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ESC (A

EXECUTING + SETTING

[Name] Control beeper tones

[Printers not featuring this command] **TM-J2000/J2100**, **TM-T90**, **TM-T88IV**, **TM-T70**, **TM-L90**, **TM-U220**

[Range] **TM-P60: fn = 48**
TM-U230: fn = 97, 98, 99
TM-T20, TM-T88V: fn = 97

[Description] Performs the various tasks related to the control of the beeper (listed in the table below).

- Function code (**fn**) specifies the function.

fn	Function No.	Function name
48	Function 48	Beep integrated beeper
97	Function 97	Beep integrated beeper in TM-U230 models Sound buzzer in TM-T88V , TM-T20 models (registered sound pattern specified) (optional external buzzer)
98	Function 98	Set integrated beeper when offline factors occur in TM-U230 models.
99	Function 99	Set integrated beeper except when offline factors occur in TM-U230 models.

- **pl, ph** specifies (**pl + ph × 256**) as the number of bytes after **ph** (**fn** and **[parameters]**).
Description of the **[parameters]** is described in each function.

[Notes] ■ The functions of this command are determined by the (**fn**) setting. Actual command operation varies according to function.

Program Example 1

```
PRINT #1, CHR$( &H1B ); " (A"; CHR$( 4 ); CHR$( 0 ); CHR$( 48 ); CHR$( 49 ); CHR$( 3 ); CHR$( 15 ); ← <Function 48>
```

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Program Example 2

```
PRINT #1, CHR$(6H1B);" (A";CHR$(3);CHR$(0);CHR$(97);CHR$(1);CHR$(1); ← <Function 97>
(Sounds a registered pattern 1 time)
```

[Model-dependent variations]

TM-P60, TM-U230

TM-P60

The printer supports function 48.

TM-U230

The printer supports functions 97 to 99.

When controlling the integrated beeper with this command, set DIP switch [SW2-8] off. Turn off the printer before changing DIP switch settings.

The integrated beeper corresponds to the PAPER OUT LED in hardware configuration. Therefore when integrated beeper sounds, the PAPER OUT LED blinks. When integrated beeper stops beeping, PAPER OUT LED goes off. When there is no paper and this command is executed to stop beeping, the PAPER OUT LED is off.

The printer is not operated by this command under the following conditions:

- **PAPER OUT LED blinks due to waiting for online recovery when changing the paper.**
- **PAPER OUT LED blinks due to waiting for switch during self-test printing.**

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ESC (A *pL pH fn n c t* <Function 48 >

[Name] Beep integrated beeper

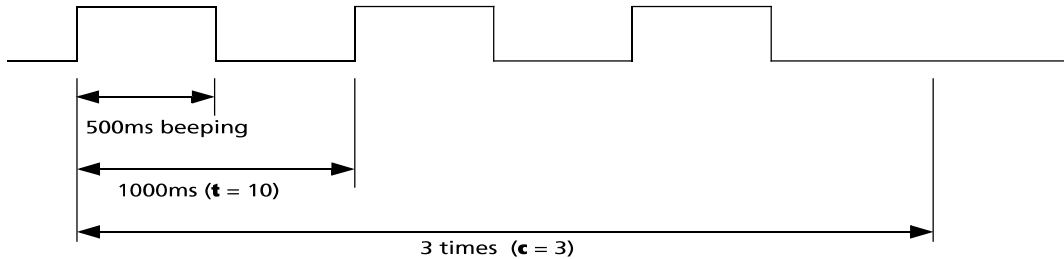
[Format] ASCII ESC (A **pL pH fn n c t**
Hex 1B 28 41 **04 00 30 n c t**
Decimal 27 40 65 **4 0 48 n c t**

[Range] (**pL** + **pH** × 256) = 4 (**pL** = 4, **pH** = 0)
fn = 48
TM-P60: 48 ≤ **n** ≤ 58
1 ≤ **c** ≤ 63
10 ≤ **n** ≤ 255

[Description] Beeps the integrated beeper.

- **n** specifies the tone that is beeped. The tones depend on the printer model. When **n** specifies "doesn't beep," the parameters **c** and **t** are still required for this function.
- **c** specifies the number of beeps.
- **t** specifies the beeping cycle time (**t** × 100 ms).

[Notes] ■ This function beeps the beeper "(**t** × 100 ms) × **c**."
Example: When tone (**n**) specifies "500ms beeps" and **c** = 3 and **t** = 10



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- If this command is newly processed during beeping of the buzzer, the current process for beeping the buzzer is stopped and the new process for beeping the buzzer is started.
- Integrated beeper beeping by this function stops due to any of the following factors.
 - Finish specification of (c).
 - The parameter **n** specifies “doesn’t beep” by this function.
 - Printer processes **DLE DC4 (fn = 2)** command.
 - Reset or power off.

[Model-dependent variations] **TM-P60, TM-U230**

TM-P60

The setting of [Msw 8-2] ~ [Msw 8-5] doesn’t affect the performance of this command.

The “doesn’t beep” (n = 48) affects beeping caused by this function only. It doesn’t affect warning beeping (Example: roll paper end, and during status sheet printing.)

The following beeping tones and timing can be specified by n.

n	Tone
48	doesn’t beep
49	1280Hz: 1000ms beeping
50	4100Hz: 1000ms beeping
51	1280Hz: 200ms beeping
52	4100Hz: 200ms beeping
53	1280Hz: 200ms beeping -> 200ms off -> 200ms beeping
54	4100Hz: 200ms beeping -> 200ms off -> 200ms beeping
55	1280Hz: 500ms beeping

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n	Tone
56	4100Hz: 500ms beeping
57	1280Hz: 200ms beeping -> 200ms off -> 200ms beeping -> 200ms off -> 200ms beeping
58	4100Hz: 200ms beeping -> 200ms off -> 200ms beeping -> 200ms off -> 200ms beeping

TM-U230

The printer does not support this function.

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ESC (A *pL pH fn n c t1 t2* <Function 97 > (TM-U230)

[Name]	Beep integrated beeper in TM-U230 models
[Format]	ASCII ESC (A pL pH fn n c t1 t2 Hex 1B 28 41 05 00 61 64 c t1 t2 Decimal 27 40 65 5 0 97 100 c t1 t2
[Range]	$(pL + pH \times 256) = 5$ ($pL = 5, pH = 0$) $fn = 97$ $n = 100$ $0 \leq c \leq 63$ $0 \leq t1 \leq 255$ $0 \leq t2 \leq 255$
[Description]	Beeps the integrated beeper. <ul style="list-style-type: none">• c specifies times of beeping.• t1 specifies beeping time (t1 × 100 ms).• t2 specifies time for stop beeping (t2 × 100 ms).
[Notes]	<ul style="list-style-type: none">■ This function repeats integrated beeper control of [(t1 × 100 ms) beep/ (t2 × 100 ms) stop] c times.■ If this command is newly processed during beeping of the buzzer, the current process for beeping the buzzer is stopped and the new process for beeping the buzzer is started.■ Integrated beeper beeping by this function stops due to any of the following factors.<ul style="list-style-type: none">• Finish specification of (c).• Offline factor specified by Function 98 has occurred.• Factors specified by Function 99 have occurred.• Reset or power off.

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ESC (A *pL pH fn n c* <Function 97 > (TM-T88V, TM-T20)

[Name] Sound buzzer in **TM-T88V**, **TM-T20** models (registered sound pattern specified) (optional external buzzer)

[Format] ASCII ESC (A **pL pH fn n c**
Hex 1B 28 41 **pL pH fn n c**
Decimal 27 40 65 **pL pH fn n c**

[Range] (**pL** + **pH** × 256) = 3 (**pL** = 3, **pH** = 0)
fn = 97
1 ≤ **n** ≤ 7
0 ≤ **c** ≤ 255

[Description] Sounds a pattern specified by **n** the number of times specified by **c**.

n	Pattern
1	Pattern A
2	Pattern B
3	Pattern C
4	Pattern D
5	Pattern E
6	Pattern for error
7	Pattern for paper-end

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- When the buzzer has stopped sounding, the printer transmits the buzzer sound end response as shown below to the host.

Buzzer sound end response	Hex	Decimal	Data quantity
Header	37H	55	1 byte
Identifier	54H	84	1 byte
Data	30H	48	1 byte
NUL	00H	0	1 byte

[Notes]

- When **c** = 0, repeats a sound pattern specified by **n** infinitely.
- The printer is offline during sounding.
- If the cover is opened during sounding and a sound stop is requested by **DLE DC4** <Function 3>, the sound stops.

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ESC (A *pL pH fn a b n c t1 t2* <Function 98 > (TM-U230)

[Name]	Set integrated beeper when offline factors occur in TM-U230 models
[Format]	ASCII ESC (A pL pH fn a b n c t1 t2 Hex 1B 28 41 07 00 62 a 01 64 c t1 t2 Decimal 27 40 65 7 0 98 a 1 100 c t1 t2
[Range]	$(pL + pH \times 256) = 7$ (pL = 7, pH = 0) fn = 98 $48 \leq a \leq 51$ b = 1 n = 100 c = 0, 255 $1 \leq t1 \leq 50$, t1 = 255 $1 \leq t2 \leq 50$
[Default]	No paper printing stops (a = 49): Beeps the integrated beeper (select sound variation by DIP switch [SW2-5]). Except above (a = 48, 50, 51): Does not beep the integrated beeper.
[Description]	Set the integrated beeper control when specified offline is occurred. <ul style="list-style-type: none">a specifies the offline factor.

a	Offline factor
48	Cover open.
49	Printing stop when there is no paper.
50	Recoverable error occur.
51	Unrecoverable error occur.

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- **c** specifies the beeps integrated beeper/ not beeps integrated beeper when specified offline is occurred.

c	Beeping method
0	Beeps integrated beeper
255	Does not beep the integrated beeper

- $1 \leq \mathbf{t1} \leq 50$ specify beeping time ($\mathbf{t1} \times 100$ ms).
 $\mathbf{t1} = 255$ specify beeping time (infinity).
- $\mathbf{t2}$ specify time for stop beeping ($\mathbf{t2} \times 100$ ms).

- [Notes]
- This function repeats integrated beeper control of [$(\mathbf{t1} \times 100$ ms) beep/ ($\mathbf{t2} \times 100$ ms) stop] when offline factors have occurred. However, ($\mathbf{t1} = 255$) causes continuous beeping.
 - When the printer is offline, the integrated beeper will stops under any of the following conditions:
 - The offline factor is cleared.
 - The FEED switch is pressed.
 - Reset or power off.
 - Setting of this function is enabled until reset or power off.

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ESC (A *p_L* *p_H* *f_n* *a* *b* *n* *c* *t₁* *t₂* <Function 99 > (TM-U230)

[Name]	Set integrated beeper except when offline factors occur in TM-U230 models
[Format]	ASCII ESC (A p_L p_H f_n a b n c t₁ t₂ Hex 1B 28 41 07 00 63 30 01 64 c t₁ t₂ Decimal 27 40 65 7 0 99 48 1 100 c t₁ t₂
[Range]	$(p_L + p_H \times 256) = 7$ ($p_L = 7, p_H = 0$) f_n = 99 a = 48 b = 1 n = 100 c = 0, 255 $1 \leq t_1 \leq 50, t_1 = 255$ $1 \leq t_2 \leq 50$
[Default]	Beeps the integrated beeper (select sound variation by DIP switch [SW2-5]).
[Description]	Sets the integrated beeper control when roll paper near end detector detects [No roll paper]. <ul style="list-style-type: none">• When roll paper near end detector detects [No roll paper], $1 \leq t_1 \leq 50$ specifies beeping time ($t_1 \times 100$ms). t₁ = 255 specifies beeping time (infinity).• t₂ specifies time for stop beeping ($t_2 \times 100$ms).
[Notes]	<ul style="list-style-type: none">■ This function repeats integrated beeper control of [$(t_1 \times 100$ ms) beep/ ($t_2 \times 100$ ms) stop] when the roll paper near end detector detects a paper-end. However, when (t₁ = 255) continuous beeping occurs.■ If roll paper detector is selected to stop printing when there is no paper, when the detector detects no roll paper and goes offline, the setting of this function is disabled.■ When there is no roll paper, the integrated beeper can be stopped by any of the following:<ul style="list-style-type: none">• Clear the factor.• Press FEED switch.• Offline factor specified by Function 98 occurs.

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- Process the [integrated beeper stop ($\mathbf{c} = 0$)] in this function.
- Reset or turn off power.
- Setting of this function is enabled until reset or power off.