

~DY – Download Objects

Description The ~DY command downloads to the printer graphic objects or fonts in any supported format. This command can be used in place of ~DG for more saving and loading options. ~DY is the preferred command to download TrueType fonts on printers with firmware later than X.13. It is faster than ~DU. The ~DY command also supports downloading wireless certificate files.



Note • When using certificate files, your printer supports:

- Using Privacy Enhanced Mail (PEM) formatted certificate files.
- Using the client certificate and private key as two files, each downloaded separately.
- Using exportable PAC files for EAP-FAST.
- Zebra recommends using Linear style memory devices for storing larger objects.

Format ~DYd:f,b,x,t,w,data

Parameters	Details
<p>d = file location</p> <p>.15↑</p> <p>.NRD and .PAC files reside on E: in firmware versions V60.15.x, V50.15.x, or later.</p>	<p><i>Accepted Values:</i> R:, E:, B:, and A:</p> <p><i>Default Value:</i> R:</p>
<p>f = file name</p>	<p><i>Accepted Values:</i> 1 to 8 alphanumeric characters</p> <p><i>Default Value:</i> if a name is not specified, UNKNOWN is used</p>
<p>b = format downloaded in data field</p> <p>.14↑</p> <p>.TTE and .TTF are only supported in firmware versions V60.14.x, V50.14.x, or later.</p>	<p><i>Accepted Values:</i></p> <p>A = uncompressed (ZB64, ASCII)</p> <p>B = uncompressed (.TTE, .TTF, binary)</p> <p>C = AR-compressed (used only by Zebra’s BAR-ONE® v5)</p> <p>P = portable network graphic (.PNG) - ZB64 encoded</p> <p><i>Default Value:</i> a value must be specified</p>

Parameters	Details
<p><code>x</code> = extension of stored file</p> <p>.14† .TTE and .OTF are only supported in firmware versions V60.14.x, V50.14.x, or later.</p> <p>.15† .NRD and .PAC are only supported in firmware versions V60.15.x, V50.15.x, or later.</p>	<p><i>Accepted Values:</i></p> <ul style="list-style-type: none"> B = bitmap E = TrueType Extension (.TTE) G = raw bitmap (.GRF) P = store as compressed (.PNG) T = TrueType (.TTF) or OpenType (.OTF) X = Paintbrush (.PCX) NRD = Non Readable File (.NRD) PAC = Protected Access Credential (.PAC) C = User defined menu file (WML) F = User defined webpage file (HTM) H = Printer feedback file (GET) <p><i>Default Value:</i> a value other than the accepted values defaults to .GRF</p>
<p><code>t</code> = total number of bytes in file</p> <p>.14† .TTE is only supported in firmware versions V60.14.x, V50.14.x, or later.</p>	<p><i>Accepted Values:</i></p> <ul style="list-style-type: none"> .BMP This parameter refers to the actual size of the file, not the amount of disk space. .GRF images: the size after decompression into memory This parameter refers to the actual size of the file, not the amount of disk space. .PCX This parameter refers to the actual size of the file, not the amount of disk space. .PNG images: This parameter refers to the actual size of the file, not the amount of disk space. .TTF This parameter refers to the actual size of the file, not the amount of disk space. .TTE This parameter refers to the actual size of the file, not the amount of disk space.

Parameters	Details
<p><code>w</code> = total number of bytes per row</p> <p> <code>.TTE</code> is only supported in firmware version V60.14.x, V50.14.x, or later.</p> <p> <code>.NRD</code> and <code>.PAC</code> files are supported in firmware version V60.15.x, V50.15.x, or later.</p>	<p><i>Accepted Values:</i></p> <ul style="list-style-type: none"> <code>.GRF</code> images: number of bytes per row <code>.PNG</code> images: value ignored <code>.TTF</code> images: value ignored <code>.TTE</code> images: value ignored <code>.NRD</code> images: value ignored <code>.PAC</code> images: value ignored
<p><code>data</code> = data</p>	<p>ASCII hexadecimal encoding, ZB64, or binary data, depending on <code>b</code>.</p> <ul style="list-style-type: none"> <code>A, P</code> = ASCII hexadecimal or ZB64 <code>B, C</code> = binary <p>When binary data is sent, all control prefixes and flow control characters are ignored until the total number of bytes needed for the graphic format is received.</p>



Note • When transmitting fonts or graphics, the `~DY` command and the binary content can be sent as two separate data streams. In cases where the `~DY` command and data content are sent separately, the connection to the printer must be maintained until both the command and data content have been sent. If the command and data content are sent separately, the data light on the printer will remain lit until it receives all the data called for in the `~DY` command. The download will be considered complete when the number of bytes called out in the `~DY` command have been received.

For best results, graphic files must be monochrome (black and white) or dithered.



Example • This is an example of how to download a binary TrueType Font file of `Size` bytes using the name `fontfile.ttf` and storing it to permanent flash memory on the printer:

```
~DYE:FONTFILE.TTF,B,T,SIZE,,
```



Examples • These examples show:

- that when the `^IM` command is used with the `^FO` command, the `^IM` command (see [^IM on page 247](#)) moves the `logo.png` file from a storage area to the 0,0 position on the label. This is the ZPL code:

```
^XA
^FO0,0^IMR:LOGO.PNG^FS
^XZ
```

- that when the `^IL` command (see [^IL on page 246](#)) is used at the beginning of a label format, it loads a stored image (`logo.png`) of a format and merges it with additional data. It is automatically positioned at the 0,0 position of the label and does not require the `^FO` command. This is the ZPL code:

```
^XA
^ILR:LOGO.PNG
^XZ
```

Comments For more information on ZB64 encoding and compression, see [ZB64 Encoding and Compression on page 1237](#).



These are some important things to know about this command in firmware version V60.14.x, V50.14.x, or later:

- ZebraNet Bridge can be used to download fonts and graphics with this command.
- OpenType tables are only supported when downloading the font with this command
- OpenType fonts (`.OTF`) are supported if they are downloaded as a TrueType font. In the printer `.OTF` fonts have the `.TTF` extension.

^IL - Image Load

Description The ^IL command is used at the beginning of a label format to load a stored image of a format and merge it with additional data. The image is always positioned at ^F00,0.



Important • See ^IS on page 248.

Using this technique to overlay the image of constant information with variable data greatly increases the throughput of the label format.

Format ^ILd:o.x

Parameters	Details
d = location of stored object	<i>Accepted Values:</i> R:, E:, B:, and A: <i>Default Value:</i> R:
o = object name	<i>Accepted Values:</i> 1 to 8 alphanumeric characters <i>Default Value:</i> if a name is not specified, UNKNOWN is used
x = extension	<i>Fixed Value:</i> .GRF, .PNG



Example • This example recalls the stored image SAMPLE2.GRF from DRAM and overlays it with the additional data. The graphic was stored using the ^IS command. For the stored label format, see the ^IS on page 248 command.

ZPL II CODE	GENERATED LABEL
<pre> ^XA ^ILR: SAMPLE2.GRF^FS ^CFD,36,20 ^FO15,210 ^FD900123^FS ^FO218,210 ^FDLINE 12^FS ^FO15,360^AD ^FDZEBRA THERMAL^FS ^FO15,400^AD ^FDTRANSFER PRINTER^FS ^FO15,540 ^FD54321^FS ^FO220,530 ^FDZ58643^FS ^FO15,670^A0,27,18 ^FDTesting Stored Graphic^FS ^FO15,700^A0,27,18 ^FDLabel Formats!!^FS ^XZ </pre>	

^IM – Image Move

Description The ^IM command performs a direct move of an image from storage area into the bitmap. The command is identical to the ^XG command (Recall Graphic), except there are no sizing parameters.

Format ^IMd:o.x

Parameters	Details
d = location of stored object	<i>Accepted Values:</i> R:, E:, B:, and A: <i>Default Value:</i> search priority
o = object name	<i>Accepted Values:</i> 1 to 8 alphanumeric characters <i>Default Value:</i> if a name is not specified, UNKNOWN is used
x = extension	<i>Fixed Value:</i> .GRF, .PNG



Example • This example moves the image SAMPLE.GRF from DRAM and prints it in several locations in its original size.

```
^XA
^F0100,100^IMR:SAMPLE.GRF^FS
^F0100,200^IMR:SAMPLE.GRF^FS
^F0100,300^IMR:SAMPLE.GRF^FS
^F0100,400^IMR:SAMPLE.GRF^FS
^F0100,500^IMR:SAMPLE.GRF^FS
^XZ
```

Comments By using the ^FO command, the graphic image can be positioned anywhere on the label.

The difference between ^IM and ^XG: ^IM does not have magnification, and therefore might require less formatting time. However, to take advantage of this, the image must be at a 8-, 16-, or 32-bit boundary.