

# BPLUS (1): An Overview

v2.4 / 1 of 18 / 01 feb 99 / greg goebel / public domain / bp01\_ovr

\* This introductory chapter gives a broad description of BASIC Plus.

\* Contents:

```
[1] INTRODUCTION
[2] BASIC PLUS IN GENERAL
[3] BPLUS FOR RMB WORKSTATIONS & RMB-UX
[4] BPLUS ON HP BASIC FOR WINDOWS
```

## [1] INTRODUCTION

\* BASIC Plus (or "BPlus") is a binary that extends the operation of the traditional HP BASIC system such as RMB Workstation, RMB-UX, or HP BASIC for Windows by adding user-interface features such as dialogs and widgets. This document provides a comprehensive introduction to BPlus. It assumes a familiarity with the concepts of HP BASIC.

This is a very large document and includes illustrations and detailed examples. For those of you who find such a big document more than you have time to wade through, don't worry. It's structured so that you don't have to read the whole thing.

This first chapter provides an overview of the subject. The next few chapters provide an outline that will allow you to use the product intelligently, and the remainder of the chapters explain the individual widgets in detail. The appendix covers the HELPX system used on RMB Workstations and RMB-UX, but not on HP BASIC for Windows.

\* As with any document, it is impossible to know where your own work begins and that of your colleagues begins. Thanks to all who provided inputs to this document, and to those who allowed me to spend the time to work on it. As the author of this document, all mistakes and omissions are my own responsibility. For my readers who are not native English speakers, please forgive any use of slang terms that may be confusing.

## [2] BASIC PLUS IN GENERAL

\* BASIC Plus ("BPlus") provides a set of commands to help you create test-and-measurement user interfaces with a MOTIF windows-style appearance, using user-interface "dialogs" and "widgets".

In the RMB Workstation and RMB-UX environments, it also includes several applications, such as:

- A "Help" utility that you can invoke from HP BASIC to get information on any HP BASIC command.

- A "Help Compiler" to allow you to create your own help files for the help utility.
- A "Screen Builder" tool to help you lay out user interfaces.
- Other useful utilities such as a "Clock" and the "Notepad" editor.
- An "Applications Manager" that allows you to run these applications.

These additional features are not supported (or supported only to a very limited extent) in HP BASIC for Windows, since the MS Windows environment provides these facilities by default.

A dialog acts, from the program's point of view, as an INPUT statement with a TIMEOUT. From the user's point of view, it appears as a pop-up panel that goes away when the user makes a response. There are ten types of dialogs, from a simple dialog that displays a string to the user (who then clicks a button on the dialog panel to get rid of it) to a dialog that gives a file listing and asks for a file selection.

BPlus includes the following dialogs:

---

INFORMATION	Displays information, user responds with mouse button.
ERROR	Displays error message, user responds mouse button.
QUESTION	Displays question, user responds with mouse button.
WARNING	Displays warning, user responds mouse button.
NUMBER	Allows input of numeric data.
KEYPAD	Similar to NUMBER, but provides a calculator keypad.
STRING	Prompts user for text string.
COMBO	Allows entry by text input or from list.
LIST	Allows user to select from a list of items.
FILE	Allows user to select a file from a directory.

---

Widgets are much more flexible items that can be used to build sophisticated user interfaces. You can, for example, put together "virtual instruments" that include pushbuttons, sliders, text boxes, meters, graphics displays, and even pulldown menus, that can be controlled by a mouse.

BPlus includes the following widgets:

---

PANEL	Provides a "panel" to place other widgets.
SEPARATOR	Allows line to be drawn to separate regions on PANEL.
PUSHBUTTON	Provides "pushbutton" that can be clicked by mouse.
TOGGLEBUTTON	Similar to PUSHBUTTON.

---

RADIOBUTTON	Similar to PUSHBUTTON.
LABEL	Allows labels to be placed on user interface.
NUMBER	Allows input of numeric data.
KEYPAD	Similar to NUMBER, but provides a calculator keypad.
STRING	Allows string to be entered from user interface.
COMBO	Allows string entry or selection from a list of items.
LIST	Allows selection from a list of items.
FILE	Allows selection of disk volume, directory, or file.
BAR	Single-bar bargraph.
BARS	Multiple-bar bargraph.
METER	Meter.
LIMITS	Similar to a METER but the needle moves along a bar.
PRINTER	Allows output of multiple lines of text.
SLIDER	Allows numeric input with mouse using slider.
SCROLLBAR	Simplified version of SLIDER, used for scrolling.
XYGRAPH	Allows drawing of X-Y graphs.
STRIPCHART	Allows drawing of stripcharts.
HPGLVIEW	Allows viewing of HPGL files.
BITMAP	Allows display of .BMP or .XWD bitmap files.
PULLDOWN MENU	Used for building pulldown menu systems.
CASCADE MENU	Used for building lower-level pulldown menus.
MENU BUTTON	Provides menu selection in pulldown or cascade menus.
MENU TOGGLE	Similar to MENU BUTTON.
MENU SEPARATOR	Allows line to be drawn in menus as item separator.
SYSTEM	Used to build user interfaces & widget arrays.

---

\* All of the dialogs and widgets possess a large number of attribute settings that allow you to customize their operation. Core attributes, for example, includes the position of the object on the screen, the background color of the object, and the size of the object.

There are also attributes specific to a certain type of object. For example, the STRIPCHART widget has over thirty additional attributes, including number of channels displayed, color assigned to each channel, and control over the number of points displayed, number of points in the display buffer, and how the display is updated.

### [3] BPLUS FOR RMB WORKSTATIONS & RMB-UX

\* The facilities provided by BPlus for the RMB Workstation and RMB-UX environments provide extensions not otherwise available in those environments.

The online Help utility provides a reference for all HP BASIC keywords. The HP BASIC Condensed Reference Guide information for HP BASIC keywords is at your fingertips. You can access

information directly by keyword name or find the correct keyword using the keyword dictionary. In addition, you can copy simple examples from online help directly into the HP BASIC editor.

You can create custom help files for the Help utility by writing them with the Notepad utility -- as text files, using a simple HP text-formatting language called HELPX -- and then compiling them with the Help Compiler. You can also link a help file to a widget, allowing help to be displayed when you press the secondary mouse button on the widget.

The Screen Builder allows you to interactively build simple BPlus user interfaces.

Finally, the Applications Manager provides a Windows Program Manager-like user interface for using the BPlus tools. It allows you to run multiple BPlus applications, minimize them, or delete them.

\* For RMB Workstation and RMB-UX, BPlus is provided as a separate product. You must have at least 3 MB of RAM and HP BASIC 6.2 or above. BPlus is loaded as a binary and can be stored as a part of your system. Once you've loaded and stored BPlus, you don't need to worry about including a special set of subprograms in each of your programs.

BPlus is supported on all RMB Workstation and RMB-UX platforms (including the PC Measurement Coprocessor) that have a bitmapped display.

BPlus for RMB is best used with a color display. It also works well with grayscale monochrome displays, though items that have distinctive colors on a color display may in some cases be mapped to indistinguishable shades on a grayscale display. It will also work on single-plane monochrome displays, but the appearance is not particularly impressive and that configuration is not recommended.

## **[4] BPLUS ON HP BASIC FOR WINDOWS**

\* BASIC Plus is included by default with the 6.3 or later release of HP BASIC for Windows. It includes all dialogs and widgets, but of the apps and application environment provided under RMB Workstation and RMB-UX the only one supported on HBW is the Screen Builder. The other applications are redundant in the Windows environment.

[<>]