of the following.

```
1 : File not found.
2 : Reading Error.
3 : File type error or file type invalid.
4 : File format error. The file contain
    is not compatible whit file type
    assignment.
5 : File version error.
6 : Memory not enough. The memory size
    is in accordance with file size.
```

Remarks

The waveform file formats have two. No matter you use which one that must be generated and verified by PG Editor.

upgStop

Stop the waveform output.

```
BOOL upgStop();
```

Parameters:

If the function succeeds, the return value is nonzero (TRUE).

If the function fails, the return value is zero (FALSE).

Remarks

It is useless before you call the upgInitEx and upgStart

function call. When call the upStop function, the PG's output channels will be into high impedance state.

upgKeyEvent

Send a keyboard event into the PG.

```
BOOL upgKeEvent();
```

Return values

If the function succeeds, the return value is nonzero (TRUE). If the function fails, the return value is zero (FALSE).

Remarks

When you describe the Wait Key Event in the waveform, the PG will be paused at Wait Key Event appeared. The upgKeyEvent can send a Key Event to restart the PG. But the upgKeyEvent will be omitted when the PG not pause. Because the upgKeyEvent will send a pulse into the PG. The pulse with is system clock cycle. If the system clock is 1MHz (Mega-Hertz), the system clock cycle is 1us (micro-second). The upgKeyEvent will send this pulse, anyway. So the PG status is important. You can use upgGetstatus function call to get the PG's status. To decide what time to call the upgKeyEvent function call.

upgGetStatus

Get the current state of the PG.

```
unsigned int upgGetStatus();
```

Return values

The return value specifies the status of the event and wait, as follows:

Bit7~0 : PG Device ID Number

1 : PG1020

2 : PG1050

3 : PG2016

4 : PG2116

Bit10~8: Active Event

0 : Key Event

1 : Event0

2 : Event1

3 : Event0 # Event1

4 : Event2

5 : Event0 # Event2

6 : Event1 # Event2

7 : Event0 # Event1 # Event2

Bit11: Event Invert

0 : Invert

1 : Non-Invert

Bit12: Wait Event

0 : In wait state.

1 : Not in wait state.

Bit31~13: Reserve, will be zero.

Remarks

If you want to know the PG is waiting for Event 1, you just need to call the upgGetStatus function and when the return value is ***0x20***. Please note that the PG1000 series do not support to get ***Event Invert*** status.

upgShutdown

Shutdown the Pattern Generator.

```
BOOL upgShutdown();
```

Return values

If the function succeeds, the return value is nonzero (TRUE).

If the function fails, the return value is zero (FALSE).

Remarks

When you want to close the program, you must call the upgShutdown function to shutdown the PG and release the PGRUN's resources. If you do not call this function before close the program, the PG will be not stability. To restart the PC make the PG stable again.

: *Memo*