

Garmin Colour Palette & XPM

A quick reference



*'Our main aim is to make TYP files more accessible so that **anyone** can enjoy customising their own maps.'*

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256 colours

If you have a GPS device which uses an 'old' Garmin palette of 256 colours you will need to convert pictures you have copied or imported to maximise your colour contrast.

Using TYPWiz you click the '256 color' or 'Garmin Color' button:

This means that your lines,polygons and pois are given (old) Garmin Colours.

Unfortunately, if your icons contain shades of the same colour, as below, the result can be quite disappointing:

example:



This has nothing to do with the difference between 'high color' and 'truecolor' as they only apply to POIs - see POIs

If you have an Oregon etc or a fairly new GPS device, then there is no need to convert your icons to a limited palette.

XPM format

The following xpm format is similar to that found in a Garmin TYP file.

It has now become a standard for creating text-typ files.

width	height	Number of colours	Number of letters to represent a pixel	Transparency ColorMode POIs only
0 - 255	0 - 255	255	0 - 2	0 = solid 1=has transparency 2=has opacity

examples:

xpm= "16 , 14, 23, 1" colormode = 0 : a solid rectangle with 23 colours

xpm= "26 , 26, 8, 1" colormode = 16 : a square with 8 colours including transparency

xpm= "32,32,16" colormode=32 : a square with 16 colors AND levels of opacity.

Note:

Colours must directly follow xpm . BMP ,if any ,must follow colours:

```
Xpm="32 4 2 1"
"0 c #C0C0C0"
"1 c #FF0000"
"11111111111111111111111111111111"
"00000000000000000000000000000000"
"00000000000000000000000000000000"
"11111111111111111111111111111111"
```

NOT:

```
"0 c #C0C0C0"
"1 c #FF0000"
Xpm="32 4 2 1"
"11111111111111111111111111111111"
"00000000000000000000000000000000"
"00000000000000000000000000000000"
"11111111111111111111111111111111"
```

NOT

```
Xpm="32 4 2 1"
"11111111111111111111111111111111"
"00000000000000000000000000000000"
"00000000000000000000000000000000"
"11111111111111111111111111111111"
"0 c #C0C0C0"
"1 c #FF0000"
```

Lines

In the early days of GPS , maps only contained solid lines and polygons - this meant you couldn't create patterns. In theory such lines/polygons require less processing power. Today, there is no noticeable difference

Lines can have 0,1,2 or 4 colours , not 3 or > 4

Lines with no bitmaps

No bitmap means red =0

Such lines may have a linewidth and a borderwidth.

Both borderwidth and linewidth can have the values 0 - 32 - yes, even linewidth=0 !

XPM 0 0 1 0 : line has 1 colour

Use with linewidth to determine thickness of line,ie

```
LineWidth=5  
Xpm="0 0 1 0"
```

(borderwidth= 0)

linewidth=0-32

Note : borderwith must be zero.

Note : borderwidth & linewidth must be mentioned before XPM

XPM 0 0 2 0 : line has 2 colours

This can mean:

a) border colour & line colour

Use with linewidth to determine thickness of line.

Use with borderwidth to determine thickness of border.

```
LineWidth=5  
BorderWidth=1  
Xpm="0 0 2 0"
```

b) line has day color and night colour

Do not mention linecolour and bordercolour

```
Xpm="0 0 2 0"
```

XPM 0 0 4 0 : line has 2 day colours and 2 night colours

Must use with linewidth to determine thickness of line.

```
LineWidth=5  
BorderWidth=3  
Xpm="0 0 4 0"
```

Lines with bitmaps

XPM 32 3 2 1 : line has a bitmap 32 x 3 with 2 colours using **single** letters to represent a pixel.

XPM 32 5 4 1 : line has a bitmap 32 x 5 with 2 daycolours and 2 night colours using **single** letters to represent a pixel.

Note: colours could include one transparent colour

Note: the width must be 32

```
Xpm="32 32 4 1"  
"0 c none"  
"1 c #FF0041"  
"2 c none"  
"3 c #0030D3"
```

Polygons

polygons can have 0, 1, 2 or 4 colours, not 3 or > 4

Polygons with no bitmaps

No bitmap, so red = 0

XPM 0 0 1 0 : polygon has 1 colour

No need for border width or line width!

```
Xpm="0 0 1 0"  
"0 c #77008C"
```

XPM 0 0 2 0 : polygon has 2 colours

Polygon has day color and night colour

```
Xpm="0 0 2 0"  
"0 c #77008C"  
"1 c #FF00FF"
```

(Do not include linecolour and bordercolour)

(**XPM 0 0 4 0**) : does not exist for polygons

Polygons with bitmaps

XPM 32 32 2 1 : polygon has a bitmap 32 x 32 with 2 colours using **single** letters to represent a pixel.

Note: colours could include one transparent colour

Note: the width must be 32

XPM 32 32 4 1: Polygon has 2 day and 2 night bitmap colours.

Notice in this example day and night have a transparent 'colour'.

```
Xpm="32 32 4 1"  
"0 c none"  
"1 c #00B000"  
"2 c none"  
"3 c #FFFF00"
```

POIs

dimensions

POIs always have a bitmap with width: 0 - 255 and height : 0 - 255

Yes, you can have a poi with area 0 x 0 ! This will render it invisible , but be warned:

Mapsource - not Basecamp - and some GPS devices may hangup.

colour modes

There are at present 3 colour modes:

0	16
No transparency	Has transparency
DayXpm="8 8 2 1" Colormode=0 "\$ c #A4009F" "% c #ED00ED"	DayXpm="8 8 3 1" Colormode=16 "\$ c #A4009F" "% c #ED00ED" "& c none"
32	
Has Opacity	
DayXpm="8 8 3 1" Colormode=32 "\$ c #A4009F" alpha=0 "% c #ED00ED" alpha=15 "& c #FF00FF" alpha=0	

The 0 , 16 & 32 numbers are used by Garmin

Interestingly, the initial xpm definitions did not include colormodes.

xpm : width,height ,colours,symbols.

Do not be confused : xpm **12,12,6,2** does not mean colormode 2

There is no real need to add a colormode option after the xpm as the parser should be able to detect the mode by checking for a 'none' or an 'alpha'.

It is important to establish the correct color mode of a POI particularly when saving its data stream.

TYPWiz adds the appropriate colormode at the end of a XPM sentence:

DayXpm="16 12 5 1" Colormode=32

Colour Palettes

There are 2 different colour palettes:

High Color

Maximum number of colours=256

For most of us, pois with high colors are quite acceptable.

You can only have 256 colours, but this is often quite sufficient to even render shades of colour.

There are 3 different types of pois with high color:

XPM 32,32,24,1 colormode 0

XPM 32,32,24,1 colormode 16

XPM 32,32,24,1 colormode 32

```
DayXpm="8 8 3 1" Colormode=16
"$ c #A4009F"
"% c #ED00ED"
"& c none"
"&&&&&&&&&"
"&&&&$&&&&"
"&&&&$&&&&"
"&&$&$&$&$&"
"&$&$%$%$&"
"&$&%$&$&$&"
"&&&&%$&&&&"
"&&&&$&&&&"
```

True Color

Maximum number of colours=256*256

Note: Colours have be set to 0 ! This has been copied from Garmin.

There are 3 different types of pois with true color:

XPM 32,32,0,1 colormode 0

```
DayXpm="2 2 0 1" Colormode=0
"#FFFFFF"
"#FF00FF"
"#FF00FF"
"#FFFFFF"
```

XPM 32,32,0,1 colormode 16

DayXpm="2 2 0 1" Colormode=16

```
DayXpm="2 2 0 1" Colormode=16
"#FF00FF" ;// transparent color
"#FFFFFF"
"#FF00FF"
"#FF00FF"
"#FFFFFF"
```

XPM 32,32,0,1 colormode 32

```
DayXpm="2 2 0 1" Colormode=32
"#FFFFFF" alpha=6
"#FF00FF" alpha=15
"#FF00FF" alpha=0
"#FFFFFF" alpha=10
```

256, 3
bitmap, 5, 6, 7

ColorMode, 4