V61.17.x, V61.16.x, and V61.15.6Z Summary of Firmware Changes

This document summarizes the following V61.17.x, V61.16.x, and V61.15.x firmware releases:

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V61.17.12Z

Release Date: 21 July 2012

This firmware release includes features of the previous V61.17.11Z release. It is for use with the following printer models:

- GK420d™
- GK420t™
- LP 2824 Plus™
- TLP 2824 Plus™

Issues Corrected

- Issue with labels printing out of order has been fixed**.**
- When the print width is set using *q* command, the *R* command will now be set to 0, making margin positioning backward-compatible to previous firmware versions.
- The internal wired and wireless printserver will no longer lose connectivity when a raw port other than 9100 is used.
- The issue where a printer could display a flashing Red-Green LED immediately after a power cycle has been fixed.

Changes

None.

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V61.17.11Z

Release Date: 30 June 2011

This firmware release includes features of the previous V61.17.10Z release. It is for use with the following printer models:

- GK420d™
- GK420t™
- LP 2824 Plus™
- TLP 2824 Plus™

Issues Corrected

- Line mode fonts sizes on LP2824 Plus are now backward compatible with LP2824.
- Support for using FNC1 in Code 128 now complies to AIM ITS/99-005 4 November 1999.
- When printer is configured to cutter mode, the ^LL command will now be ignored unless the value used is greater than the cutter-to-head distance, plus the max tear adjust.
- Timing issues caused by dry cut are resolved.
- Remaining number of labels after RIBBON OUT condition is now accurately reflected.
- Print position issues when printing serialized fields has been corrected.
- EPL stored forms are now being completely cleared.
- The encoding table for EPL soft fonts has been corrected.
- Print servers now properly handle fragmented TCP packets.
- The OS command has now been implemented.
- Carriage Returns and Nulls will now be ignored before processing EPL or ZPL code.
- Handling of multiple formats separated by CR/LF strings has been improved.
- A "0" will no longer be added to a Code 128 barcode when the data stream is "<T>".
- No-Motion Power Up placement has been corrected for all print modes.
- Mirroring command files with ^DFB will now store formats in B: memory correctly.
- 'R' command values are now persistent across power cycle.
- While in ZPL mode, if the print mode is set using ^MM, the selected values will carry over to EPL mode.
- The ~CONTROL value settings are now persistent through a printer power cycle
- Codablock now works correctly in conjunction with ^FT in all orientations.
- FTP connections are no longer incorrectly closed during data transmission.
- Issues found when printing via LPD have been resolved.
- Issue with wireless print servers not connecting to certain access points when using WPA-PSK is resolved.
- Issue with authentication failure when using PEAP on IAS2008 server is resolved.

- Issue with wireless print servers losing communication for extended periods of time with certain controllers when configured for WPA-LEAP is resolved.
- Russian translations for WEB and DELAYED CUT have been updated.
- ~JS has been updated function correctly when lower case letters are used in parameters.
- Internal Print Server will now try to renew DHCP address once lease is up.
- File names with more than 8 characters will no longer be changed during the defragmentation process.
- RAM management has been improved to reduce out of memory errors.

Changes

- Added SGD command, comm.pnp_option, with two values 'on' and 'off' - with the default being 'off".
- Added extra param to ^SC - "g" param, called "Serial PnP", with values 'y' and 'n', defaulted to 'n'.
- Added new printhead over-temp mode, when triggered the printer LED shall blink RED-RED-RED-Green.

Note • If a print server is directly connected to some Cisco switches, it may be necessary to configure the "switchport" setting to "host". Once "host" is enabled, it enables the "portfast" feature, which prevents spanning-tree topology updates from occurring. These updates are exchanged between all of the switches on the network and can cause delays.

V61.17.10Z

Release Date: 03 December 2010

This firmware release includes features of the previous V61.17.9Z release. It is for use with the following printer models:

- GK420d™
- GK420t™
- LP 2824 Plus™
- TLP 2824 Plus™

Issues Corrected

- Firmware downloading enhancements to improve reliability.

Changes

- None.

V61.17.9Z

Release Date: 05 August 2010

This firmware release includes features of the previous V61.17.5Z release. It is for use with the following printer models:

- GK420d™
- GK420t™
- LP 2824 Plus™
- TLP 2824 Plus™

Issues Corrected

- An EPL format with 2 variable fields in the barcode will now print the same size when printed consecutively and will scan properly.
- The printer will now maintain the same configuration when switching between EPL1 and EPL2 mode.
- The internal wired 10/100 print server will now issue a DHCP Decline when a duplicate IP address is detected.
- Unwanted characters will no longer appear on the printer's LCD display during a Mirror process.
- When the printer is configured to EPL 1 mode after a power cycle it will now remain responsive to EPL commands if a network timeout occurs.
- A printer configured for no media feed at power-up will now have the first printed label correctly positioned.
- A printer configured for no media feed at power-up should not skip labels.

Changes

Added SGD command, `device.epl_legacy_mode`, that configures the printer into LP/TLP 2824 and LP/TLP 2844 compatibility mode for vertical registration.

Updated the `^CM Change Memory Letter Designation` command to include the multiple alias parameter.

device.epl_legacy_mode

Description This command places the printer in LP/TLP 2824 and LP/TLP 2844 compatibility mode for vertical registration.

Supported Devices

- G-Series printers
- LP2824 Plus and TLP 2824 Plus

Type `getvar;setvar`

Commands	Details
`getvar`	This command causes the printer to return the current setting for the device.epl_legacy_mode setting. *Format:* `! U1 getvar "device.epl_legacy_mode"`
`setvar*`	This command instructs the printer to change the epl_legacy_mode setting. *Format:* `! U1 setvar "device.epl_legacy_mode" "value"` *Values:* `off =` epl_legacy_mode not active `registration =` EPL legacy registration mode on *Default Value:* `"epl_zpl"`

Note • For details on SGD command structure, see the Zebra Programming guide.

Example • This `setvar` example shows setting the value to `"registration"`.

```
! U1 setvar "device.epl_legacy_mode" "registration"
```

Note • This setting is not defaulted as part of a factory default (`^JUF` or `^default`). The setting is persistent across a power cycle or reset (`~JR` or `device.reset`)

When printing labels using EPL commands, printing starts 1mm from the top edge of the label (from the gap). This is known as the "no print zone". When printing in ZT mode, the "no print zone" starts at the gap on the leading edge of the label. When printing in ZB mode, the "no print zone" starts from the gap on the trailing edge of the label. In the TLP2844, LP2844, TLP2824, LP2824, and TLP3842 printers, the distance from gap to start of print (the "no print zone") is not always 1mm. The table below shows the nominal distance.

Distance from Edge of Label to First Print Line (No Print Zone)

Legacy Printer Model	New Printer Model	ZT Mode	ZB Mode
LP2844	GX420, GK420 (direct thermal)	1.9 mm	0.0 mm
TLP2844	GX420, GK420 (thermal transfer)	0.4 mm	1.6 mm
TLP3842	GX430 (thermal transfer)	0.0 mm	1.2 mm
LP2824	LP 2824 Plus (direct thermal)	1.5 mm	0.4 mm
TLP2824	TLP 2824 Plus (thermal transfer)	0.1 mm	1.8 mm

a. Setting epl_legacy_mode to `"registration"` selects the distance shown in the table.
b. Setting epl_legacy_mode to `"off"` selects a no print zone distance of 1mm.

^CM — Change Memory Letter Designation

Description The ^CM command allows you to reassign a letter designation to the printer's memory devices. If a format already exists, you can reassign the memory device to the corresponding letter without forcing, altering, or recreating the format itself.

Using this command affects every subsequent command that refers to specific memory locations.

Format ^CMa,b,c,d

Parameters	Details
a = memory alias for B:	*Accepted Values:* B:, E:,R:, A:, and NONE *Default Value:* B:
b = memory alias for E:	*Accepted Values:* B:, E:,R:, A:, and NONE *Default Value:* E:
c = memory alias for R:	*Accepted Values:* B:, E:,R:, A:, and NONE *Default Value:* R:
d = memory alias for A:	*Accepted Values:* B:, E:,R:, A:, and NONE *Default Value:* A:
e = multiple alias	*Accepted Values:* M, or no value *Default Value:* no value • This parameter is supported on Xi4 and ZM400/ZM600 printers using firmware V53.17.7Z or later. • This parameter is supported on G-Series printers using firmware versions v56.17.9Z and v61.17.9Z or later. • This parameter is supported on printers using firmware V60.17.7Z or later.

Comments Unless the e (multiple alias) parameter is used, when two or more parameters specify the same letter designator, all letter designators are set to their default values.

It is recommended that after entering the ^CM command, ^JUS is entered to save changes to EEPROM. Any duplicate parameters entered will reset the letter designations back to the default.

If any of the parameters are out of specification, the command is ignored.

Example 1 • This example designates letter E: to point to the B: memory device, and the letter B: to point to the E:memory device.

```
^XA
^CME,B,R,A
^JUS
^XZ
```

Example 2 • This example designates that content sent to, or read from the B: or E: memory locations will be sent to or read from the E: memory location.

```
^XA
^CME,E,R,A,M
^JUS
^XZ
```

Example 3 • This example designates that content sent to, or read from the A: or E: memory locations will be sent to or read from the E: memory location.

```
^XA
^CMB,E,R,E,M
^JUS
^XZ
```

Example 4 • This example designates that content sent to, or read from the A:, B: or E: memory locations will be sent to or read from the E: memory location.

```
^XA
^CME,E,R,E,M
^JUS
^XZ
```

Note • Examples 2, 3 and 4 are the only valid uses of the multiple alias parameter.

V61.17.5Z

Release Date: 18 January 2010

This firmware release includes features of the previous V61.17.3Z release. It is for use with the following printer models:

- GK420d™
- GK420t™
- LP 2824 Plus™
- TLP 2824 Plus™

Changes

The `ip.mirror.reset_delay` command allows you to configure the number of seconds between when the printer receives the last byte of the last file from the `/commands` directory and when the printer resets during a mirror event. This new command makes it possible to place files that require processing by the ZPL or SGD engines in the `/commands` directory. Zebra recommends placing files that require processing by the ZPL or SGD engines into the `/commands` directory and using the `ip.mirror.reset_delay` command, rather than performing character substitution on content being placed in the /files directory. The default setting for the `ip.mirror.reset_delay` command is 5 seconds; in some cases it may be necessary to use a longer delay to allow for full processing of longer or more complex files.

The `/commands` directory — with the use of the `ip.mirror.reset_delay` command — is now for files that need processing by the ZPL or SGD engine. This includes:

- Stored formats using the `^DF` command
- Saved formats using the `^IS` command
- Graphics and font files that do need processing to be stored (content using the `~DY`, `~DG`, `~DS`, `~DT`, and `~DU` commands)

The `/files` directory is for use with files that do not require processing by the ZPL or SGD engines. This includes:

- .ttf, .png or .bmp files (that previously would have been sent using `~DY`)
- .wml files
- ZBI programs
- Wireless certificate files
- .nrd files (containing either certificate content or command content)

ip.mirror.reset_delay

Description This command specifies the number of seconds between when the printer receives the last byte of the last file from the /commands directory and when the printer resets during a mirror event.

Type `getvar;setvar`

Note • This command is available in V56.17.3Z, V61.17.3Z, and later versions.

This table identifies the command for this format:

Commands	Details
`getvar`	This command retrieves the number of seconds between when the printer receives the last byte of the last file from the /commands directory and when the printer resets during a mirror event. *Format:* `! U1 getvar "ip.mirror.reset_delay"`
`setvar`	This command sets the number of seconds between when the printer receives the last byte of the last file from the /commands directory and when the printer resets during a mirror event. *Format:* `! U1 setvar "ip.mirror.reset_delay" "value"` *Values:* 0 - 900 (seconds) *Default Value:* `"5"`

Example • This `setvar` example shows the value set to `"10"`.

```
! U1 setvar "ip.mirror.reset_delay" "10"
```

When the setvar value is set to `"10"`, the getvar result is `"10".`

Note • The default setting for the `ip.mirror.reset_delay` command is 5 seconds; in some cases it may be necessary to use a longer delay to allow for full processing of longer or more complex files.

Issues Corrected

- Print Server will now completely close a connection after a connection timeout.
- A print job will resume after the print head is opened, closed and an error has been cleared.
- Multiple connections being opened and closed at the same time will no longer cause labels to print out of order.
- Printer will no longer reset and lose print job when the print head is lifted in the middle of a EPL 1 print job.
- The SGD commands "`interface.network.active.ip_addr`" and "`interface.network.active.gateway`" will now correctly reflect the active network connection.
- In EPL 1 mode, the Formfeed control character (0x0C) will now cause the printer to advance to the top of next label.
- Internal Wired/Wireless Print Server will no longer send a continuous DHCP-DISCOVER when "DHCP" is the only selected addressing method.

V61.17.3Z

Release Date: 02 September 2009

This firmware release includes features of the previous V61.16.9Z release. It is for use with the following printer models:

- GK420d™
- GK420t™
- LP 2824 Plus™
- TLP 2824 Plus™

Changes

- LP 2824 Plus and TLP 2824 Plus printers are now supported

Mirror

Mirror is a feature that gives you the ability to:

- Centrally manage and monitor the deployment of your Zebra printers
- Centrally configure and maintain your Zebra printers through remote updates
- Remotely monitor printer updates – via the “Feedback” feature
- There are several Set/Get/Do (SGD) commands that can initiate Mirror. For details see the ZPL Manual.

Benefits

- When using Mirror, updating the configuration and firmware on the printer is remotely managed from a centralized FTP server. Configurations can be uniformly deployed to individual printers or to groups of printers. Unique Configurations can also be targeted to printers as needed. Through the “Feedback” feature, Administrators can easily log and monitor configuration updates on a printer-by-printer basis. Typical uses of Mirror include:
  - Configuring printers as they are first received.
  - Performing scheduled maintenance updates, sending firmware, fonts, graphics and other objects to the printer as needed.
  - Changing printer Configurations in order to move printers from one role to another.
- Supported printers and print servers:

Printer	Print Servers
G-series	• Internal, Integrated 10/100 wired
LP 2824 Plus TLP 2824 Plus	• Internal, Integrated 10/100 wired
Print Servers connected to the parallel port, either externally or internally, are not supported for Mirror use.	

See the ZPL Manual for full details on the Mirror feature.

Issues Corrrected

- The integrated internal wired and wireless print servers will now close the connection when the Host resets a connection that does not contain any data.
- Dynamic Media Calibration enhanced to use more data samples
- The EPL `Q` command value no longer overwrites the calibrated label length.

V61.16.9Z

Release Date: 21 May 2009

This firmware release includes features of the previous V61.16.7Z release. It is for use with the following printer models:

- GK420d
- GK420t

Note • V61.16.8Z was not released.

Issues Corrrected

- In line mode, the 12 digit UPC-A barcode will now use 11 digits to calculate the check digit.
- Darkness consistency across continuously printed labels in Thermal Transfer has been improved.

V61.16.7Z

Release Date: 22 April 2009

This firmware release includes features of the previous V61.16.6Z release. It is for use with the following printer models:

- GK420d
- GK420t

Changes

- Peel and Cutter Modes enabled to support printers equipped with Peel or Cutter hardware.
- ZPL Black Line mode now operates as it did in legacy printers. The `^MN` command has been enhanced to support an offset parameter when the printer is set to “Non-continuous media mark sensing” (`^MNM`). This parameter allows the user to set an offset position for the black mark. The default for this parameter is 0, the range for the parameter is -80 to +283 for the GK420d, and -120 to +283 for the GK420t. Details are as follows:

Format ^MNa,b

This table identifies the parameters for this format:

Parameters	Details
a = media being used	*Accepted Values:* N = continuous media Y = non-continuous media web sensing* W = non-continuous media web sensing* M = non-continuous media mark sensing A = auto-detects the type of media during calibration** *Default Value:* a value must be entered or the command is ignored
b = mark offset	*Accepted Values:* -80 to +283 for the GK420d -120 to +283 for the GK420t -80 to +283 = the number of dot rows the black mark is offset from the perforation. **Note** • For 600 dpi printers, the step size doubles. *Default Value:* 0

*.Provides the same result.

**.This parameter is supported only on G-series printers.

Issues Corrected

- Entering and exiting EPL Line Mode now works correctly.
- Diagnostic mode now works correctly when accessed from EPL Line Mode, EPL Page Mode, and ZPL.

V61.16.6Z

Release Date: 05 January 2009

This firmware release includes features of the previous V61.16.5Z release. It is for use with the following printer models:

- GK420d
- GK420t

Changes

- Support for ZBI 2.1 added (CSVLOAD, CSVSTORE, TXTLOAD, TXTSTORE). Refer to the *ZPL II Programming Guide* for complete details.
- Rectangular Datamatrix bar codes are now supported. A new “aspect ratio” parameter has been added to the ^BX command to support this new functionality. Refer to the *ZPL II Programming Guide* for complete details.

Issues Corrected

- The ZBI – VAL() function will now correctly convert a string value to a number.
- Code 128 Auto with F1 command in the data stream will now print.
- Formats using graphics and binary 02, 03 and 0F characters now print correctly.
- Intermittent image distortion issue when printing graphics no longer occurs.
- Use of the ZPL ^LH command will no longer effect the positioning of documents described using EPL.
- Use of the ZPL ^LT command will no longer effect the positioning of documents described using EPL.
- Use of the ZPL ^CM command will no longer effect the ability to locate objects with EPL.
- The Bluetooth PIN code will no longer be requested for every print request.
- The printer can now process SDG commands expressed in UTF-16.
- The Front Panel will no longer intermittently display "1HEAD OPEN0" instead of "HEAD OPEN".
- The EPL “R” command will now have the desired effect when used repeatedly.
- Internal 10/100 Print Server now responds to TCP packets when sent at a high rate.
- The print server will remain on-line after a very high level of NetBIOS traffic.
- Printer retains default gateway after power cycle
- Printer web pages now load when using advanced wireless settings

V61.16.5Z

Release Date: 25 June 2008

This firmware release includes features of the previous V61.15.6Z release. It is for use with the following printer models:

- GK420d
- GK420t

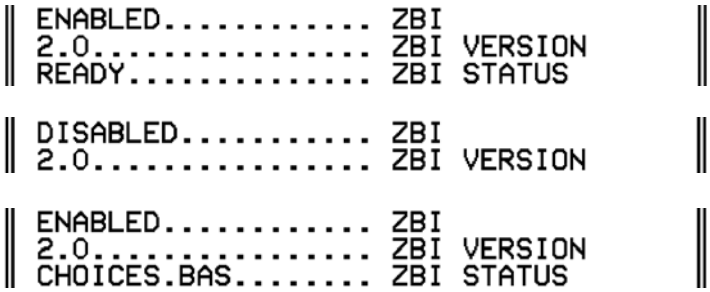
Changes

ZBI 2.0

•V61.16.5Z and later firmware version are ZBI 2.0-Ready.

- ZBI 2.0 can be enabled by placing a ZBI 2.0 key on the printer via the ZBI Key Manager & Downloader utility. Printers can be ordered from the factory with the ZBI 2.0 option enabled. Printers can be ZBI-Enabled in the field by purchasing and using a ZBI Key Kit. Printers can be ZBI-Enabled in the field by purchasing a key at www.zebrasoftware.com.
- Printers which have been ZBI-Enabled will not display a “Z” at the end of the firmware version string. For example, a printer which has been ZBI-Enabled will display the firmware version as V61.16.5, while a printer which has not been ZBI-Enabled will display the firmware version as V61.16.5Z.
- The printer configuration label will display the ZBI status for the printer:

ZBI-Enabled



- ZBI 2.0 is backwards compatible with previous versions of ZBI. Any code which was specifically written to handle a maximum string length of 255 characters will need to be reviewed to ensure it works with unlimited string lengths.
- Support for longer strings, the length of the string dependent on available memory.
- Support for NULL values in Strings and String operations
- SNMP & Set/Get/Do (SGD) Control of ZBI
- On-printer Debugging (via ZBI-Developer)
- ZBI 2.0 Program Encryption
- ZBI 2.0 programs can be made hidden and/or persistent
- Button presses on control panel can be registered as events in ZBI programs

- Support for longer strings, the length of the string dependent on available memory
- New ZBI 2.0 Commands added:

New ZBI 2.0 Commands	
ACCEPT	REGISTEREVENTS
ADDBREAK	SERVERSOCKET
CLIENTSOCKET	SPLIT
CLOSE ALL	SPLITCOUNT
DELBREAK	SUB
HANDLEEVENT	TCPX
HEXTOINT	TRIGGEREVENT
INTTOHEX$	UNREGISTEREVENTS
READ	WRITE

- New ZBI 2.0 Events added:

ZBI Event ID	ZBI Event
68	Autobaud
69	Factory Default
70	Networking Default
71	Networking Factory Default
72	Print Width
73	Darkness Adjust
74	Calibrate
75	Scroll Key

- New ZBI 2.0 Key Events added:

Control Panel Key	ZBI Event ID	ZBI Name
Feed Key	3	Feed Key
Select Key	10	Select Key
Scroll Key	75	Scroll Key

See the latest ZPL manual (available at www.zebra.com) for details on new commands.

V61.15.6Z

Release Date: 11 April 2008

This is the initial firmware release for the following printer models:

- GK420d
- GK420t

New Features

New implementation to support new printer models.

- Dual support for ZPL and EPL II.
- New SetGetDo commands.*
- Support for internal wired print server.

*See the current ZPL Guide for a complete list of the new commands.

For support, please visit www.zebra.com/support or refer to the contact options below:

Geographic Location	Telephone	Toll-free	FAX
The Americas	+1-847-955-2299	+1-877-ASK-ZEBRA	—
Asia Pacific	+65-6858-0722	—	+65 6885 0838
Europe, Africa, Middle East, India	Please contact your supplier.		