



Barcode/13

Chapter 0 / General information

What is Barcode/13?



Barcode/13 is a full software barcode scanner for palmOne **Treo600** and palmOne **Treo650**. Barcode/13 uses the Treo camera to scan UPC-A and EAN-13 barcodes and exports the decoded value to the system clipboard. Barcode/13 can be launched within any application, and the returned value can be retrieve from the clipboard to make use of it into the initial application.

Barcode/13 is a free alternative to expensive hardware solutions. Barcode/13 can't be seen as a business solution, but it is definitely the cheapest solution for non-business use, like cave, books, CDs or DVDs inventories.

What are UPC and EAN symbols?



April 3, 1973: the grocery industry formally establishes Universal Product Code as the standard bar code symbology for product marking, and UPC is the first bar code symbology widely adopted. UPC-A is based on a proposal submitted by George J. Laurer, IBM.



December 1976: following the acceptance of the original UPC specification, George J. Laurer adds a thirteenth digit to allow for "country identification" and make the UPC world wide, EAN-13 is born. EAN-13 is a superset of UPC-A: an UPC-A symbol is an EAN-13 symbol with the first number system digit set to 0, for example the UPC-A code "012345678905" is the same than EAN-13 code "0012345678905".

Mid 1960s: a system is developed out of two systems in use at the time, that of J Whitaker and Sons, Ltd in the UK and R.R. Bowker's system in the U.S. The 10-digit code British SBN system is adopted as ISBN in 1972. Prefix 978 can be combined to create EAN-13 barcodes with a new checksum. The third revision of ISBN requires codes to be 13-digit by 2007 to conform EAN-13 standard, prefix 979 is introduced.

Chapter 1 / Using Barcode/13

Launching Barcode/13 within an application



Press a long time the 5-way navigation center button to launch Barcode/13. Your Treo will return to the current application when you will leave Barcode/13. If you have confirmed a barcode, the decoded value of your barcode is available in your clipboard and can be copied within any application allowing clipboard manipulations.



Press a long time the side button to launch Barcode/13. Your Treo will return to the current application when you will leave Barcode/13. If you have confirmed a barcode, the decoded value of your barcode is available in your clipboard and can be copied within any application allowing clipboard manipulations.

Using Barcode/13 keys

cancel  capture

In preview mode, use the 5-way navigator left and right keys. Left key will leave Barcode/13 with the clipboard emptied, right key will scan the barcode in your target.

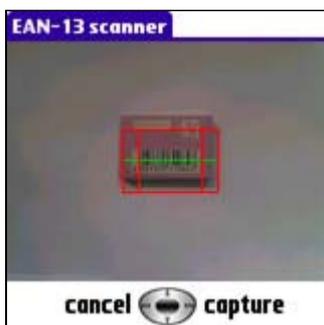
rescan  confirm

In decoder mode, use the 5-way navigator left and right keys. Left key will return to the preview mode to scan again a barcode, right key will leave Barcode/13 with your decoded barcode value in your system clipboard.



Barcode/13 recognizes EAN-13 and UPC-A subset of EAN-13 with a leading 0, but if you have some difficulties with a barcode you can tell Barcode/13 the first digit: if your barcode is a UPC-A barcode (US barcodes, 12 digits, **x xxxxx xxxxx x**) you can start the scanner pressing the "0" key. If your EAN-13 barcode (european barcodes, 13 digits, **x xxxxxx xxxxxx**) begins with a 3, you can press the "3" key, and so on. I recommend using this feature only if automatic recognition fails: usually, I press the digit keys only if Barcode/13 fails twice to read a barcode (this happens more frequently when scanning bottles, you should not need this for standard barcodes in normal lighting conditions). *Only for palmOne Treo650: space key can zoom/unzoom, but you should use this only with very small barcodes.*

Scanning a barcode properly



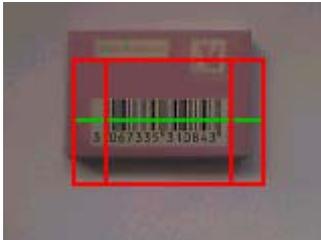
Barcode/13 works on palmOne Treo600 and palmOne Treo650, however palmOne Treo600 has a camera measuring the brightness and producing very saturated pictures: due to this, it can be difficult to get a sharp image, sharp enough to recognize the barcode. palmOne Treo650 has a camera that will make it easier to use with Barcode/13. If you don't have a proper contrast with you palmOne Treo600 you can place a sheet of blank paper close to your barcode, this will force the camera to modify the automatic contrast level.

Barcode/13 will give you best results if you follow some recommendations:

- Your barcode should be lighted without any shade, the easiest way and recommended way is to face the light source.
- Best distance is about 15cm with barcode parallel to your Treo.
- Barcode/13 works best with surfaces like CDs or DVDs, it is

possible to use it with bottles but it may require a little training to get the good lighting conditions and to have a symmetric position.

- Don't move your Treo while scanning the barcode: a fuzzy image won't help!



Nominal size of a UPC/EAN symbol is 1.469" wide x 1.02" high, the minimum recommended size is 80% of the nominal size or 1.175" wide x .816" high, the maximum recommended size is 200% of the nominal size or 2.938" wide x 2.04" high. Larger barcodes scan better, smaller barcodes do not scan as well or not at all.

When running Barcode/13, you can see a red target with 2 widths and a green line. Green line is the position that will be used to analyse the barcode, the four vertical lines are recommended sizes for large and small barcodes. Recent barcodes are often large barcodes, but some products have smaller barcodes. If you have a large barcode, point your Treo to fill the large target with your barcode (keep the barcode inside, don't oversize it). If you have a small barcode, the small target will be a better idea. If your barcode is medium size, something between the 2 targets will be fine.

Chapter 2 / Barcode/13 integration

Checking if Barcode/13 is available

A feature is set to let applications know if Barcode/13 is available, and barcode types that are supported. Currently exported value is

eanFtrNumBarcodeHasUPCA		eanFtrNumBarcodeHasEAN13	
eanFtrNumBarcodeHasISBN		eanFtrNumBarcodeHasSmall	
eanFtrNumBarcodeHasConfirm		eanFtrNumBarcodeHasCallback,	

meaning that only ISBN, UPC-A and EAN-13 will be scanned.

```
#define eanAppCreator                'Bcs2'
#define eanAppVersion                1

#define eanFtrCreator                eanAppCreator
#define eanFtrNumBarcode             0
#define eanFtrNumBarcodeDefault     0x00000000
#define eanFtrNumBarcodeHasUPCE     0x00000001 // Not available
#define eanFtrNumBarcodeHasEAN8     0x00000002 // Not available
#define eanFtrNumBarcodeHasISBN     0x00000004
#define eanFtrNumBarcodeHasUPCA     0x00000008
#define eanFtrNumBarcodeHasEAN13    0x00000010

#define eanFtrNumBarcodeHasSmall    0x00010000
#define eanFtrNumBarcodeHasHuman    0x00020000 // Not available

#define eanFtrNumBarcodeHasConfirm  0x01000000
#define eanFtrNumBarcodeHasCallback 0x02000000

#define eanFtrNumBarcodeFormatMask  0x0000FFFF
#define eanFtrNumBarcodeDisplayMask 0x00FF0000
#define eanFtrNumBarcodeCommandMask 0xFF000000
```

Launching Barcode/13 from your application

Launching Barcode/13 within your application is very simple. Note: you're not supposed to copy/paste the following lines, this example is a short way to give all needed information and not a valid C syntax!

```
typedef struct
{
    UInt16 version;
    UInt32 creator;
    UInt16 key;
    UInt32 mode;
} barcodeKey;

barcodeKey *registration = MemPtrNew(sizeof(barcodeKey));
registration->version = eanAppVersion;
registration->creator = appFileCreator; /* YOUR application creator ID */
registration->key = eanRegistrationKey;
registration->mode = eanFtrNumBarcodeHasEAN13|eanFtrNumBarcodeHasCallback;
MemPtrSetOwner(registration, 0);

DmGetNextDatabaseByTypeCreator(true, (DmSearchStateType*)&searchState,
                                sysFileTApplication, eanAppCreator, true,
                                (UInt16*)&cardNo, (LocalID*)&dbID);
SysUIAppSwitch(cardNo, dbID, sysAppLaunchCmdPanelCalledFromApp, registration);
```

When launched with `eanFtrNumBarcodeHasCallback` Barcode/13 will return to your application with `sysAppLaunchCmdReturnFromPanel`. This way, calling applications can make the difference between a normal launch and when returning from a Barcode/13 call.

Developers wishing to use Barcode/13 as a third party add-on to retrieve a barcode in their own application automatically must request a registration key `eanRegistrationKey`. Registration fees are linked to the price of the target application; freeware applications can get a free registration key to integrate with Barcode/13.

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