



DT-X400 Series

Android 8.1 Software Manual

This manual describes the DT-X400 software and specifications of the installed application.

Cautions!
"Phone", "SIM", "GPS" described in this document applies only to models with telephone functions.



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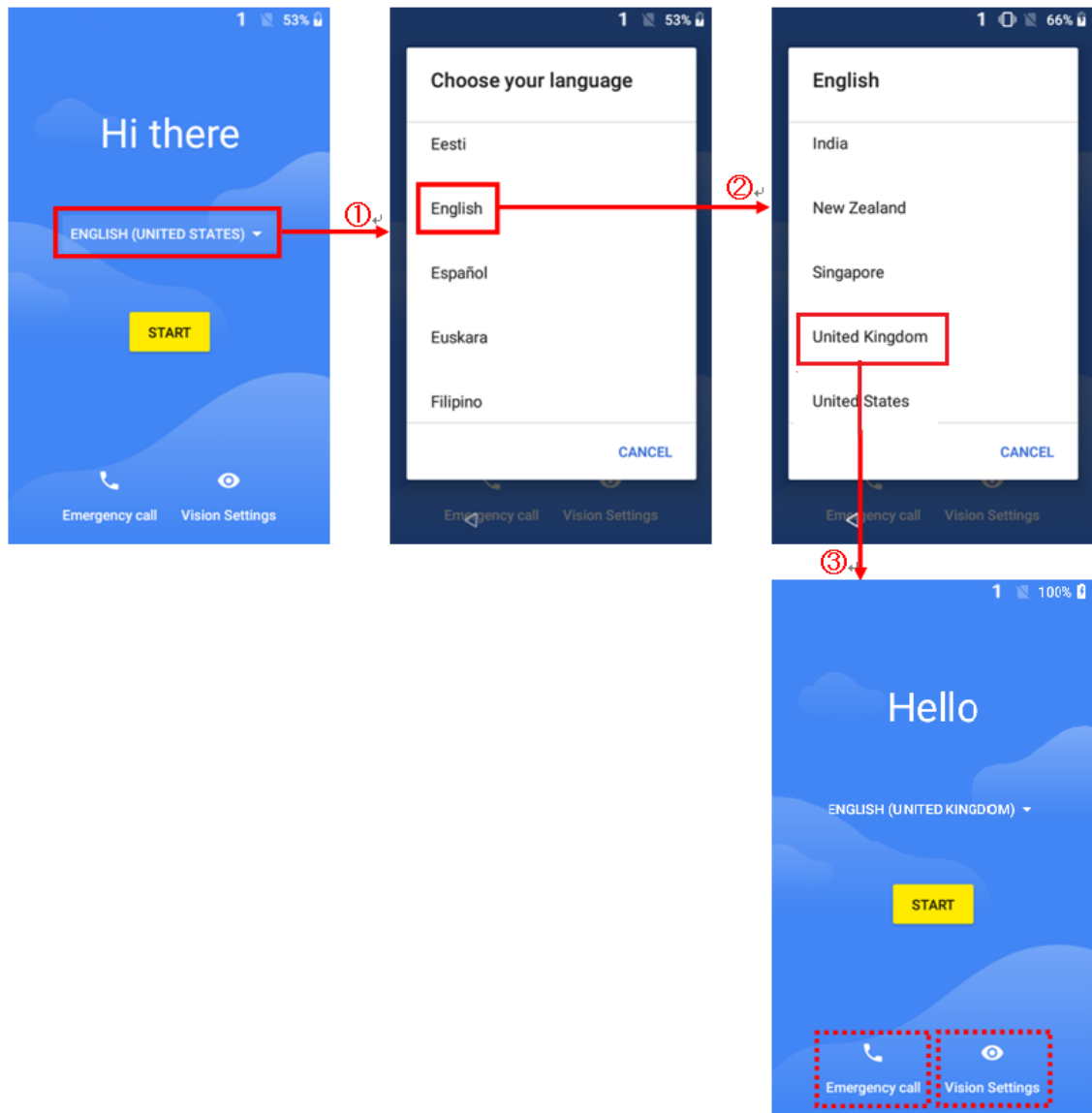
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1. Introduction

In the factory default state, the language selection screen is displayed in English (UNITED STATES).



When ① is pressed, a list of selectable languages is displayed, so select the language to use. This ensures that the initial settings after that will be displayed in the language selected.

Cautions!

Emergency call button in the above figure is displayed only with the model with the phone function.

"Phone", "SIM", "GPS" and "Mobile Network" described on this document apply only to models with telephone functions.

When Vision Settings is pressed, you can customize this device to fit your needs. These accessibility features can be changed later in Settings.

2. Basic Functions

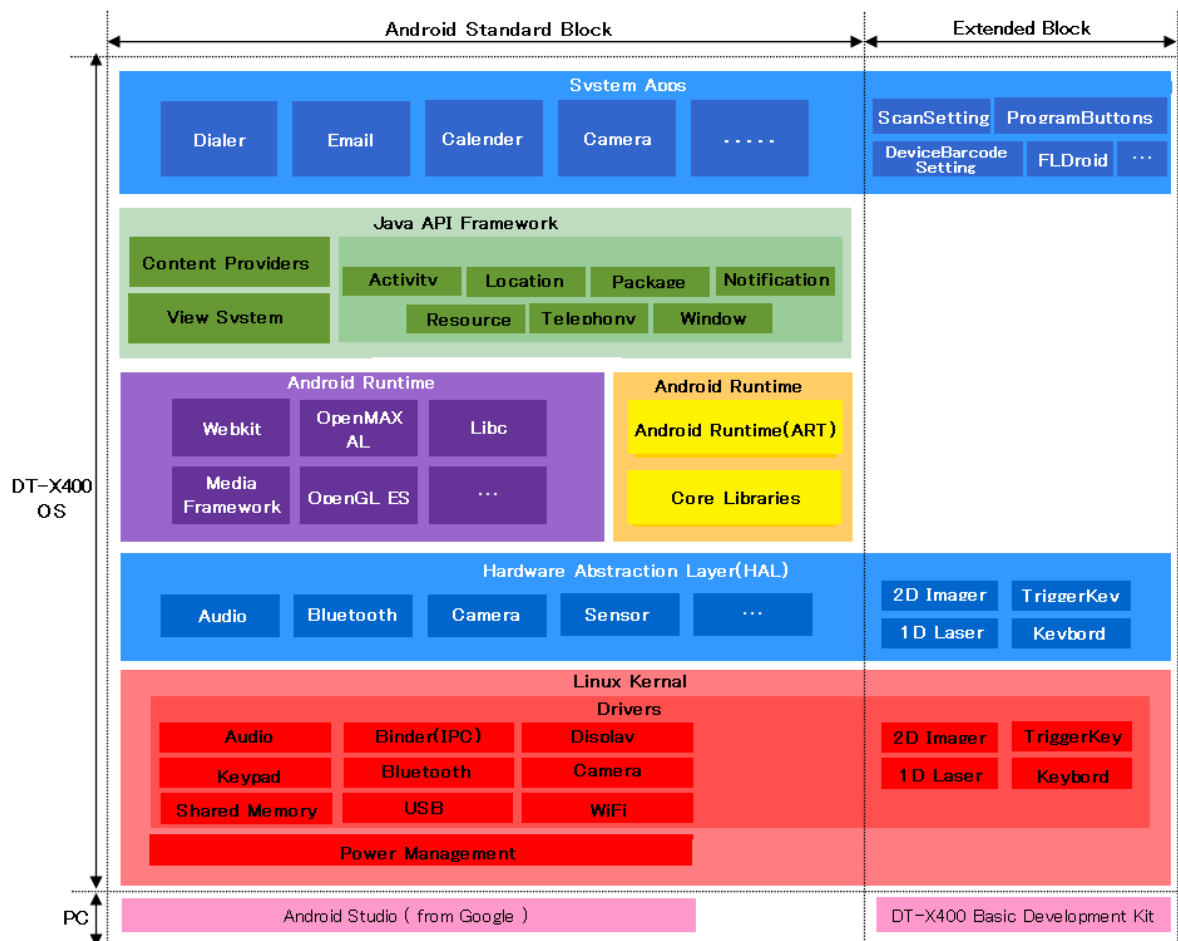
2.1 Android 8.1

DT-X400 is equipped with Android 8.1.

2.1.1 Software Architecture

The software architecture of the DT-X400 is shown below. DT-X400 has CASIO extended functions for business such as barcode scanner and trigger key, in addition to Android standard function.

Applications that use the Android standard function can be developed with Android Studio (Android SDK). And controlling the CASIO extended function, use "DT-X400 Basic Development Kit".



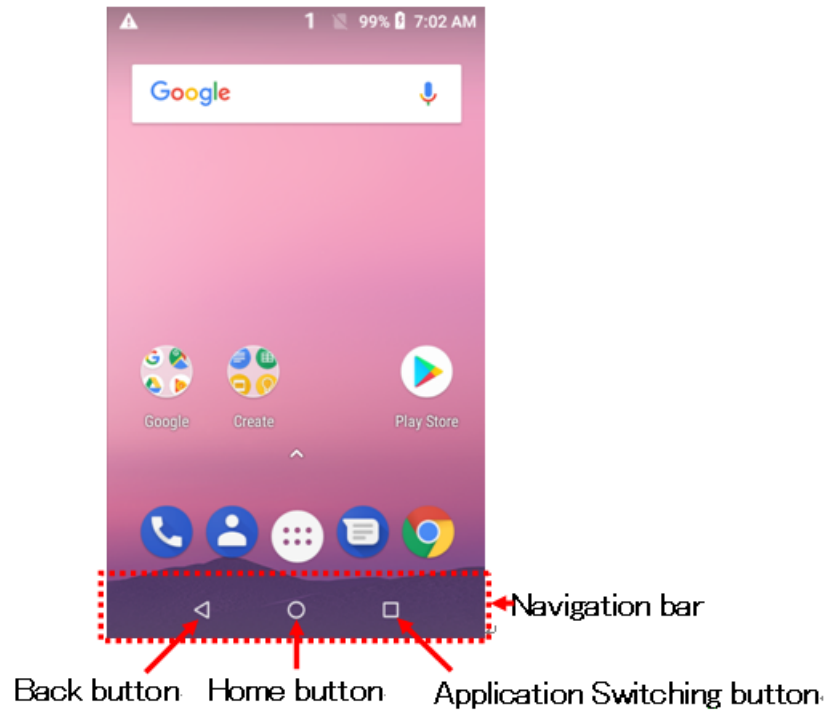
2.1.2 Languages

DT-X400 supports these languages.

Afrikaans	Hausa	Koyraboro senni	Shqip	ئۇيغۇرچە
Aghem	Hibena	Kreol morisien	Shwónḡò ngiemboon	اردو
Akan	Hornjoserbšćina	Kyivunjo	Slovenčina	اوزبیک (عربی)
Anarâškielâ	Hrvatski	Lakǰól'iyapi	Slovenščina	پښتو
Azərbaycan (latin)	‘Ōlelo Hawai‘i	Latviešu	Soomaali	پنجابی (عربی)
Bahasa Melayu	Ichibemba	Lea fakatonga	Srpski (latinica)	العربية
Bamanakan	Igbo	Lëtzebuergesch	Suomi	فارسی
Bosanski (latinica)	Ikirundi	Lietuvių	Svenska	مازرونی
Brezhoneg	Indonesia	Lingála	Tamaziyt n laṭlaṣ	ተ.ፎ.ጵጰፋተ
Bàsàà	Ishisangu	Luganda	Taqbaylit	አማርኛ
Català	IsiNdebele	Luluhia	Tasawaq senni	कोंकणी
Čeština	IsiZulu	Maa	Thok Nath	नेपाली
Chimakonde	Íslenska	Magyar	Tiếng Việt	বঙো
ChiShona	Italiano	Makua	Tshiluba	मराठी
Cymraeg	Joola	Malagasy	Türkçe	हिन्दी
Dansk	Kabuverdianu	Malti	Walser	অসমীয়া
Davvisámegiella	Kako	Meta’	West-Frysk	বাংলা
Deutsch	Kalaallisut	Nda'a	Zarmaciine	ਪੰਜਾਬੀ (ਗੁਰਮੁਖੀ)
Dholuo	Kalenjin	Nederlands	Ελληνικά	ગુજરાતી
Dolnoserbšćina	Kernewek	Norsk bokmål	Азәрбајҹан (Кирил)	ଓଡ଼ିଆ
Duálá	Khoekhoegowab	Nuasue	Беларуская	தமிழ்
Èdè Yorùbá	Kĩembu	Nynorsk	Босански (Ћирилица)	தெலுగు
Ekegusii	Kihorombo	O‘zbek (lotin)	Български	ಕನ್ನಡ
English	Kikamba	Olusoga	Ирон	മലയാളം
Español	Kimachame	Oromoo	Кыргызча	සිංහල
Euskara	Kĩmĩrũ	Polski	Қазақ тілі	ไทย
Ewegbe	Kinyarwanda	Português	Македонски	ລາວ
Ewondo	Kipare	Pulaar	Монгол	བོད་སྐད་
Filipino	Kiruwa	Rikpa	Нохчийн	ཨྲཱུཾ
Føroyskt	Kisampur	Română	Русский	မြန်မာ
Français	Kishambaa	Rukiga	Саха тыла	ខ្មែរ
Furlan	Kiswahili	Rumantsch	Српски (ћирилица)	СВУ
Gaeilge	Kitaita	Runasimi	Ўзбекча (Кирил)	한국어
Gaelg	Kiteso	Runyankore	Українська	ᱥᱟᱱᱛᱟᱲ
Gàidhlig	Khaangi	Sängö	ქართული	简体中文
Galego	Kölsch	Schwiizertüütsch	Հայերեն	粵語
Gikuyu	Koyra ciini	Sena	עברית	繁體中文
				日本語 (日本)

2.1.3 Navigation bar

The area displaying navigation buttons (back button, home button, application switching button) is called the Navigation bar. The DT-X400 displays a navigation bar at the bottom of the screen like a smartphone.

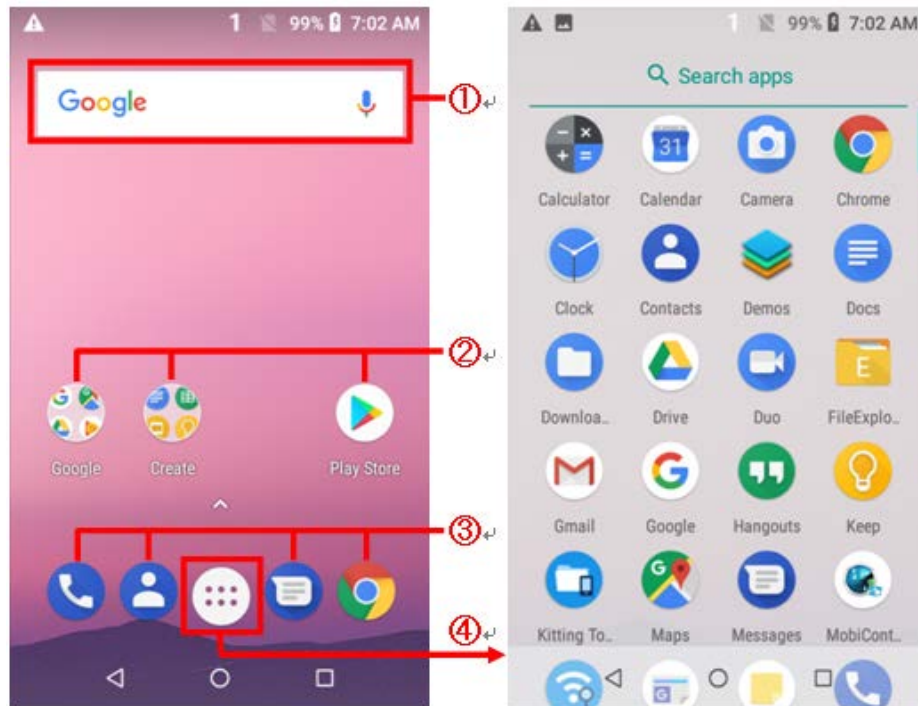


Button	Function
	Back button Touch to go back to the previous screen, or to close a dialog box, options menu, the notification panel, etc.
	Home button From any application or screen, touch to return to the Home screen. Touch and hold to open "Now on Tap".
	Application Switching button Touch to switch to the recent used applications.

2.1.4 Home screen

When turn on the Android phone, the lock screen will be displayed. Sliding this lock screen will bring up the home screen for selecting and starting the application. Also, move to the Home screen by pressing Home button.

The program responsible for processing the home screen is called as "home application", or the "launcher".



- ① Search panel
- ② Shortcut
- ③ Favorite tray
- ④ Application list

2.1.5 Status bar and icons

A bar with icons at the top of the screen is called a status bar. The status bar displays various "Status icons" indicating the status of the system, and "Notification icon" for notify the operator, and "Key input mode" indicates the input mode of hardware keyboard.














- ① Notification icons
- ② Status icons
- ③ Input mode

The following is a part of the icon displayed on DT-X400. Icons related to the phone function displays only on the WAN models.





Status icons

	GPRS connected		Battery is low
	EDGE connected		Battery is very low
	3G connected		GPS is on
	LTE connected		Alarm is set
	No signal		Bluetooth is on
	Signal strength		Connected to a Bluetooth device
	Roaming		Speakerphone is on
	WLAN connected		Headset connected
	Airplane mode		No SIM card inserted
	Battery is charging		Vibrate mode / Mute
	Battery is full		Microphone is mute
	Battery is partially drained		Barcode scanner is enable
			LAN is connected

Notification icons

	New Gmail™ message		Missed call
	New Email message		Connected to VPN
	New text or multimedia message		More notifications are hidden
	Problem with SMS or MMS delivery		microSD is mounted
	New Google Hangouts™ message		FLDroid is running
	Android Setup is not finished		

Input mode

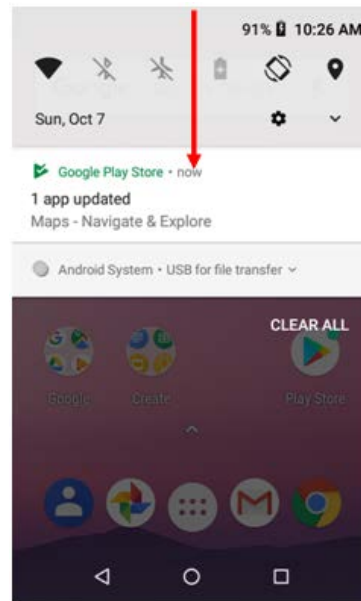
	Numerical input mode
	Alphabet input mode (uppercase)
	Alphabet input mode (lowercase)
	Fn mode

2.1.6 Notification panel and Quick setting panel

Drag the status bar downward to open the notification panel. Drag further downward in this state to open the quick setting panel.

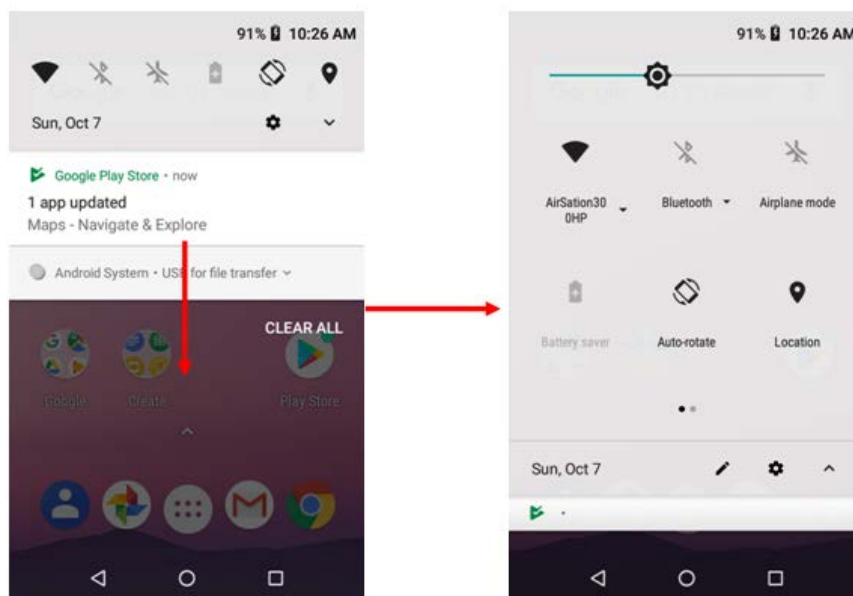
Notification panel

Notification panel uses to read details of the notification. Touch the status bar and drag it downward to open it.



Quick setting panel

Quick setting panel provides easy access to settings. Touch the notification panel and drag downward to open the quick setting panel. By touching the icon displayed on the quick setting panel, you can enable / disable the function and change the mode.



2.1.7 Media format

DT-X400 carries all encoders and decoders supported by Android.

Audio

Supported audio encoders and decoders are as follows.

Format	Encoder	Decoder	Container Formats
AAC LC	○	○	3GPP (.3gp) MPEG-4 (.mp4, .m4a) ADTS raw AAC (.aac) MPEG-TS (.ts)
HE-AACv1 (AAC+)	○	○	
HE-AACv2 (enhanced AAC+)		○	
AAC ELD (enhanced low delay AAC)	○	○	
AMR-NB	○	○	3GPP (.3gp)
AMR-WB	○	○	3GPP (.3gp)
FLAC	○	○	FLAC (.flac) only
GSM		○	GSM(.gsm)
MIDI		○	Type 0 and 1 (.mid, .xmf, .mxmf) RTTTL/RTX (.rtttl, .rtx) OTA (.ota) iMelody (.imy)
MP3		○	MP3 (.mp3)
Opus		○	Matroska (.mkv)
PCM/WAVE	○	○	WAVE (.wav)
Vorbis		○	Ogg (.ogg) Matroska (.mkv)

Libraries related to this function are as follows. For details of the Android standard library, refer Android official website such as "Android Developers".

Android Standard library

android.media

This class provides various interfaces related to audio and video.

android.media.MediaPlayer

This class plays audio / video / still images.

Image

Encoders and decoders of supported images are as follows.

Format	Encoder	Decoder	Container Formats
BMP		○	BMP (.bmp)
GIF		○	GIF (.gif)
JPEG	○	○	JPEG (.jpg)
PNG	○	○	PNG (.png)
WebP	○	○	WebP (.webp)
HEIF		○	HEIF (.heic, .heif)

Libraries related to this function are as follows. For details of the Android standard library, refer Android official website such as "Android Developers".

Android standard library

android.media

This class provides various interfaces related to audio and video.

android.media.MediaPlayer

This class plays audio / video / still images.

Video

Encoders and decoders of supported videos are as follows.

Format	Encoder	Decoder	Container Formats
H.263	○	○	3GPP (.3gp) MPEG-4 (.mp4)
H.264 AVC Baseline Profile (BP)	○	○	3GPP (.3gp) MPEG-4 (.mp4) MPEG-TS (.ts)
H.264 AVC Main Profile (MP)	○	○	
H.265 HEVC		○	MPEG-4 (.mp4)
MPEG-4 SP		○	3GPP (.3gp)
VP8	○	○	WebM (.webm) Matroska (.mkv)
VP9		○	WebM (.webm) Matroska (.mkv)

Libraries related to this function are as follows. For details of the Android standard library, refer Android official website such as "Android Developers".

Android standard library

android.media

This class provides various interfaces related to audio and video.

android.media.MediaPlayer

This class plays audio / video / still images.

android.widget.VideoView

This class plays video.

2.2 Power management

2.2.1 Power status

DT-X400 has following power states. The change of state from 5 to 1 is called "BOOT", and the state change from 3, 4, 2 to 1 is called "RESUME".

No	State	Display	RAM	CPU	Description
1	ON	ON	ON	ON	Terminal is in operation
2	Early suspend	OFF	ON	ON	Only the screen is OFF.
3	Suspend (Sleep)	OFF	ON	OFF	Nearly all devices except RAM are in OFF state. OS and applications remain in RAM, but application programs are stopped except some.
4	Hot Swap ※1	OFF	ON	OFF	Ultra low power consumption mode prepared for replacing the battery pack.
5	OFF (Shutdown)	OFF	OFF	OFF	All devices are in the OFF state.

※1 For the detail, refer "2.2.4 Hot swap (p.15)".

2.2.2 Suspend and Resume

When the device is in ON state, short pressing power key suspends the device.

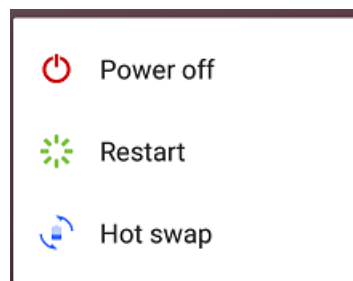
Conversely, when the device is in Suspend or Early Suspend state, pressing immediately power key resumes the device.

This suspend behavior can be disabled by using 'Casio Android Add-ons'. For detail, refer 'Casio Android Add-ons Manual'.

2.2.3 Power on / Turn off

When the device is in the OFF state, to turn it on, power key must be pressed for several seconds.

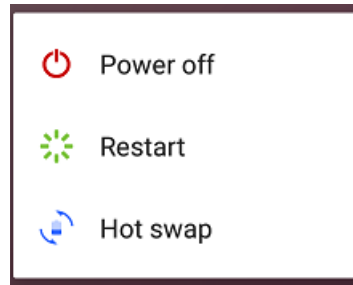
Press and hold the power key for 1 second, then power menu pops up. If select "Power off", it goes into OFF (Shutdown) state. Also, this operation is called as "Shutdown".



2.2.4 Hot swap

Many smartphones in recent years can not exchange batteries to realize small size and lightweight. DT-X400 is compatible with battery replacement in preparation for lower battery during work. Also, DT-X400 implements Hot swap function to reduce the time of battery exchange.

Press and hold the power key for 1 second, then power menu pops up.

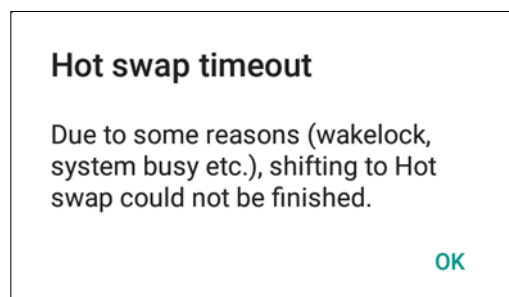


When "Hot Swap" is selected, the LED will light red and begin preparing of battery exchange. When the preparation is completed, the red LED goes out. Confirm that the red LED is off and replace the battery.

In the hot swapped state, the power key is disabled (If push the power key, the red LED blinks, does not work resume). This is to avoid accidentally resuming the operation during battery exchange. The disabled state of the power key is canceled by reattaching the battery cover. After replacing the battery and attach the battery cover, short press the power button to return ON state, so you can return to work in a short time.

Cautions!

Some conditions may fail hot swap. For example, if the transition to the hot swap state is blocked for 90 seconds due to the occupation of system resources by the application, migration to hot swap fails with the following error message.

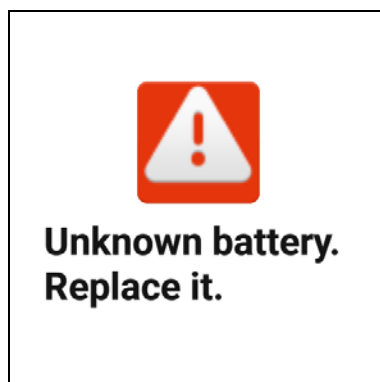


Do not remove the SIM card or microSD card in the Hot Swap state. In case the SIM card needs to be removed, shutdown the device first.

If remove the battery erroneously while the power is on, DT-X400 will try to enter hot swap. If the backup battery is not charged enough, the hot swap may fail. At that time, it will be in the shutdown state and will restart the next time the power is turned on.

2.2.5 Battery fault detection

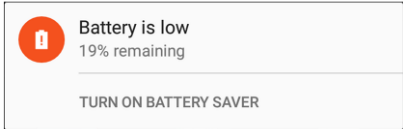
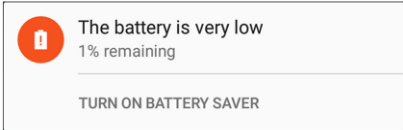
If detected the abnormal condition of the battery, the following message will be displayed. Please replace the battery.









2.2.6 Remaining battery level and Operation restriction

The table below summarizes the relationship between remaining battery level, notification, and operation restriction.

For example, if the remaining battery level is 20% or less, "the battery level is low" notification is issued. When the battery level drops below 10%, the LED will change to blinking orange. Also, a notification of "The battery is very low" is issued and LED lights and cameras are disabled.

Remaining battery level	Status	Notification (LED)	Notification (Notification)	Operation restriction
100%	Full charge	Lit green	none	none
99% - 21%	Regular use	OFF	none	none
20% - 11%	Battery low warning (Low)	OFF		none
10% -	Very low warning (Critical)	Blinking orange		LED flashlight and Camera Flash are restricted to use
11% - 100%	Charging (Over Critical)	Lit orange	none	none
- 10%	Charging (Critical)	Blinking orange	none	LED flashlight and Camera Flash are restricted to use

The table below summarizes the relationship between remaining battery level and battery icon.

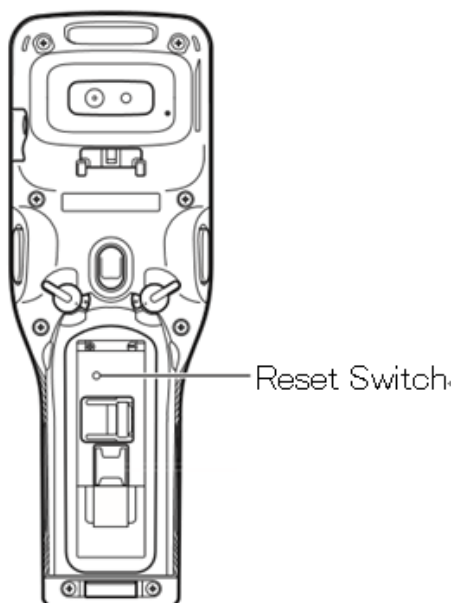
Remaining battery level	Icon
100% - 16%	
15% - 11%	
10% -	
Unknown	
Charginig (32% - 100%)	
Charging (- 31%)	

2.2.7 Reset and Restart

Please try reset (restart) when DT-X400 stops functioning properly due to an erroneous operation etc. There are three ways to reset the DT-X400.

Resetting with the reset switch can cause inconsistency of the file. Therefore, if you want to restart the terminal, recommend that try 1 first. If DT-X400 still does not restart, please try 2 and finally 3.

1. Press the power key for 1 second and select "Restart" from the pop-up power menu.
2. Press and hold the power key for 12 seconds.
3. Press the reset switch.



2.3 Storage management

2.3.1 Partition

DT-X400 has a 16GB eMMC (Embedded MultiMediaCard).

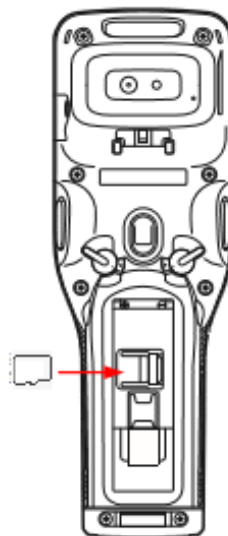
The inside of the eMMC is divided into a boot area to be used at booting, a system area used by the OS, and a user area to be used as Internal Storage.

boot area: Approx. 100MB
System area: Approx. 6GB
User area: Approx. 9GB

2.3.2 External storage

microSD Card

A microSD card can be used as an external storage. It supports microSD and microSDHC. Transfer speed is up to CLASS 10.

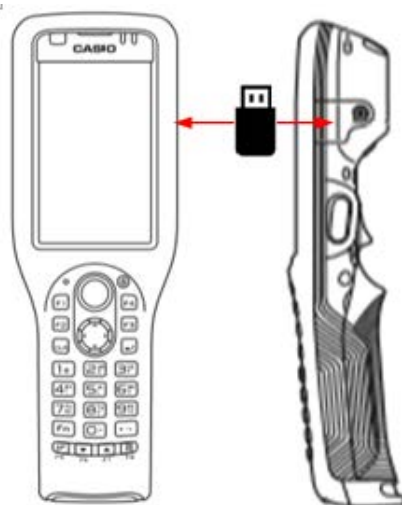


Be sure to insert / remove a microSD card in shutdown state (refer to "2.2.3 Power on / Turn off (p.14)"). Insert it with the contact terminal face down.
When removing, follow the procedure below.


- ① Unmount by [Unmount SD card] from [Settings] -> [Storage]
- ② Change to shutdown state
- ③ Remove battery and remove the microSD card

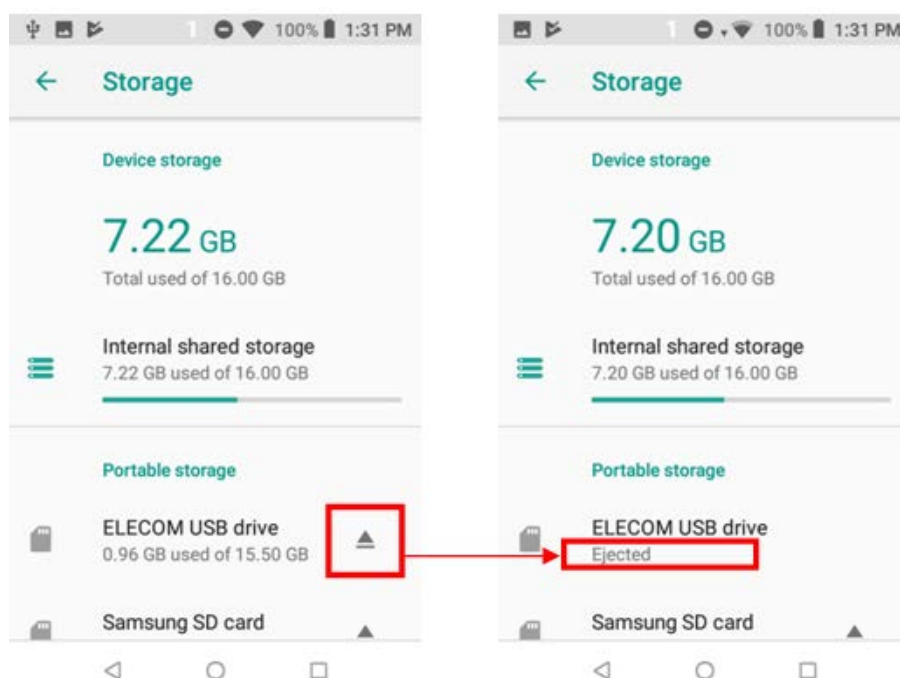
USB Memory

A USB Memory (USB typeC) can be used as an external storage.



When removing, follow the procedure below.

- ① Push  to start remove by [USB device] from [Settings] -> [Storage]
- ② When the screen of the right appears, the USB Memory can be removed



Cautions!

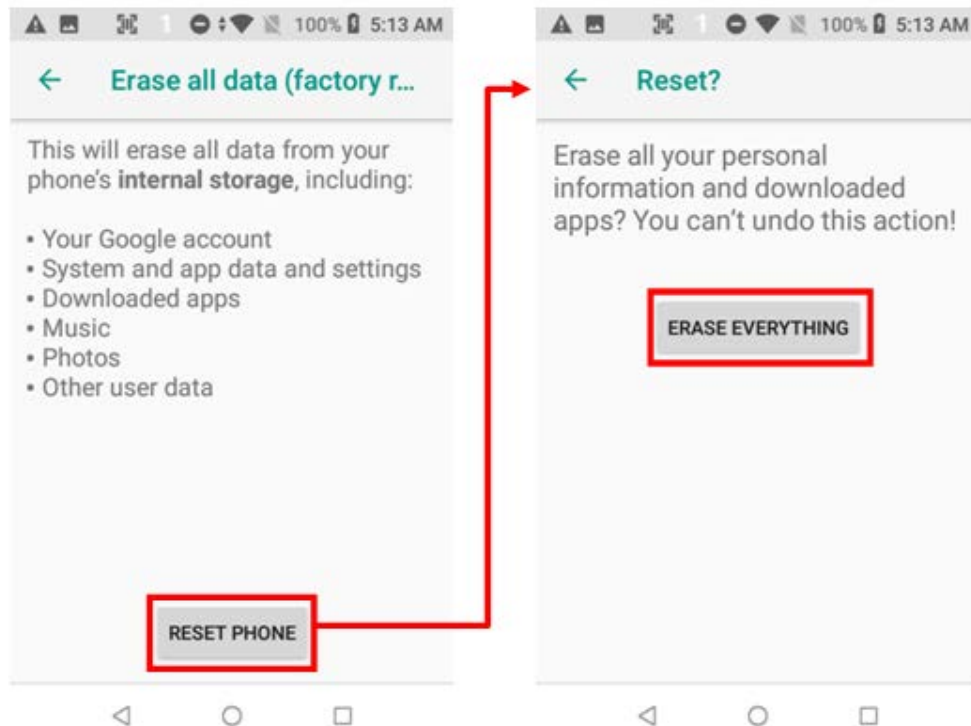
If you use a USB Memory with DT-X400 placed on the cradle, change the USB connection mode to Side USB port only mode. (2.15 USB (p.44))

2.3.3 Strage specification

Mount point	Storage
/storage/emulated/0	Internal storage
/storage/sdcard1	microSD card
/storage/usbotg	USB Memory

2.4 Factory reset

To initialize the DT-X400, use [Setup] -> [Reset option] -> [Erase all data].



Since this operation erases all data in the terminal, please be careful not to accidentally erase important data.

Cautions!

When reset the device, the calendar will also be reset on January 1st. However, the year of that depends on the timing of reset, and it does not necessarily become a fixed value.

2.5 Display

2.5.1 Hardware specification

Type	TFT
LCD Size	3.2 inch
number of dots	W 480 x H 800
Dot pitch	W 0.087 mm x H 0.087 mm
Color	16 M Colors
Backlight	LED backlight



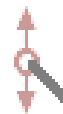

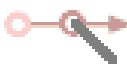
2.5.2 How to detect the resolution

To obtain the screen resolution from the application program, use DisplayMetrics. For details of the Android DisplayMetrics, refer Android official website such as "Android Developers".

```
DisplayMetrics metrics = new DisplayMetrics();  
getWindowManager().getDefaultDisplay().getMetrics(metrics);
```

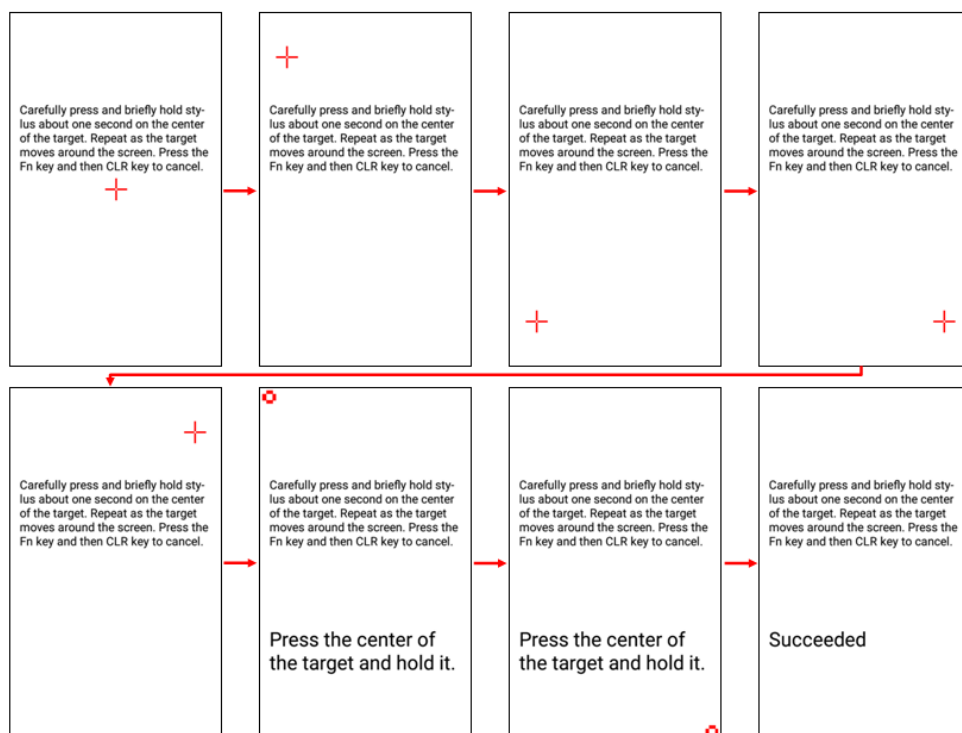

2.6 Touch panel

DT-X400 equips with a pressure sensitive touch panel. Define terms related to touch panel operation as follows.

	It means touching the screen. Used to access the application.
	It means to keep touching the screen.
	It means moving from the touch state while touching the screen. It is used to scroll application screens, images, WEB pages, etc. (Slide operation for releasing the lock screen is especially called swipe.) The device also supports one finger zoom (Messaging, Browser, Email, Camera and Gallery) by double tapping the screen then sliding with one finger to zoom in/out).
	It means moving from the touch and hold state while touching the screen. Use it to move the object to another position by moving it while it is in contact.
	It means moving quickly away from the screen from the state of the touch.

2.6.1 Touchpanel Calibration

Touch panel calibration is an application to correct deviation of input position due to individual variation of touch panel etc. Touch panel calibration can be started by turning on the power for the first time or by pressing **Fn** + **4^{GH}** (in Fn mode).



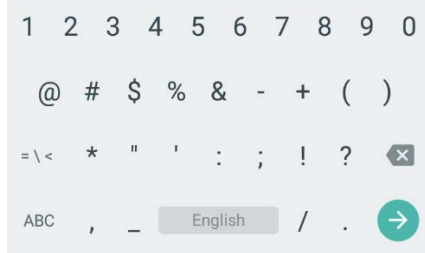
2.7 Keyboard

2.7.1 Software Keyboard

Software keyboard is what Android 8.1 standard supports.



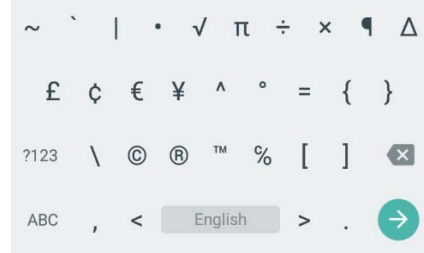
Alphabet input pad (uppercase)



Numerical input pad



Alphabet input pad (lowercase)



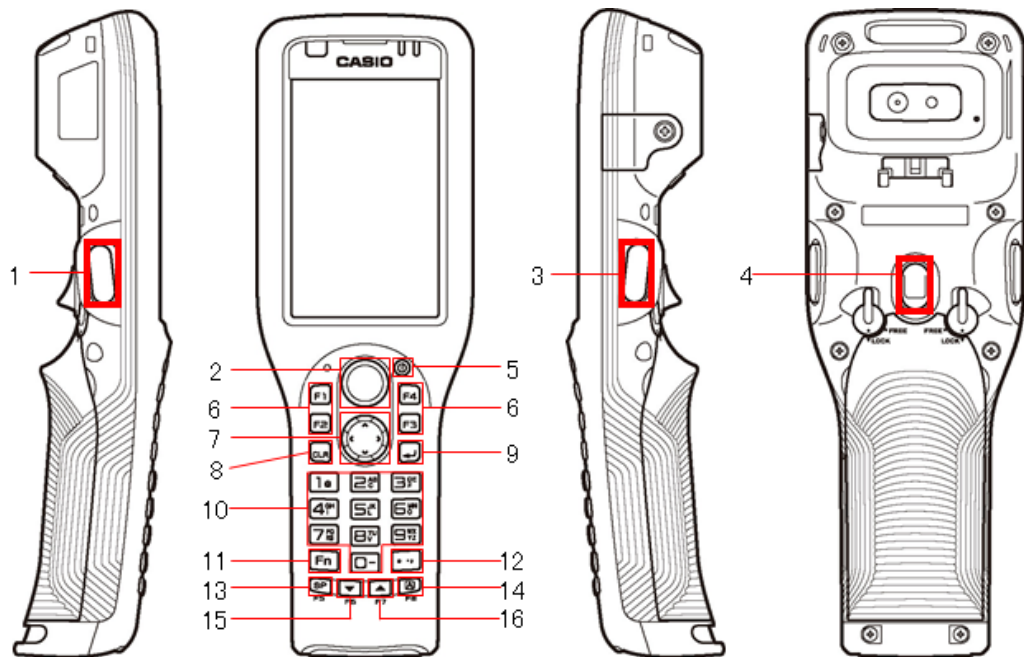
Symbol input pad

2.7.2 Hardware Keyboard

DT - X400 has a hardware keyboard that is not installed on a typical smartphone. Hereafter, the "hardware keyboard" is written as "keyboard".

Keyboard layout and Key name

Keyboard layout and Key name are as follows.



番号	キー	機能
1	Left Trigger Key	Start scanning a barcode by barcode scanner (Function as shutter when camera is activated)
2	Center Trigger Key	
3	Right Trigger Key	
4	Back Trigger Key	
5	Power Key	Function changes per press time Short press (less than 1sec): Display on/off Long press (1sec): Pop-up power menu Long press (12sec): Reset Press with Volume down key: Screen shot
6	Function Key	Function Key action
7	Cursor Key	Move cursor
8	CLR Key	Backspace
9	Enter Key	Confirm input
10	Numeric Key	Input numeric/alphabet/symbol
11	Fn Key	Change Fn mode
12	Period Key	Input period/symbol
13	SP Key	Input space
14	Mode Key	Change input mode
15	Volume down Key	Volume down (Function as shutter when camera is activated)
16	Volume up Key	Volume up (Function as shutter when camera is activated)

Input mode

The input mode is for switching inputable characters. The input mode has "Numerical mode" for entering numbers, "Alphabet mode (uppercase)" for entering uppercase letters, and "Alphabet mode (lowercase)" for entering lowercase letters.

Also, to improve maintainability and usability, Fn mode is provided, it is possible to activate calibration for touch panel correction, turn on / off keyboard backlight, etc.

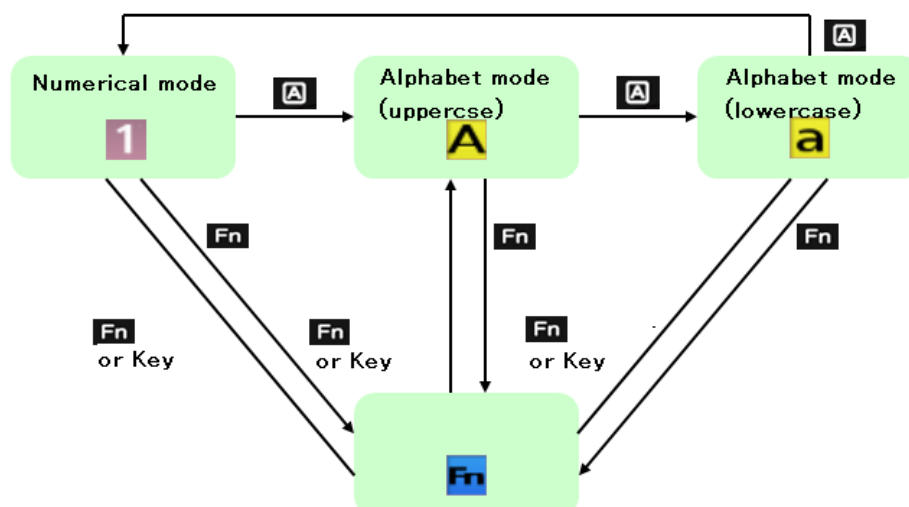
Display of Input mode

The current input mode is displayed in the status bar as shown below.



Transition of Input mode

The input mode switches each time **[A]** is pressed. And press **[Fn]** to switch to Fn mode. In Fn mode, press **[Fn]** or press another key to execute Fn mode processing and return to the original mode.



Key repeat

When the input mode is in Alphabet mode (uppercase) or Alphabet mode (lowercase) mode, each time you press the same key (numeric key or period key), the input characters will change.

e.g.) Pressing **[2^{AB}/_c]** repeatedly in Alphabet mode (uppercase) switches the characters to be entered as shown below.



Input Control

That the characters to be entered or the processing to be performed when pressing a key are as follows.

Numerical mode

Key	Character/Process	Key	Character/Process
	F1		4
	F2		5
	F3		6
	F4		7
	↑ (Cursor Key)		8
	← (Cursor Key)		9
	↓ (Cursor Key)		Switch toFn mode
	→ (Cursor Key)		0
	Back space		.
	Enter Key		Space
	1		Volume Down
	2		Volume Up
	3		Switch to Alphabet mode (uppercase)

Alphabet mode (uppercase)

Key	Character/Process	Key	Character/Process
	F1		GHI
	F2		JKL
	F3		MNO
	F4		PQRS
	↑ (Cursor Key)		TUV
	← (Cursor Key)		WXYZ
	↓ (Cursor Key)		Switch toFn mode
	→ (Cursor Key))		- * # _ / ^ ¥ & = + \$ % space backslash
	Back space		. , " ' ` : ; ~
	Enter Key		Space
	@ ? ! () < > [] { }		Volume Down
	ABC		Volume Up
	DEF		Switch to Alphabet mode (lowercase)

Alphabet mode (lowercase)

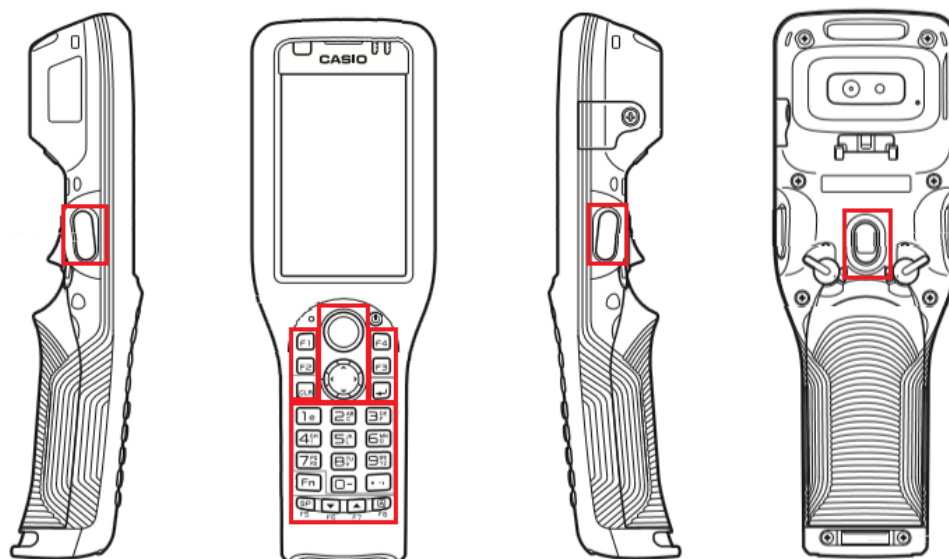
Key	Character/Process	Key	Character/Process
	F1		ghi
	F2		jkl
	F3		mno
	F4		pqrs
	↑ (Cursor Key)		tuv
	← (Cursor Key)		wxyz
	↓ (Cursor Key)		Switch toFn mode
	→ (Cursor Key)		- * # _ / ^ ¥ & = + \$ % space backslash
	Back space		. , " ' ` : ; ~
	Enter Key		Space
	@ ? ! () < > [] { }		Volume Down
	abc		Volume Up
	def		Switch to Numerical mode

Fn mode

Key	Character/Process	Key	Character/Process
	F9		Touchpanel Calibration
	F10		LCD Backlight Down
	F11		LCD Backlight Up
	F12		nop
	↑ (Cursor Key)		nop
	← (Cursor Key)		nop
	↓ (Cursor Key)		Back to mode
	→ (Cursor Key)		Display SIP
	ESC		Key Backlight ON/OFF
	nop		F5
	nop		F6
	nop		F7
	nop		F8

Key code setting

The key code generated when the key is pressed can be changed to arbitrary key code or arbitrary launch application. To change the key code, use the program button (6.1.1 Program Buttons(p.88)) or the Devicecontrol library.



Configurable Keys.

(Includes left and right trigger key and back trigger key)

Key code setting of Fn mode

The key code generated when the key is pressed can be changed to arbitrary key code or arbitrary launch application in Fn input mode. And it is possible to set different key code in Fn input mode and other input modes. To change the key code, use the program button (6.1.1 Program Buttons (p.88)) or the Devicecontrol library. For details of the Android standard library, refer Android official website such as "Android Developers".

e.g.)  -> Space,  +  -> Key Backlight ON/OFF

	Input mode			
	Numerical	Alphabet (uppercase)	Alphabet (lowercase)	Fn mode
Default	2	A	a	nop
After changing	Space			Key Backlight ON/OFF

2.8 LED

DT-X400 has two LEDs, one for charging status and the other for Android's notification. Android notification LED can be controlled with Android standard API. The Android notification LED can use three colors, red and blue and green. Libraries related to this function are as follows. For details of the Android standard library, refer Android official website such as "Android Developers".

Android standard library

<code>android.app.NotificationManager</code>	Class that controls event notification to users. It includes LED control function.
<code>android.app.Notification</code>	Class for making various settings for event notifications. It includes LED control function.

Cautions!

In the Android standard library, it can specify colors with red and blue and green emission ratios, so it can logically mix colors. However, for the actual use, CASIO guarantees only red or blue or green.

2.9 Vibrator

DT-X400 equips vibrator. Libraries related to this function are as follows. For details of the Android standard library, refer Android official website such as "Android Developers".

Android standard library android.os.Vibrator	Class for vibrating the vibrator.
---	-----------------------------------

2.10 Speaker

DT-X400 equips speaker. Libraries related to this function are as follows. For details of the Android standard library, refer Android official website such as "Android Developers".

Android standard library android.media.AudioManager	Classes that control volume etc For the audio function, refer to "2.1.7 Media format (p.12) ".
--	---

2.11 Microphone

DT-X400 equips microphone. Libraries related to this function are as follows. For details of the Android standard library, refer Android official website such as "Android Developers".

Android standard library android.media.MediaRecorder	Class for using recording and recording functions. For the audio function, refer to "2.1.7 Media format (p.12) ".
---	---

2.12 Clock

2.12.1 Overview

The smartphone ensure the clock accuracy by synchronizing the time with the mobile phone network (NITZ synchronization). However, in the case of model without a telephone function, it is common to use the Internet and time synchronization (NTP synchronization) because there is no function to connect the mobile phone network. On the other hand, it is not unusual to operate without connecting to the Internet when using terminal for business use.

So, we recommend that install an NTP server inside the company if the operation is as follows.

- ① Using a model without telephone function
- ② Using WLAN, but not connecting to the Internet
- ③ Clock accuracy is important

In case not possible to connect to the internal NTP server, set clock manually.

2.12.2 Time synchronization

Since the setting of "Synchronize time with network" is enabled in the default of DT-X400, it is not necessary to change this setting if you use the mobile phone network or the Internet.

However, if set up the NTP serve inside the company and synchronize time, set the NTP server address. The NTP server address can be set in the following two ways.

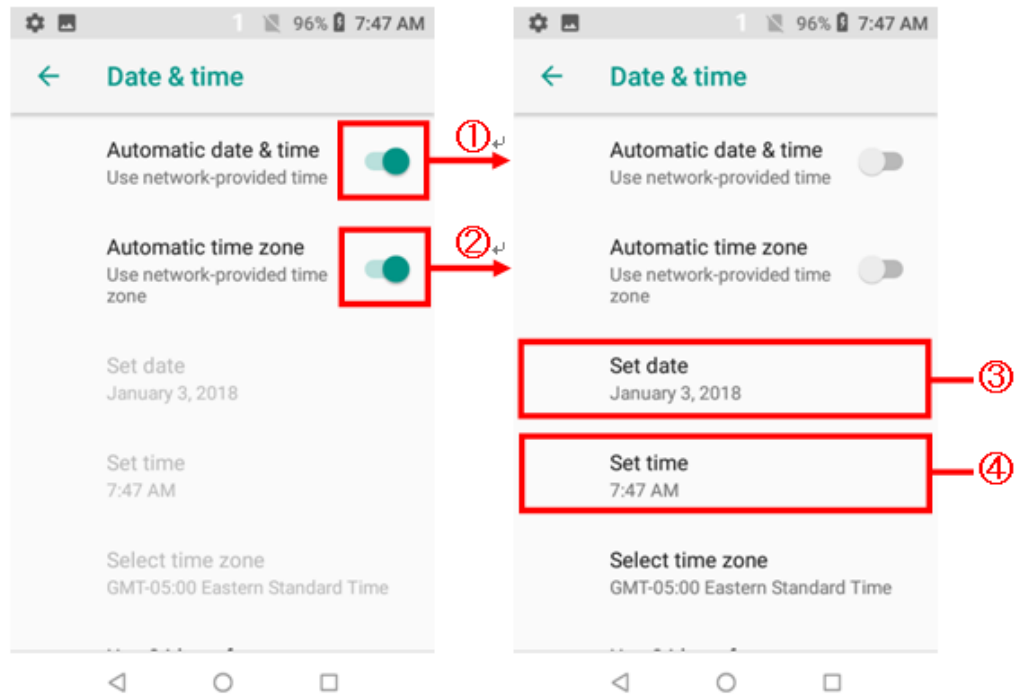
1. Set the NTP server address directly

Set the address to [Setting]->[System]->[Date & time]->[NTP Server]

2. Use the NTP server address sent from DHCP server

Enable [Settings]->[System]->[Date & time]->[Use DHCP NTP server]

If you do not synchronize the time using the network, disable "Automatic date & time" and "Automatic time zone" from [Settings] → [Date & time].



- ① Disable "Automatic date & time"
- ② Invalidate "Automatic time zone"
- ③ Open [Set date] and adjust the date manually.
- ④ Open [Set time] and adjust the clock manually.

2.13 Sensors

DT-X400 has following sensors.

Illuminance sensor

Proximity sensor

Acceleration sensor

By using each sensor, DT-X400 supports the following functions.

Automatic screen brightness adjustment

Automatic screen rotation

Touch panel invalidation during call

Libraries related to this function are as follows. For details of the Android standard library, refer Android official website such as "Android Developers".

Android standard library

`android.hardware.Sensor`

`android.hardware.SensorManager`

`android.hardware.SensorEvent`

Class that provides sensor information.

Class used to access sensor devices.

Class that provides sensor event and information according to the type of sensor.

2.14 Barcode scanner

The DT-X400 has two scanner models, 1D scanner and 2D scanner.

2.14.1 Common function (1D/2D)

Reading condition

Specify the readable barcode

Specify the barcode to enable or disable reading. By setting to enable only the barcode to be used, it can shorten the reading time.

Specifying the number of reading digits

For each barcode, specify the minimum number of digits and the maximum number of digits to be read. By setting the number of reading digits per the barcode to be used, the misreading rate can be reduced.

Check Digit Calculation, Check Character Output

For some barcodes, switchable enable/disable of "check digit calculation".

Also, specify whether to add "check character" to the read character string. By performing "check digit calculation", misreading rate can be reduced.

Read result notification

It is a function to notify the state of barcode reading.

Notification by LED

When reading is completed or failed (reading is canceled), notification LED is turned on.

The following patterns can be set.

Notification device	Setting	Scan success	Scan failed
Notification LED	LED_OFF	None	None
	LED_ON (default)	Green	Red

Notification by audio

When reading is completed or failed (reading is canceled), notification audio is played.

The following patterns can be set.

Notification device	Setting	Scan success	Scan failed
Audio	SOUND_ALL_OFF	None	None
	SOUND_FAIL_ON	None	Sound for fail
	SOUND_SUCCESS_ON	Sound for success	None
	SOUND_ALL_ON (default)	Sound for success	Sound for fail

Notification by vibrator

When reading is completed or failed (reading is canceled), vibrator vibrates. The following patterns can be set.

Notification device	Setting	Scan success	Scan failed
Vibrator	VIBRATOR_ALL_OFF	None	None
	VIBRATOR_FAIL_ON	None	Vibrate
	VIBRATOR_SUCCESS_ON	Vibrate	None
	VIBRATOR_ALL_ON (default)	Vibrate	Vibrate

2.14.2 1D Scanner

Barcode reading specification

The barcodes supported by the 1D Scanner scanner are shown below.

1D barcode

Barcode	Reading digits※1	Check Digit Calculation	Check Character Output	Other functions
EAN8 (JAN8)	8 (+2/+5)	Always enabled	Always enabled	2 digit / 5 digit add ons Extend EAN13
EAN13 (JAN13)	13 (+2/+5)	Always enabled	Always enabled	2 digit / 5 digit add ons
UPC-A	12 (+2/+5)	Always enabled	Enable/ Disable	2 digit / 5 digit add ons Add output character
UPC-E0 / UPC-E1	6 (+2/+5)	Always enabled	Enable/ Disable	2 digits / 5 digits add ons Add output character Convert UPC-A
Code39	1 - 48	Enable/ Disable	Enable/ Disable	Extend Code32 Full ASCII conversion
Codabar (NW-7)	1 - 60	Enable/ Disable	Enable/ Disable	Start/Stop code output
ITF (Interleaved 2of 5)	2 - 80	Enable/ Disable	Enable/ Disable	Extend EAN13
Code93	1 - 80 ※2	Always enabled	Always disable	
Code128	1 - 80	Always enabled	Always disable	
GS1 128 (EAN128)	※3	Always enabled	Always disable	
MSI	4 - 48	Always enabled	Enable/ Disable	
GS1DataBar (RSS)	※4	Always enabled	Always disable	Extend UPC/EAN GS1 DataBar 14 reading GS1 DataBar Limited reading GS1 DataBar Expanded reading

※1 The Readable digits are changed depends on the print quality of the barcode and environmental conditions. Please check the barcode to be used.

※2 The maximum readable digit is 76. For compatibility, it is possible to set 80 digits.

※3 Code128 and GS1 128 share the number of reading digitsIn. To specify the reading digits of GS1 128, change the reading digits of Code128.

※4 GS1 DataBar-14 and GS1 DataBar Limited are fixed to 14 digits of reading digits. Also, other range of reading digits is 1-74, but it can not specify the number.

2D code (Stacked code)

Barcode	Reading digits※1	Check Digit Calculation	Check Character Output	Other functions
GS1 DataBar (RSS) Stacked type	※2	Always enabled	Always disable	GS1 DataBar 14 / GS1 DataBar Expanded

※1 The Readable digits are changed depends on the print quality of the barcode and environmental conditions. Please check the barcode to be used.

※2 Range of reading digits is 1-74, but it can not specify the number.

Reading type

Normal reading

Barcode scanning performs every time when the trigger key is pressed.

Continuous reading

Repeat barcode scanning while the trigger key is pressed.





Multi-Step reading

Repeat barcode scanning while the trigger key is pressed. Reads the specified number of barcodes and outputs data each time the reading is successful. The one barcode is not read consecutively.

Expanded function

Swing width control

If the laser emits on barcodes located near each other, scanning may fail. By narrowing the laser swing width of the 1D scanner, it is possible to read adjacent bar codes without irradiating the laser. The following patterns can be set for the swing width.

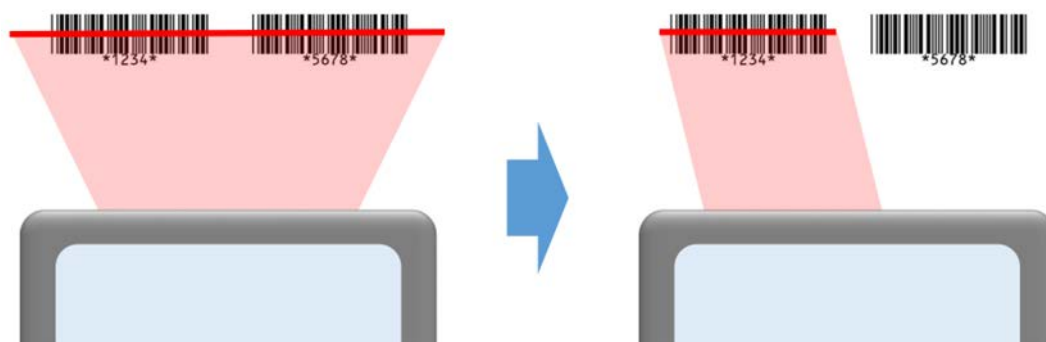
Swing width MAX (default)	
Swing width WIDE	
Swing width MIDDLE	
Swing width NARROW	

Each 1D scanner module has an individual performance difference of the laser swing width. Perform calibration to compensate for this difference. A specialized barcode is used for calibration. For the calibration method, please refer to the WEB manual.

Laser highlight mode

This function highlights the read barcode. By emphasizing the read barcode, it prevents misunderstands when scanning a dense barcode.

e.g.) When reading the barcode on the left side.



2.14.3 2D Scanner

Barcode reading specification

The barcodes supported by the 2D Scanner scanner are shown below.

1D barcode

Barcode	Reading digits※1	Check Digit Calculation	Check Character Output	Other functions
EAN8/JAN8	8 (+2/5)	Always enabled	Enable/Disable	2 digits / 5 digits add ons
EAN13/JAN13	13 (+2/5)	Always enabled	Enable/Disable	2 digits / 5 digits add ons
UPC-A	12 (+2/5)	Always enabled	Enable/Disable	2 digits / 5 digits add ons Add output character Extend EAN13
UPC-E0 / UPC-E1	6 (+2/5)	Always enabled	Enable/Disable	2 digits / 5 digits add ons Add output character Extend UPC-A
Code39	1 - 48	Enable/Disable	Enable/Disable	Start/Stop code output Full ASCII conversion
Codabar (NW7)	2 - 60	Enable/Disable	Enable/Disable	Start/Stop code output
ITF (Interleaved 2 of 5)	2 - 80	Enable/Disable	Enable/Disable	
Code93	1 - 80	Always enabled	Always disabled	
Code128	1 - 80	Always enabled	Always disabled	
GS1 128 (EAN128)	1 - 80	Always enabled	Always disabled	
MSI	4 - 48	Always enabled	Enable/Disable	
GS1 DataBar (RSS)	1 - 80 ※3	Always enabled	Always disabled	GS1 DataBar 14 reading GS1 DataBar Limited reading GS1 DataBar Expanded reading
Code32 ※2	9	Always enabled	Always disabled	
ISBT	※4	Always enabled	Always disabled	

※1 The Readable digits are changed depends on the print quality of the barcode and environmental conditions. Please check the barcode to be used.

※2 In case of reading Code32, enable both Code39 and Code32 to read.

※3 GS1 DataBar-14 and GS1 DataBar Limited are fixed to 14 digits of reading digits.

※4 The reading digits setting of ISBT refers to the setting of Code128.

2D code (Stacked code)

Barcode	Reading digits※1	Check Digit Calculation	Check Character Output	Other functions
PDF417	1 - 2750	Always enabled	Always disabled	
MicroPDF	1 - 2750	Always enabled	Always disabled	
Codablock F ※2	1 - 2048	Always enabled	Always disabled	
Composite	1 - 300	Always enabled	Always disabled	Composite compatibility (EAN8/EAN13/UPC-A/UPC-E/GS1 DataBar/EAN128)
GS1 DataBar(RSS) Stacked type ※3	1 - 80	Always enabled	Always disabled	GS1 DataBar-14/GS1 DataBar Expanded

※1 The Readable digits are changed depends on the print quality of the barcode and environmental conditions. Please check the barcode to be used.

※2 Codablock F is a vertically stacked Code 128. So, if reading of Code 128 is enabled, a part of Codablock F may be read as Code 128.

※3 Standard Omnidirectional type is included.

2D barcode (Matrix code)

Barcode	Reading digits※1	Check Digit Calculation	Check Character Output	Other functions
Aztec	1 - 3832	Always enabled	Always disabled	
QR Code / Micro QR Code	1 - 7089	Always enabled	Always disabled	Model2 only ※2
Maxicode	1 - 150	Always enabled	Always disabled	
DataMatrix	1 - 3166	Always enabled	Always disabled	ECC000/050/080/100/140/200
Han Xin (Chinese Sensible Code)	1 - 6000	Always enabled	Always disabled	

※1 The Readable digits are changed depends on the print quality of the barcode and environmental conditions. Please check the barcode to be used.

※2 Model 1 is not supported.

Reading type

Normal reading

Barcode scanning performs every time when the trigger key is pressed.

Continuous reading

Repeat barcode scanning while the trigger key is pressed.

Multi-Step reading

Repeat barcode scanning while the trigger key is pressed. Reads the specified number of barcodes and outputs data each time the reading is successful. While the trigger key is pressed, the barcode once read is not scanned.

Package reading

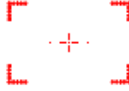
Barcode scanning while the trigger key is pressed. Reads the specified number of barcodes and outputs data at once if it is success. While the trigger key is pressed, the barcode once read is not scanned.

Expanded functions

The following functions are available as an extension function of barcode scanning.

Illumination aimer

2D barcode scanner is equipped with an illumination LED and a laser aimer to indicate the scan position. When scanning barcodes, the illumination and the aimer light alternately.

Type	Aimer shape	Description
Laser		A frame showing the angle of view is displayed in the four corners, and a cross is displayed at the center.

Barcode scanner Auto Power Off (APO)

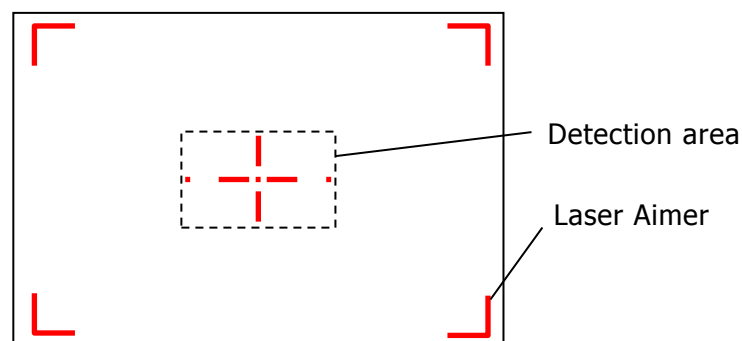
This function automatically turns off the barcode scanner when the barcode scanner function is not used for a certain period. Even after turning off the barcode scanner, the power is turned on automatically when the barcode scanner works. It is also possible to disable this APO.

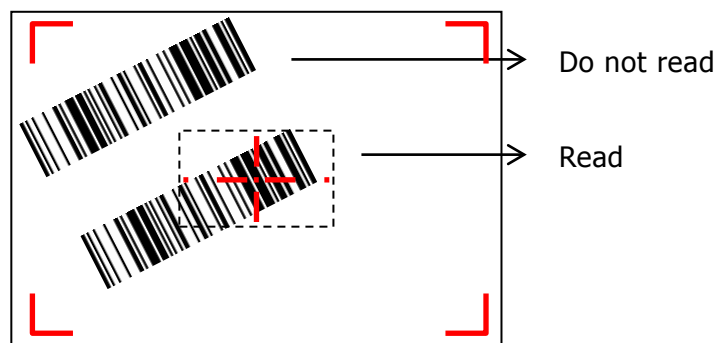
Power consumption is reduced while the barcode scanner is off. However, it takes several tens to several hundred milliseconds to turn on the barcode scanner, so setting the APO time shorter may cause poor response. The default imager APO time is 60 seconds.

Centering window mode

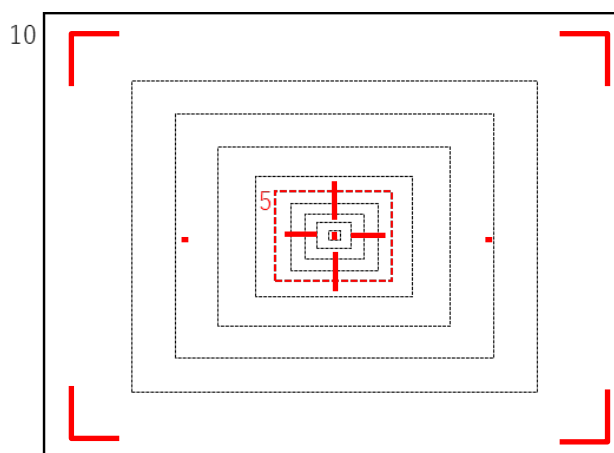
It limits the detection area to the center of the angle. This is useful when read only the barcode at the center in a situation with crowded barcodes.

Refer to the figure below for the barcode that can be read while the centering window mode is in effect. If part of the barcode is included in the detection area, read the barcode.





Specify the size of detection area 0 to 10. Please change the value for the actual use environment. The irradiation position of the laser aimer will change depending on the distance and angle of the terminal and the barcode.



Black/White reverse mode

It is a function to read a barcode (white-black reversal barcode) printed in white on a black background.

Setting	Description
Normal barcode (default)	Only normal barcode (barcode printed in black on white background) is read.
Black/White reversed barcode	Only black-and-white reversed barcode (barcode printed in black on black background) is read.
Normal and Black/White reversed barcode	Read normal barcode and black-and-white reversing barcode.

[Remarks]

For QR, DataMatrix, Aztec, you can read both normal barcode and black-and-white reversed bar code regardless of this setting.

Automatic linking of combined symbols

It supports combination barcodes. When reading combination barcode below, all the data is combined and output after reading all the connected barcodes.

Symbol	Target	How to combine
QR Code	QR Code containing the combination identifier	Scan so that all combination QR codes fit into the aimer frame. The decoder combines QR code data in the order specified by their combination identifier, and outputs them.

[Remarks]

When reading combination barcodes, set reading method to "Normal reading". If read combination barcode with other method, it may not be scanned correctly.

Shooting still images

It is a function to shoot still images. It is output as grayscale image data of 256 gradations. The image size is as shown in the table below.

Image size	1280 × 800 pixel
Tone	256 grayscales

Stream capturing

It is a function to continuously acquire the streaming image of the barcode scanner. It can be used for preview or image analysis.

Image size	640 × 400 pixel
Tone	256 grayscales
Frame rate	< 15fps ※1

※1 The frame rate varies depending on the ambient brightness and the system load.

2.15 USB

DT-X400 can PC connection, use USB memory and USB keyboard. Libraries related to this function are as follows. For details of the Android standard library, refer Android official website such as "Android Developers".

Android standard library
android.hardware.usb

Class for accessing USB device.

2.15.1 USB Connection mode

The DT-X400 has "Side USB port" on the side of the main unit as USB connection terminal and "cradle terminal" effective when connecting the cradle. To use two connection terminals exclusively, DT-X400 has two connection modes. To change the connection mode, follow the procedure below. [Settings]-> [Accessibility]-> [USB connection mode]-> Select "Cradle first" or "Side USB port"

Connection mode	Function
Cradle first mode	Prioritize the USB connection connected to the cradle terminal.
Side USB port only mode	Enable only the USB connection connected to the side terminal.

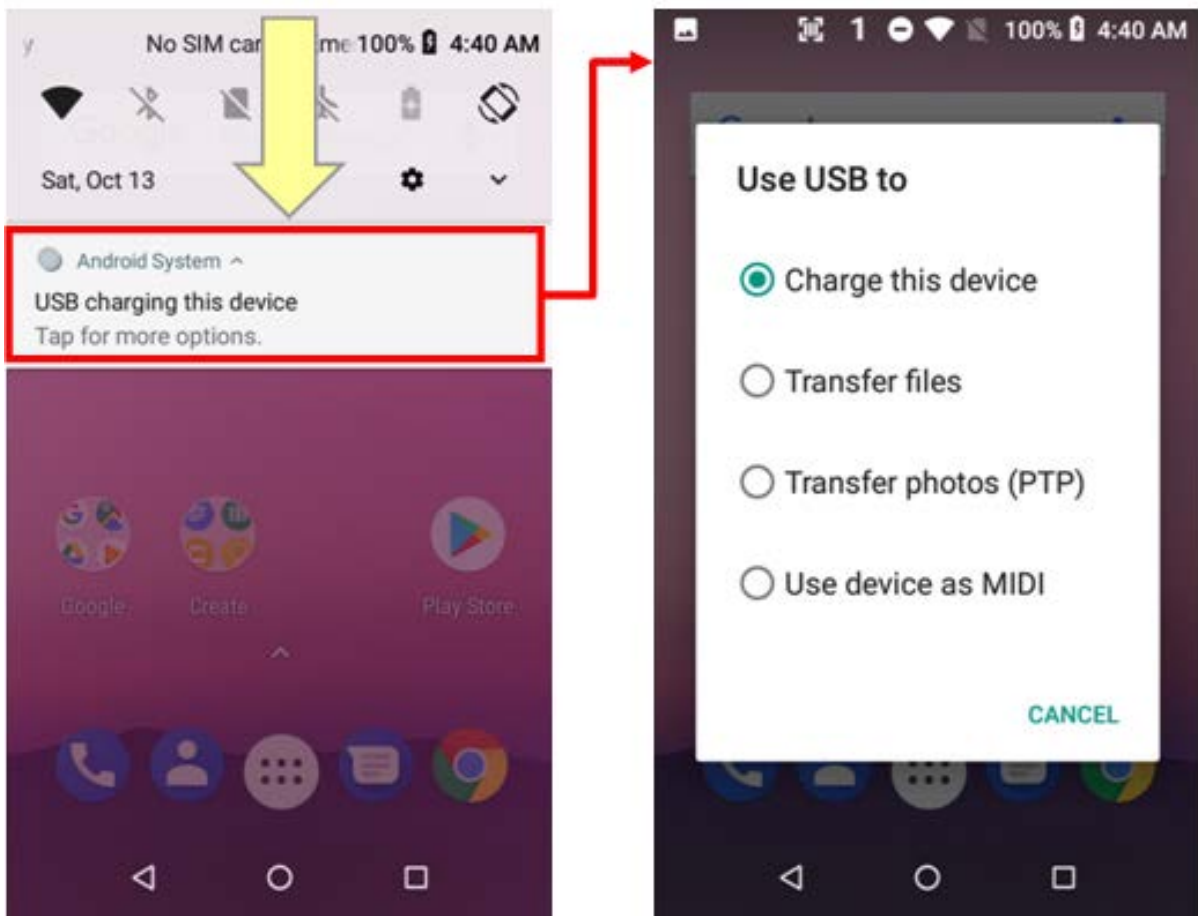
Cautions!

Be sure to attach the AC adapter to the cradle.

2.15.2 Connection with PC

DT-X400 is assumed to use a network such as WLAN or WAN for business data exchange (transmission and reception) with PC (server). Meanwhile, DT-X400 strage access from PC may be necessary for development and maintenance purposes. USB connection using cradle or USB cable is available for such use.

When DT-X400 is connected to the PC via cradle or USB cable, charging starts. Open the notification panel (2.1.6 Notification panel and Quick setting panel (p.11)), then, tap "USB charging this device".



By selecting "Transfer files" from the pop-up menu, you can access the files in the DT-X400 file from PC.

Cautions!

That the default is "charging" is a security specification of Android 8.1.

2.16 WLAN

DT-X400 equips WLAN module. Libraries related to this function are as follows. For details of the Android standard library, refer Android official website such as "Android Developers".

Android standard library

android.net.wifi

android.net.wifi.p2p

Class for accessing WLAN network

Class for creating P2P connection in Wi-Fi Direct.

Cautions!

DT-X400 does not support CCX and Fast Transition (FT).

When using static IP setting, don't forget to set Gateway and DNS addresses correctly. If these addresses are hard to set because of small local network, set "0.0.0.0" to them.

Otherwise, WLAN connection will be unstable.

2.17 Bluetooth

2.17.1 Communication profile

DT-X400 supports the following Bluetooth profiles.

Function	Purpose
A2DP (SRC)	Profile for streaming delivery of audio data of stereo sound quality used between digital audio player and headphone.
AVRCP (TG)	Profile for remotely operating the operation target device from the remote control used between the digital audio player and the remote controller.
GAP	Profile for device connection / authentication / encryption
GAVDP	Profiles that serve as the basis for A2DP and VDP
HFP (AG)	A profile used to make and receive calls and calls, used between a mobile phone and a headset.
HSP (AG)	Profile for voice input / output, used between mobile phone and headset etc.
OPP (Client/Server)	Profile used for exchanging objects between the mobile phone and the mobile phone e.g.) phone book data and schedule data.
PAN (PANU/NAP)	Profile for a plurality of PCs (slaves) to make radio connection with one PC (master) as the center.
PBAP (PCE/PSE)	Profile for transferring phone book data.
SPP (DevA/DevB)	Profile used to create virtual serial port and connect devices.
GATT	Profile used for exchanging attribute information with power saving Bluetooth.
HOGP (Report Host)	Profile for connecting mouse and keyboard.
DUN (GW)	Profile for accessing the Internet and other dial-up services.
HID (Host)	Provides support for devices such as mice (pointing device), keyboards.
SDP	Protocol for searching services supported by the other device

The following table shows correspondence between Bluetooth communication devices and usage and profiles. Use certified Bluetooth device.

Bluetooth device	Usage	Profile and application
Bluetooth access-point (PAN-NAP Profile compatible)	LAN connection Tethering device	PAN-PANU Profile ※1 OS standard settings app + TCP/IP app
PAN-PANU Profile compatible PDA, PC, etc.	LAN connection Tethering master	PAN-NAP Profile OS standard settings app
Bluetooth printer	Print to printer	SPP Profile Application for printing
Bluetooth compatible PDA, Bluetooth compatible PC etc	File transfer among Bluetooth devices	OPP Profile OS standard photo app
Bluetooth headset	Voice communication	HFP Profile OS standard phone app
Bluetooth headphone	Play music	A2DP Profile OS standard music app

※1 When PAN-PANU Profile is used, it's not possible to communicate via Proxy.

Libraries related to this function are as follows. For details of the Android standard library, refer Android official website such as "Android Developers".

Android standard library
 android.bluetooth
 android.bluetooth.le

Class for controlling Bluetooth function.
 Class for controlling Scan function and advertise function.

2.18 NFC

DT-X400 equips NFC module. By communicating with the contactless IC card or RFID tag, it is possible to read and write them. These functions are available only with NFC models.

2.18.1 Useable card

The types and commands of supported NFC cards are as follows.

ISO/IEC14443 TypeA

Card type	Supported command
MIFARE Standard 1K	Authentication, Read, Write, Increment, Decrement, Transfer, Restore
MIFARE Ultralight	Read, Write4
MIFARE Ultralight C	Read, Write4, Authentication

ISO/IEC14443 TypeB

Card type	Supported command
JICSAP	SELECT FILE, UPDATE BINARY, READ BINARY,

FeliCa

Card type	Supported command
FeliCa, FeliCa Lite	Read Without Encryption, Write Without Encryption

ISO15693

Card type	Supported command
ICODE SLI	Read Single Block, Write Single Block, Lock Block, Read Multiple Blocks, Write AFI, Lock AFI, Write DSFID, Lock DSFID, Get System Information, Get Multiple block Security Status
ICODE SLI-L, ICODE SLI-S	Read Single Block, Write Single Block, Lock Block, Write AFI, Lock AFI, Write DSFID, Lock DSFID, Get System Information
my-d V 10 Plain	Read Single Block, Write Single Block, Lock Block, Read Multiple Blocks, Write AFI, Lock AFI, Get Multiple block Security Status
my-d Light	Read Single Block, Write Single Block, Write AFI, Lock AFI,
Tag-it HF-I Plus ※1	Read Single Block, Write Single Block, Lock Block, Read Multiple Blocks, Write AFI, Write DSFID, Get System Information, Get Multiple block Security Status
Tag-it HF-I Pro, Tag-it HF-I Standard ※1	Read Single Block, Write Single Block, Lock Block

※1 When using the Write Single Block / Lock Block / Write AFI / Write DSFID command for tags of the Tag-it series, it is necessary to retry the command in the application. For details, refer to the NFC library manual.

Libraries related to this function are as follows. For details of the Android standard library, refer Android official website such as "Android Developers".

Android standard library
android.nfc

Class for access the NFC.

2.19 GPS

DT-X400 equips GPS. GPS can be used only with models with telephone function. Libraries related to this function are as follows. For details of the Android standard library, refer Android official website such as "Android Developers".

Android standard library

`android.location.GpsStatus`

`android.location.GpsSatellite`

Class that provides GPS engine function.




























Class that gets the current state of GPS satellites.

Used in conjunction with `android.location.GpsStatus`.

3. Standard Applications

3.1 List of applications

The table below shows a list of applications displayed in the “ application list”.

	Camera		Clock		Calculator
	Calendar		Drive		Phone
	Chrome		Downloads		GMail
	Maps		Contacts		YouTube
	Messenger		Notes		Play Store
	Photos		Sheets		Slides
	Docs		News & Weather		Hangouts
	Voice Search		Duo		Google
	Keep		Play Music		Play Movies & TV

Cautions!

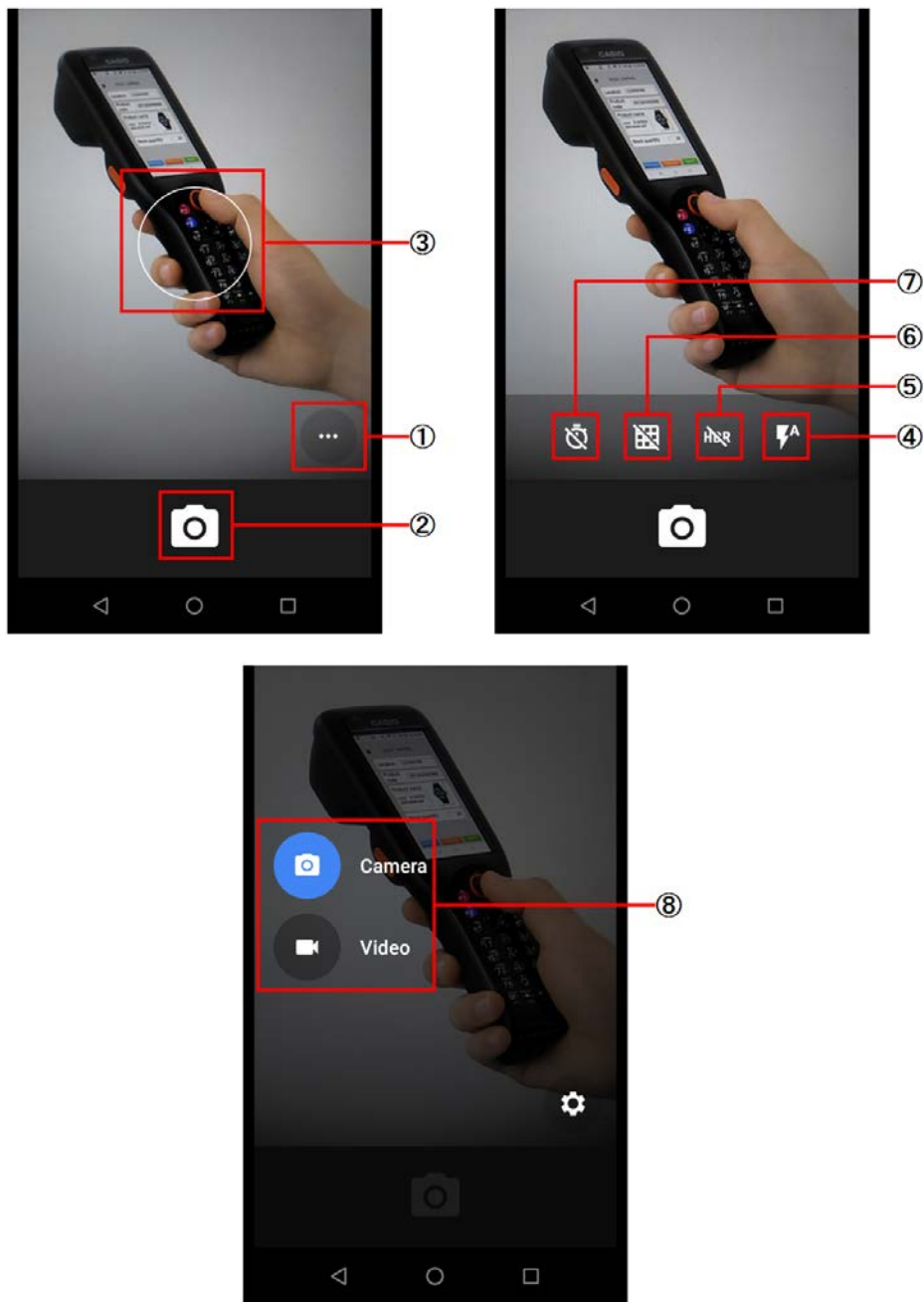
"Phone", and "Messenger" are only for the models with telephone function.

From the next page, briefly explain how to use items that are particularly important among the standard applications. However, since standard applications are frequently updated via the Google Play store, understand that the explanation of this manual is to understand the outline of each software.

e.g.) The above "Messenger" is changed to "Message" by updating.

3.1.1 Camera

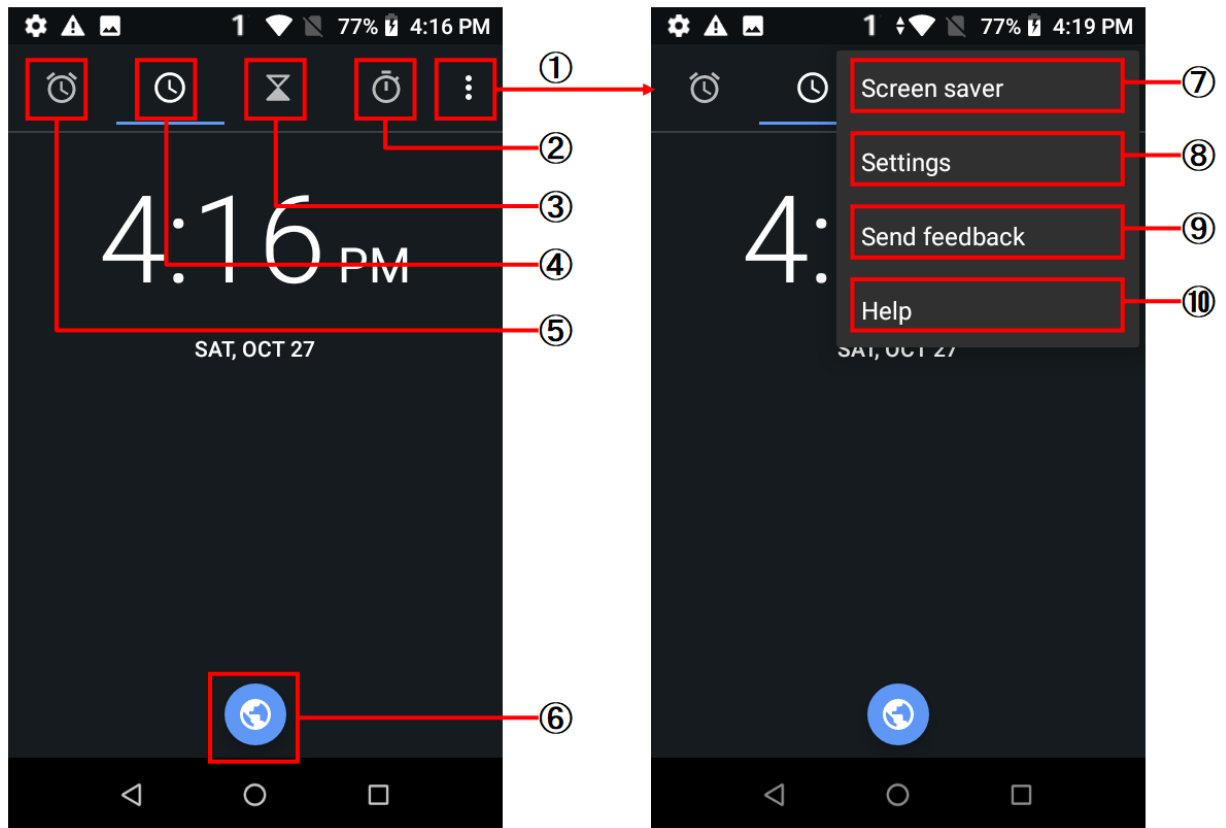
Shoot still images and movies.



- ① Display option panel
- ② Shutter
- ③ Focus position (Focus on where touched)
- ④ Flash switching
- ⑤ Enable / disable switching of HDR (High Dynamic Range)
- ⑥ Switch grid display
- ⑦ Timer setting
- ⑧ Change Camera / Video

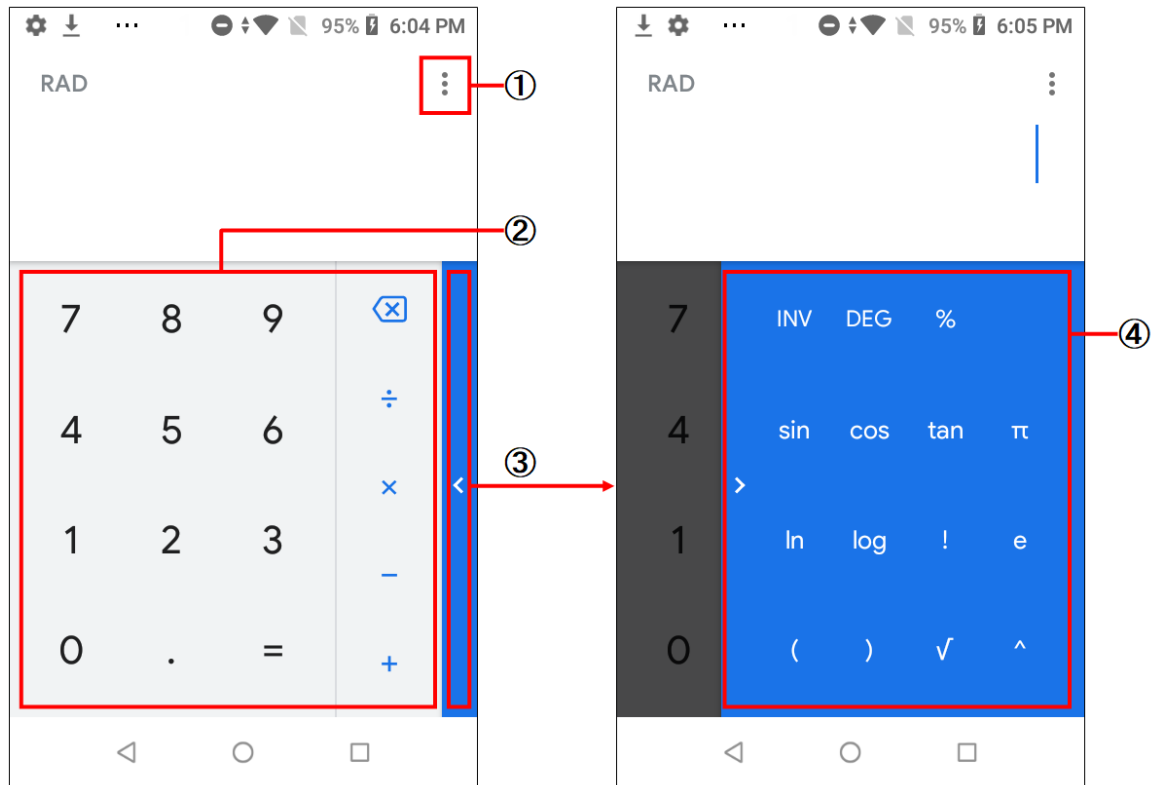
3.1.2 Clock

Set clock display and alarm setting.



3.1.3 Calculator

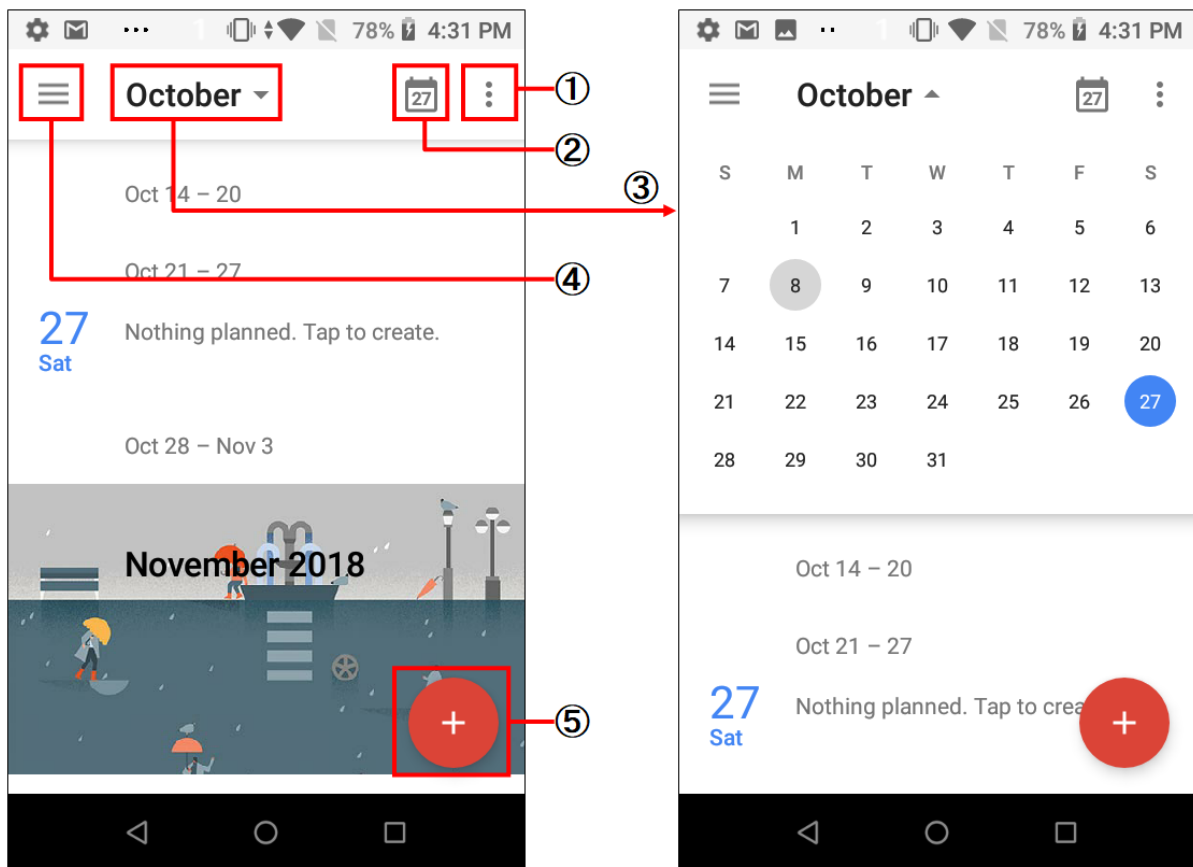
Calculator for numerical calculation and function calculation.



- ① Display help etc.
- ② Numerical operation panel
- ③ Open the function operation panel
- ④ Function operation panel

3.1.4 Calendar

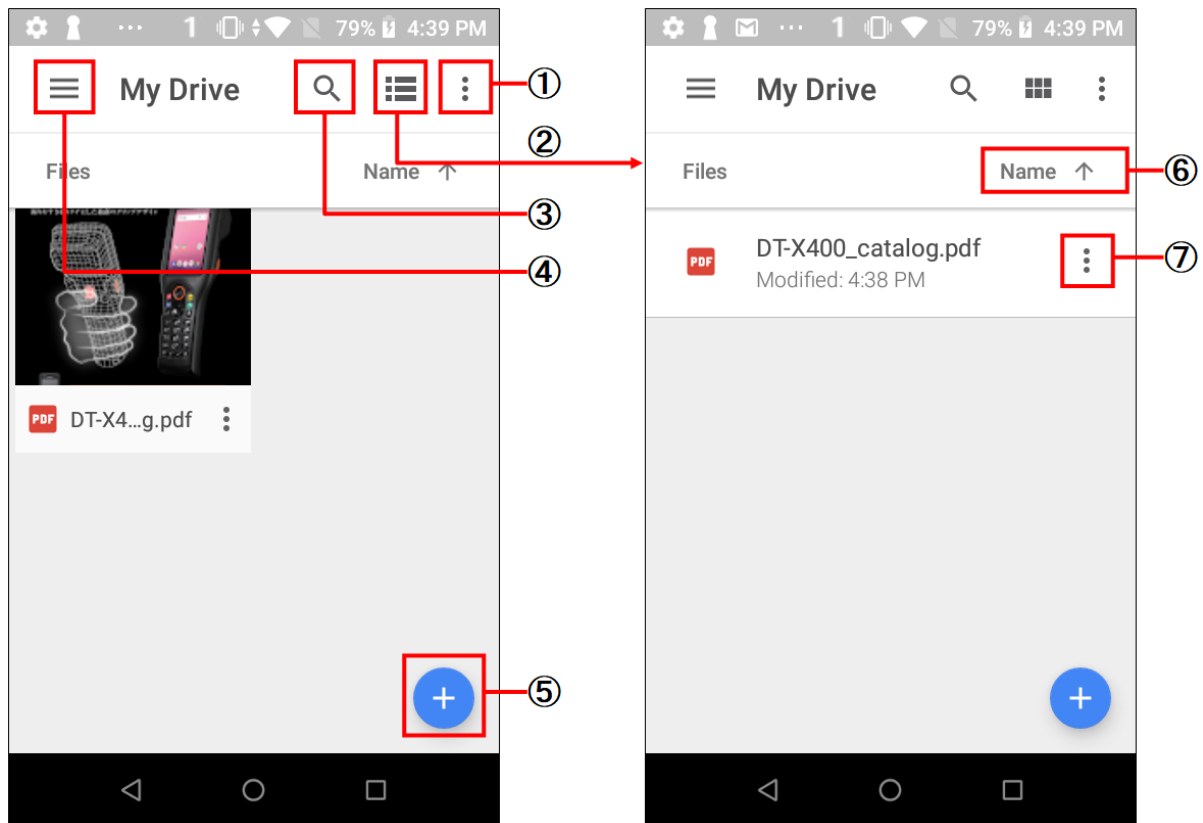
Manages events with Google Calendar. You can synchronize, display, and register schedules.



- ① Sync with Google Calendar
- ② Move to today
- ③ Move to specific date
- ④ Settings
- ⑤ Registration of Schedule, Reminder, Goal setting

3.1.5 Drive

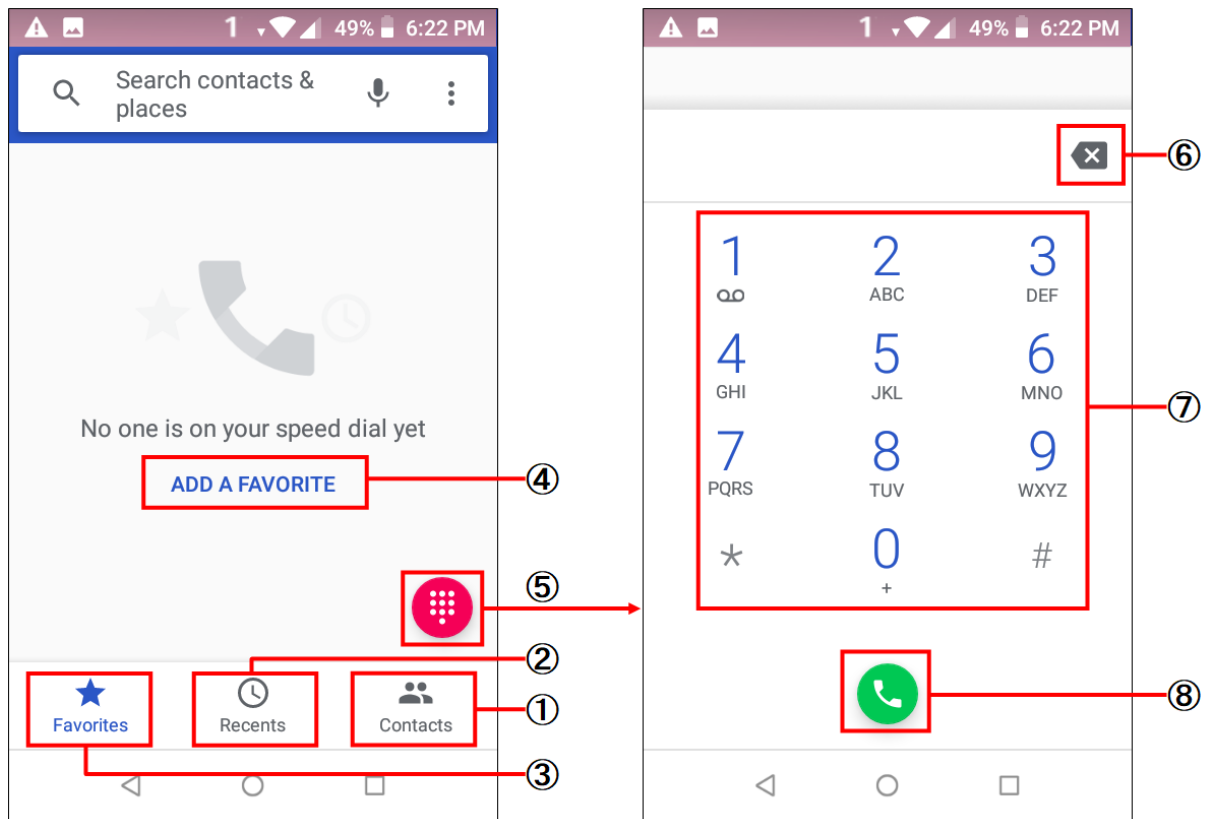
Accesses Google Drive, then search, view, edit photos and files on it.



- ① Sort, select
- ② Switch between List display and Grid display
- ③ Search
- ④ Settings
- ⑤ Register new data to drive
- ⑥ Sort order
- ⑦ File operation

3.1.6 Phone

Make and receive phone calls.



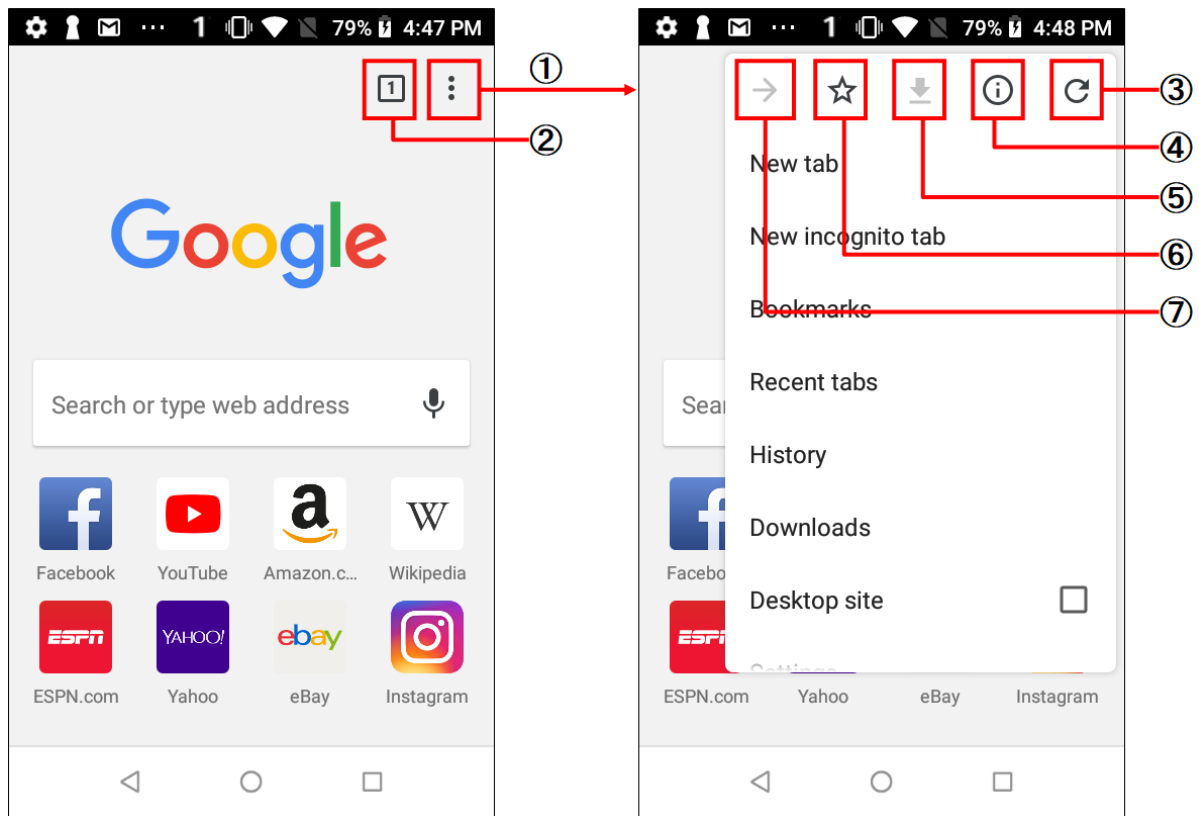
- ① Contacts
- ② Call log
- ③ Quick access screen
- ④ Add to Quick Access
- ⑤ Dial display
- ⑥ Edit dial number (delete)
- ⑦ Input phone number
- ⑧ Outgoing

Cautions!

This application is available only on the models with telephone function.

3.1.7 Chrome

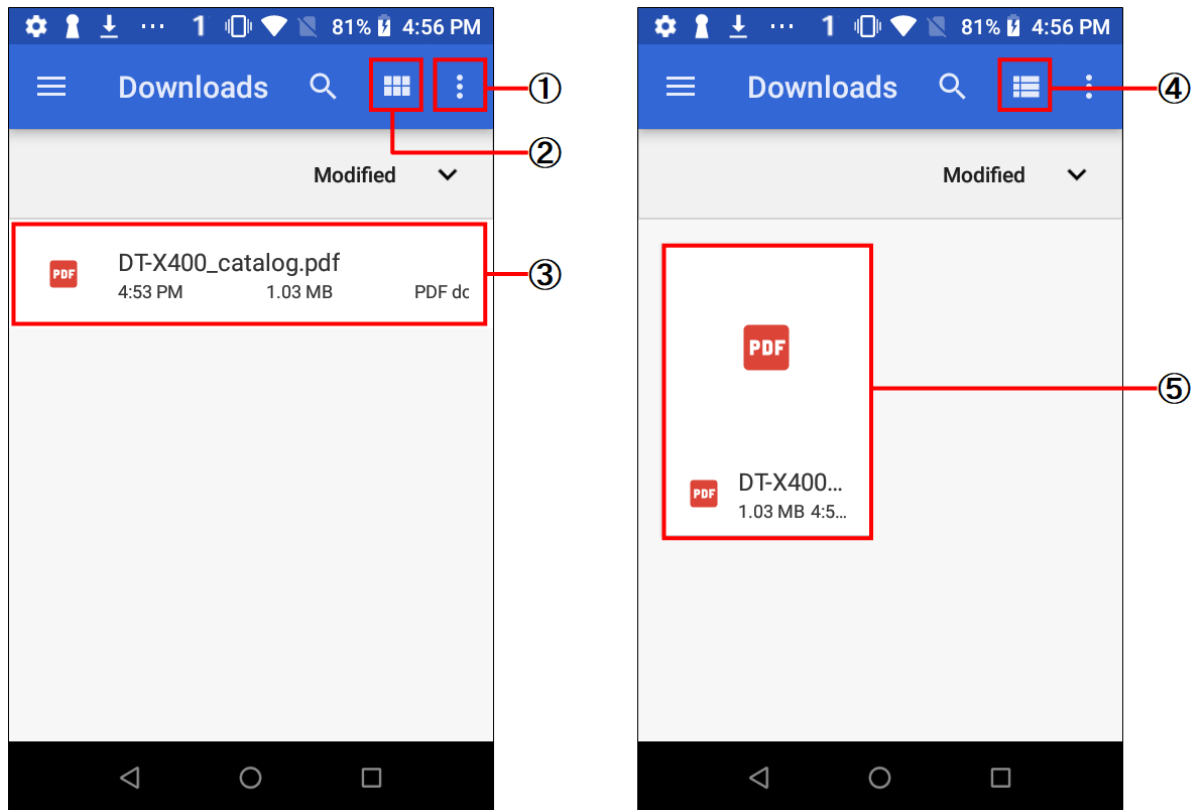
Browse web pages.



- ① Options
- ② Switching Tabs
- ③ Reloading page
- ④ Site information
- ⑤ Download
- ⑥ Add to bookmark
- ⑦ Go forward

3.1.8 Downloads

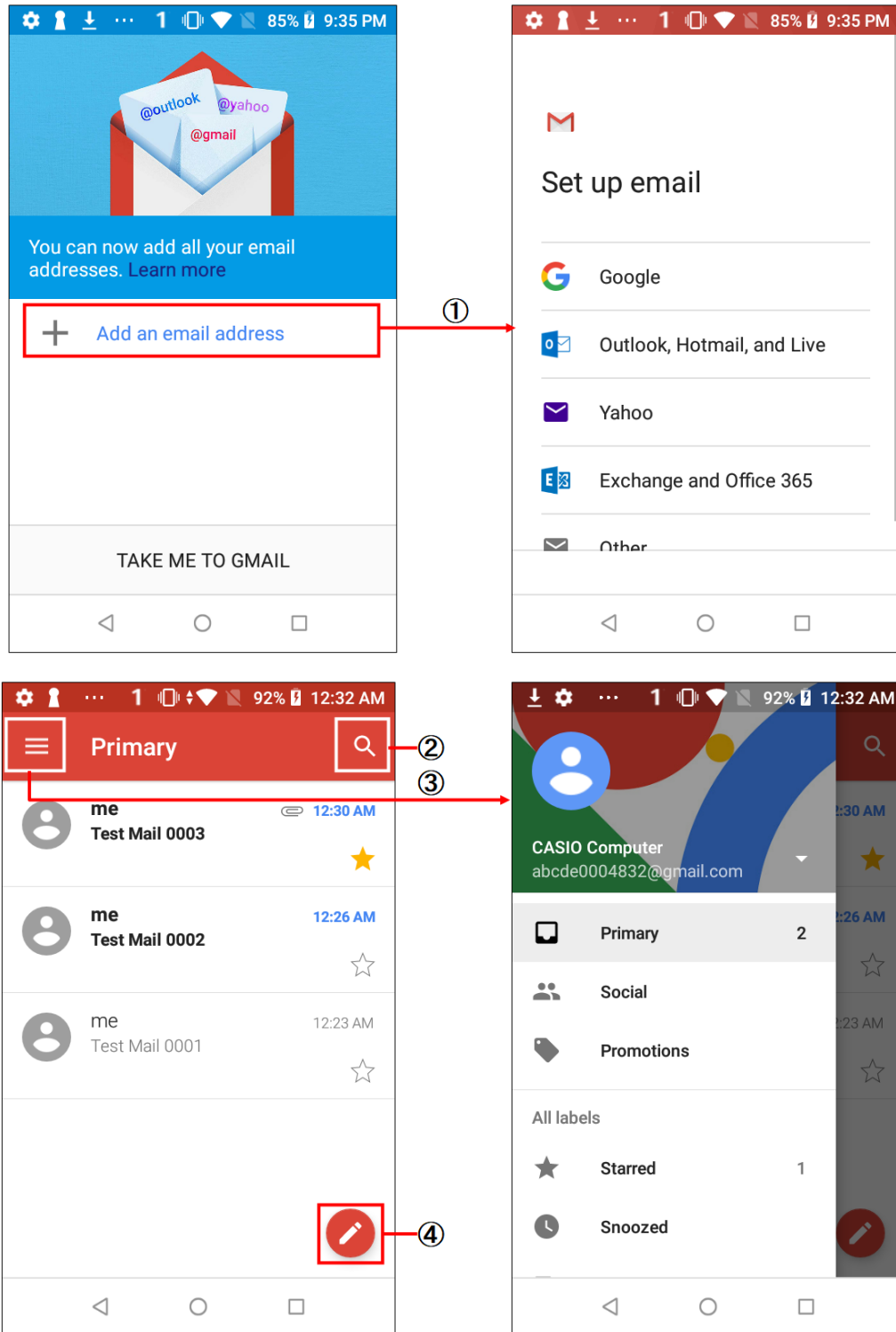
Download files by request of mailer or browser. And also used to refer to the downloaded file.



- ① Settings
- ② Switch to grid display
- ③ File open
- ④ Switch to list view mode
- ⑤ Open files

3.1.9 Gmail

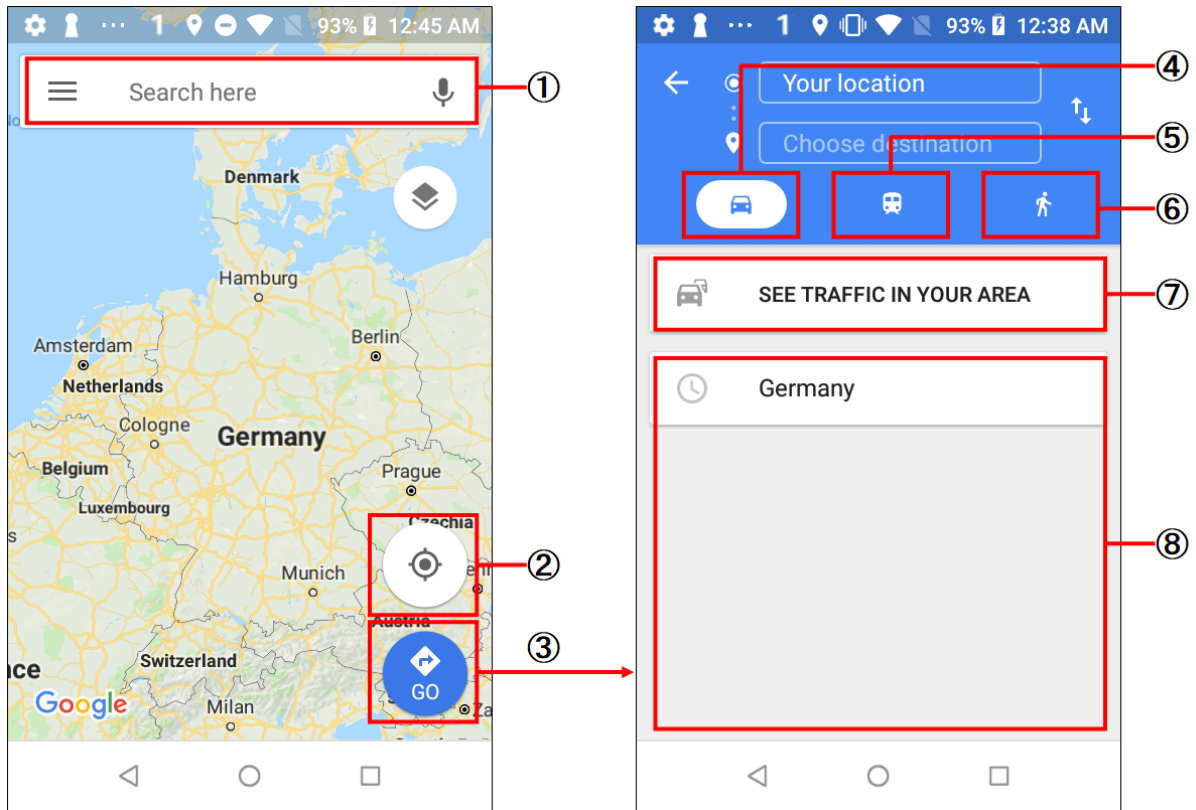
Send and receive Google and other emails.



- ① Adding mail address
- ② Searching mail history
- ③ Move to mail tray
- ④ Creating new mail

3.1.10 Maps

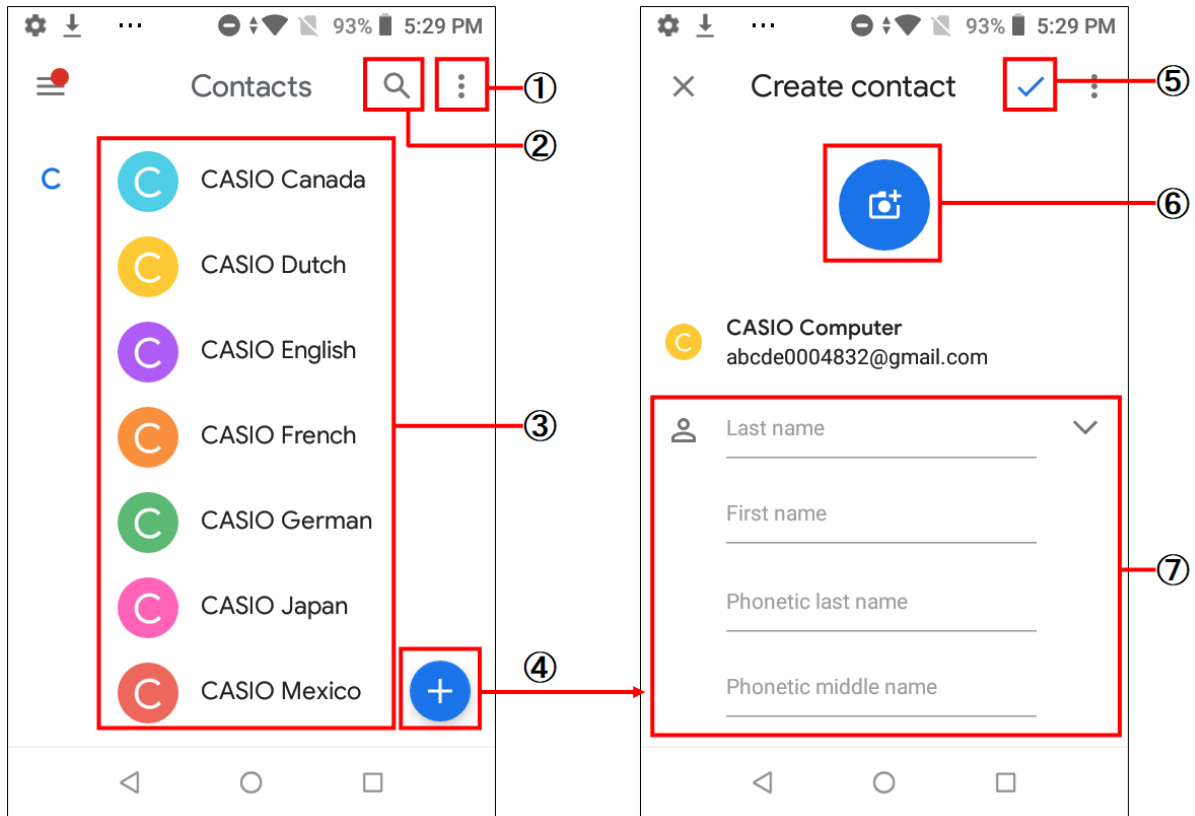
Display map and navigate to the destination.



- ① Enter destination
- ② Move to current position
- ③ Navigation
- ④ By car
- ⑤ By train
- ⑥ By foot
- ⑦ Display nearby traffic situation
- ⑧ Select destination

3.1.11 Contacts

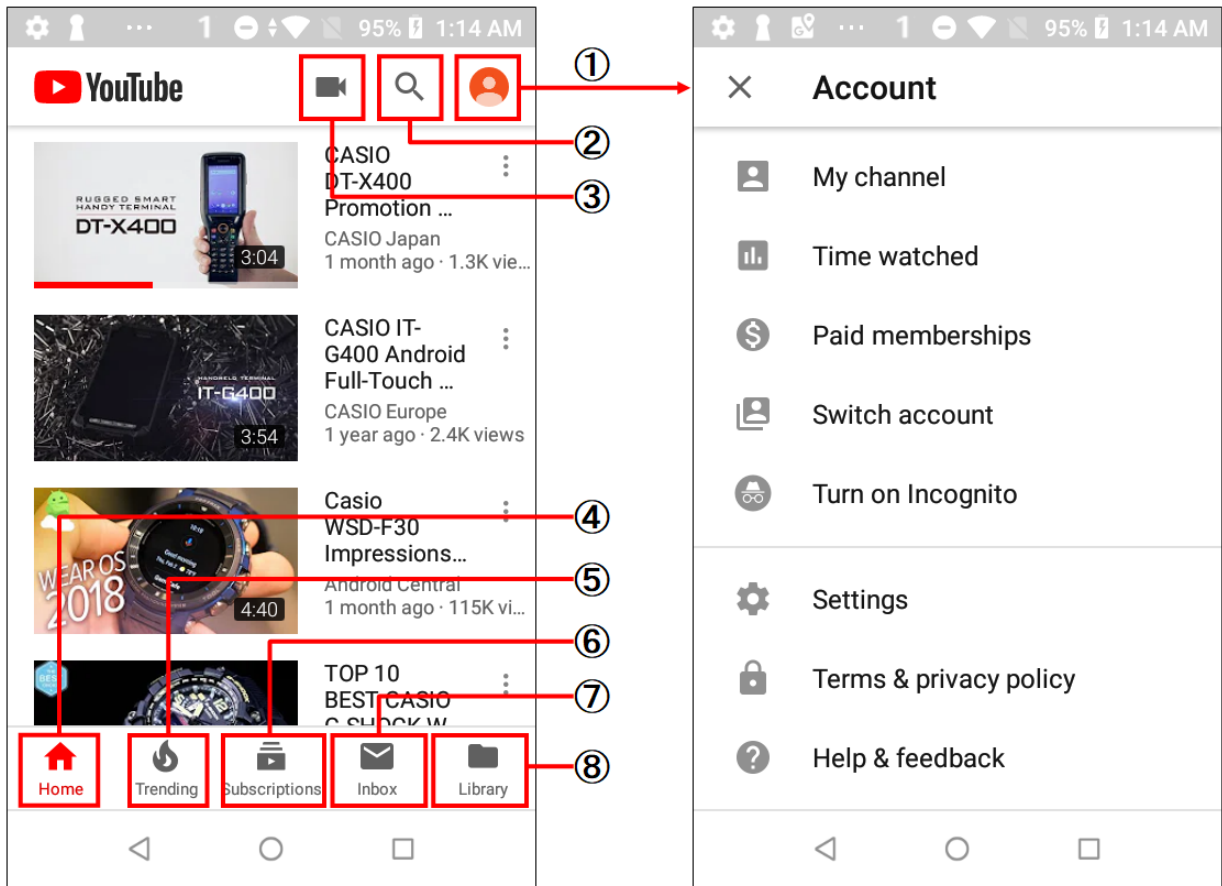
View and edit contacts, and sync with Google contacts.



- ① Select contacts / All contacts
- ② Search contact
- ③ Open contacts
- ④ Add new contact
- ⑤ Decide to add new contact
- ⑥ Input image with camera
- ⑦ Contact data input

3.1.12 YouTube

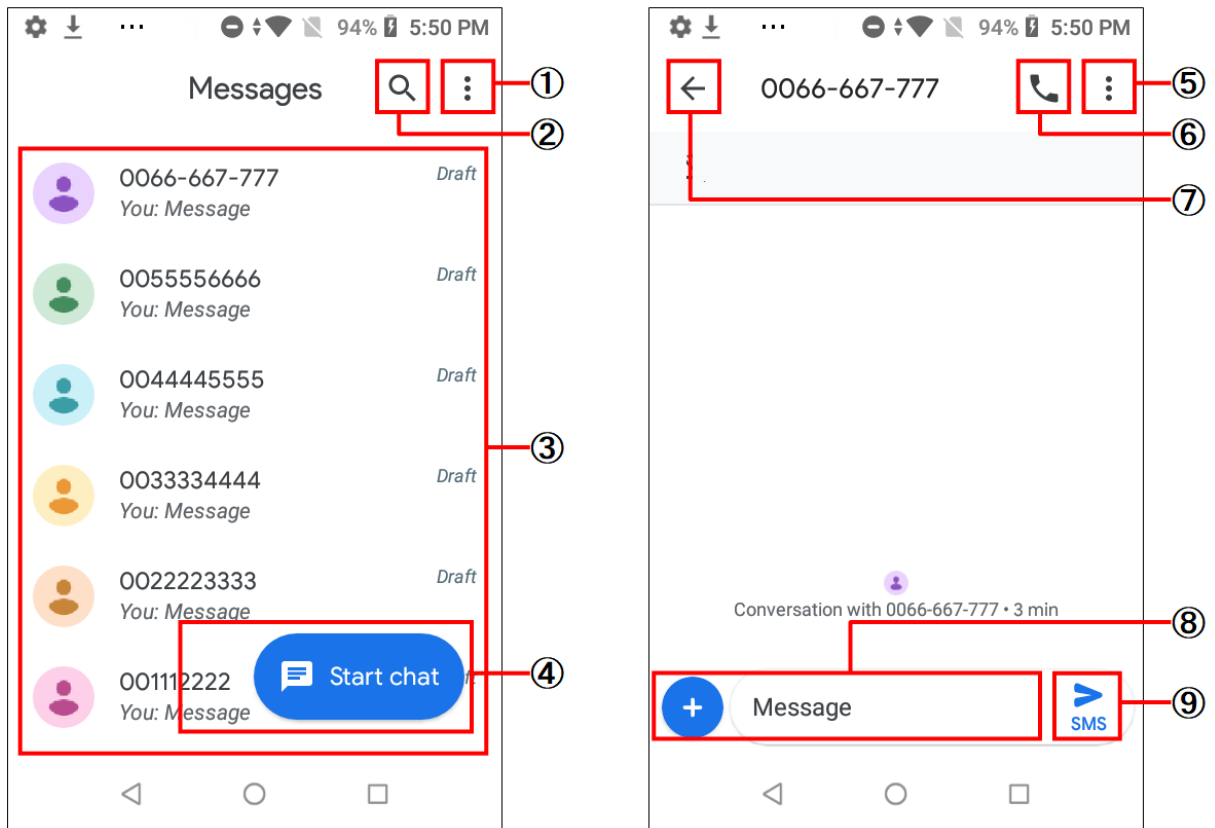
Play, create and upload YouTube videos.



- ① Account screen
- ② Search video
- ③ Creating and uploading YouTube videos
- ④ Home screen
- ⑤ Trending video screen
- ⑥ Channel screen
- ⑦ Mail
- ⑧ Library

3.1.13 Messenger

Sending and receiving SMS.



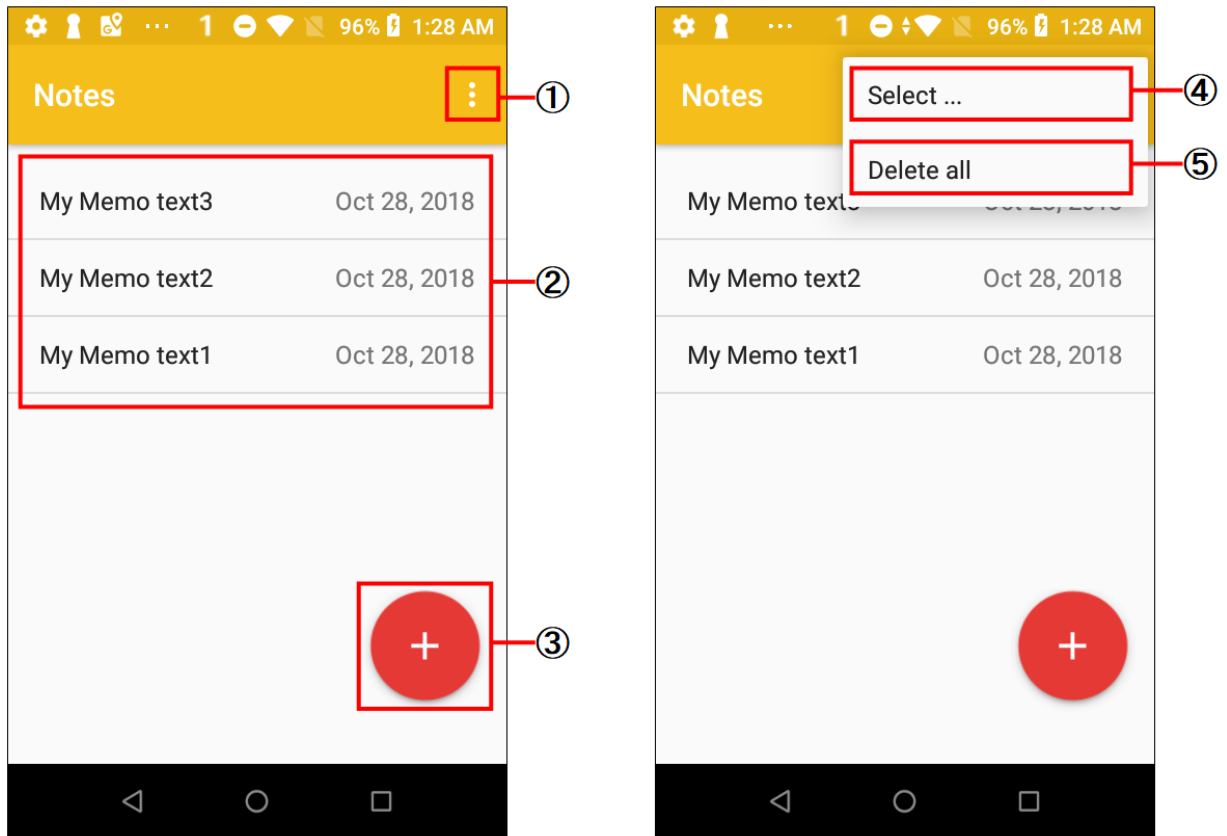
- ① Option, Others
- ② Search messages
- ③ Open message history
- ④ Create new message
- ⑤ Option, Others
- ⑥ Phone call
- ⑦ Return to message screen
- ⑧ Enter SMS message
- ⑨ Message sending

Cautions!

This application is available only on the models with telephone function.

3.1.14 Notes

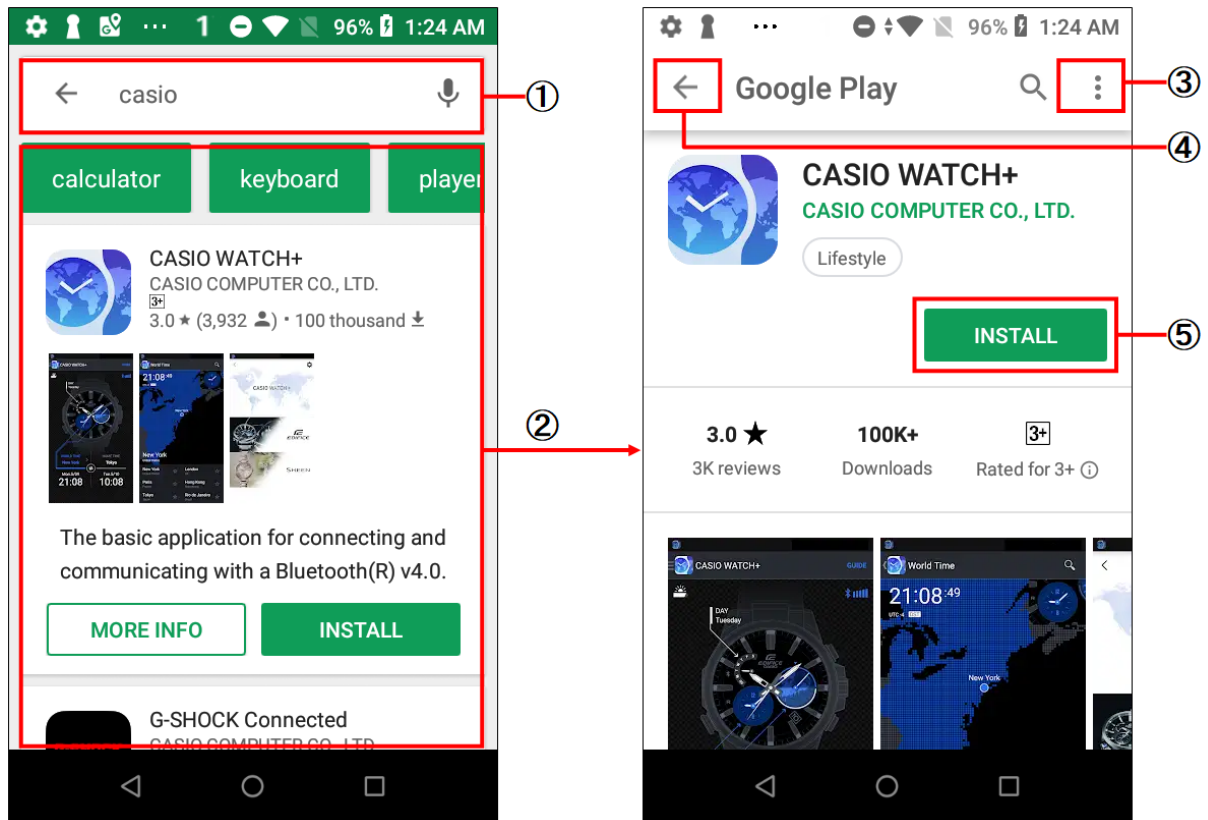
Notepad.



- ① Delete menu
- ② Open created note
- ③ Create new note
- ④ Select note to be deleted
- ⑤ Delete all notes

3.1.15 Play Store

Installing applications from Google Play store.



- ① Searching applications
- ② Selection of retrieved applications
- ③ Searching applications
- ④ Return to search screen
- ⑤ Application installation

3.1.16 Settings



This is the outline of representative setting items.

Setting Item		Description
1	Network & Internet	Wi-Fi
		Mobile network
		Data usage
		Tethering
		VPN
		Ethernet
		Airplane mode
2	Connected devices	Bluetooth
		Cast
		NFC
		Android Beam
		Printing
		USB
3	Apps & notifications	Recently opened apps
		See all apps
		Notification
		App permissions
		Advanced
4	Battery	Battery status
		Last full charge
		Screen usage since full charge
		Backup Battery
		Standard Battery
		Backup Battery Charge
		Main battery charge
		Battery Warning Level
		Battery saver
		Battery percentage
		Adaptive brightness
		Sleep
		Ambient display
		App usage since full charge

Setting Item		Description
5	Display	Brightness level
		Night Light
		Adaptive brightness
		Keyboard Backlight
		Advanced
6	Sound	Media volume
		Alarm volume
		Ring volume
		Also vibrate for calls
		Do Not Disturb preferences
		Phone ringtone
		Advanced
7	Storage	Device storage
		Storage manager
		Photo & videos
		Music & audio
		Games
		Movie & TV apps
		Other apps
		Files
		System
8	Security & location	Google Play Protect
		Find My Device
		Security update
		Screen lock
		Lock screen preferences
		Smart Lock
		Location
		Show passwords
		Device admin apps
		SIM Card Lock
		Encryption & credentials
		Trust agents
		Screen pinning
		Apps with usage access
9	User & accounts	Account
		Add account
		Emergency Information
		Automatically sync






Setting Item		Description
10	Accessibility	Volume key shortcut
		Select to Speak
		TarkBack
		Text-to-speech output
		Font size
		Display size
		Magnification
		Color correction
		Color inversion
		Large mouse pointer
		Switch Access
		Click after pointer stops moving
		Power button ends call
		Auto-rotate screen
		Touch & hold delay
		Mono audio
		Captions
		High contrast text
		USB connection mode
		Power saving mode
11	Google	Google Account
		Ads
		Android Auto
		Android preview messages
		Backup
		Cast media controls
		Connected apps
		Data management
		Device phone number
		Devices
		Google Fit
		Google Pay
		Google Play Instant
		Location
		Nearby
		Restore contacts
		Search,Assistant & Voice
		Security
		Set up nearby device
		Set up your work profile
		Smart Lock for Passwords
12	ScanSetting	On/Off
		Basic
		Options
		Notification
		Wedge
		Symbologies
		About

Setting Item		Description
13	System	Languages & input
		Gestures
		Date & time
		Backup
		System Updates
		Reset options
		About phone

4. Additional Applications

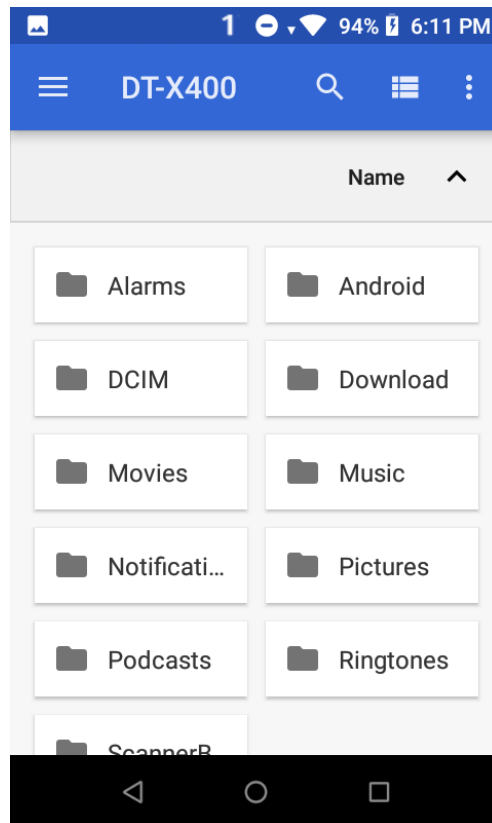
4.1 List of applications

The table below shows a list of additional applications of DT-X400.

No.	Apps	Name and functions
1		File Explorer File Explorer is a tool to manipulate the files in the terminal.
2		Net Search NetSearch is a tool to display and record WLAN status. It is useful to check the WLAN environment before installation and to analyze WLAN trouble during operation.
3		Kitting Tools The task of taking various settings to DT-X400 and installing application programs and preparing them for use in business is called "kitting". This tool is to make kitting work for DT-X400 efficient.
4		FLDroid FLDroid is a tool to transfer files between PC and DT-X400. It transfers files in cooperation with the application "LMWIN" running on PC.
5		CASIO Android Addons (User Installed application) CasioAndroidAddons is an add-on that provides "very important function when using DT-X400 for business use", although they are not supported by standard Android. By installing this tool, it is possible to restart the terminal, shut down, etc. by application request.

4.1.1 File Explorr

File Explorer is a tool to manipulate the files in the terminal.



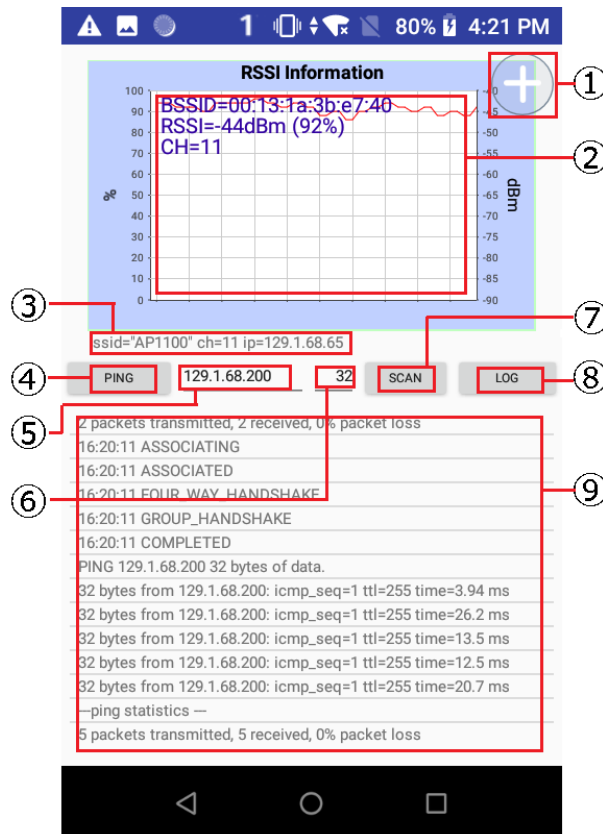
4.1.2 NetSearch

NetSearch is a tool to display and record WLAN status. It is useful to check the WLAN environment before installation and to analyze WLAN trouble during operation.

This tool has three views, Signal View, Scan View and Detailed View. To switch to another view, select desired view from the menu displayed by + icon placed on right upper.

Signal View

This view has five functions shown below to check WLAN status in real-time.



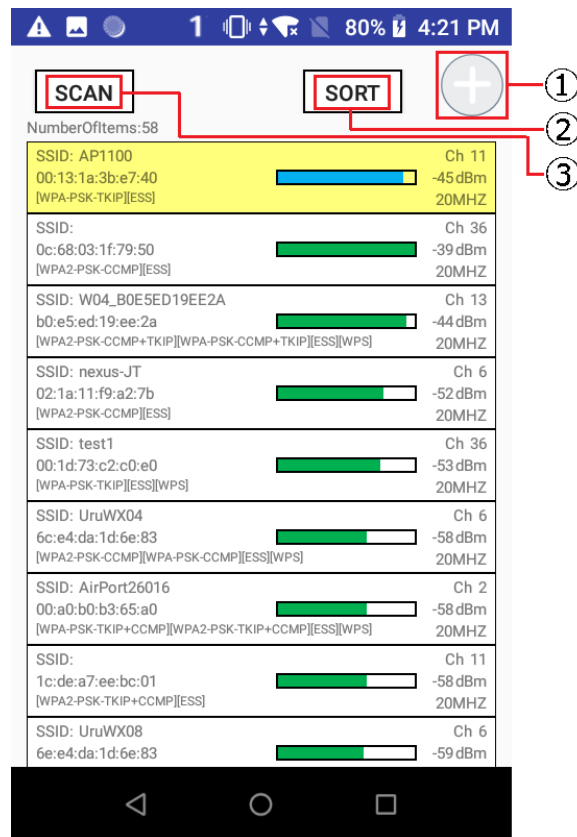
- ① Switch to another view
- ② Display of connected AP's information by graph and text
- ③ Display SSID, channel, IP Address
- ④ Ping to specified address
- ⑤ Specify PING destination address
- ⑥ Specify the ping transmission size
- ⑦ AP scanning for same SSID as currently connected
- ⑧ Enable / Disable Log
- ⑨ Display of WLAN status reported by Android OS

The functions of this view continue to work even when other view or other application is displayed until termination of this tool.

Scan View

This view shows neighborhood APs list.

When this view is displayed, AP scanning will take place once. After that, if [SCAN] button is tapped, scanning will continuously take place until [STOP] button is tapped.



- ① Switch to another view
- ② Select the display order of SCAN results
- ③ Start SCAN

Colors:

Currently connected AP is shown with Blue strength bar. Another APs are shown with Green bar.

APs which have same SSID as currently connected are shown with Yellow background. Other APs are shown with White background.

Display Order:

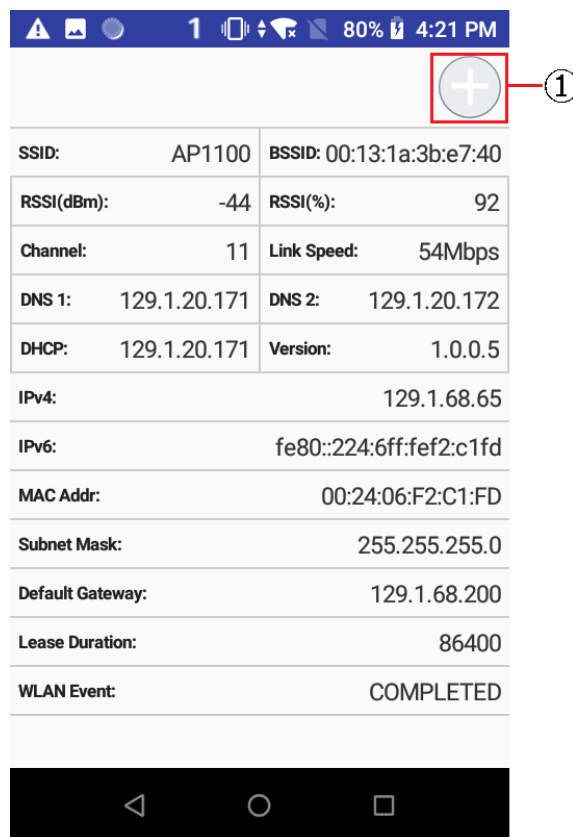
Currently connected AP is shown at top of the list regardless of sort setting.

APs which have same SSID as currently connected are shown next.

Other APs are shown at lower part of the list.

Detail View

This view displays detailed information about by text.



SSID:	AP1100	BSSID:	00:13:1a:3b:e7:40
RSSI(dBm):	-44	RSSI(%):	92
Channel:	11	Link Speed:	54Mbps
DNS 1:	129.1.20.171	DNS 2:	129.1.20.172
DHCP:	129.1.20.171	Version:	1.0.0.5
IPv4:	129.1.68.65		
IPv6:	fe80::224:6ff:fe2:c1fd		
MAC Addr:	00:24:06:F2:C1:FD		
Subnet Mask:	255.255.255.0		
Default Gateway:	129.1.68.200		
Lease Duration:	86400		
WLAN Event:	COMPLETED		

① Switch to another view

Log file

When [LOG] button is tapped, two kinds of log files are created in the NetSearchLog folder of Internal Storage.

Logging stops when [LOG STOP] button is tapped or the number of lines exceeds 100,000.

Ping result/Scan result/WLAN status

File name:

YYMMDDTTMMSSNetSearchlog.txt (YYMMDDTTMMSS is date and time of starting log)

Format of each line:

YYMMDDTTMMSS,results/status displayed at Signal View

RSSI graph data

File name:

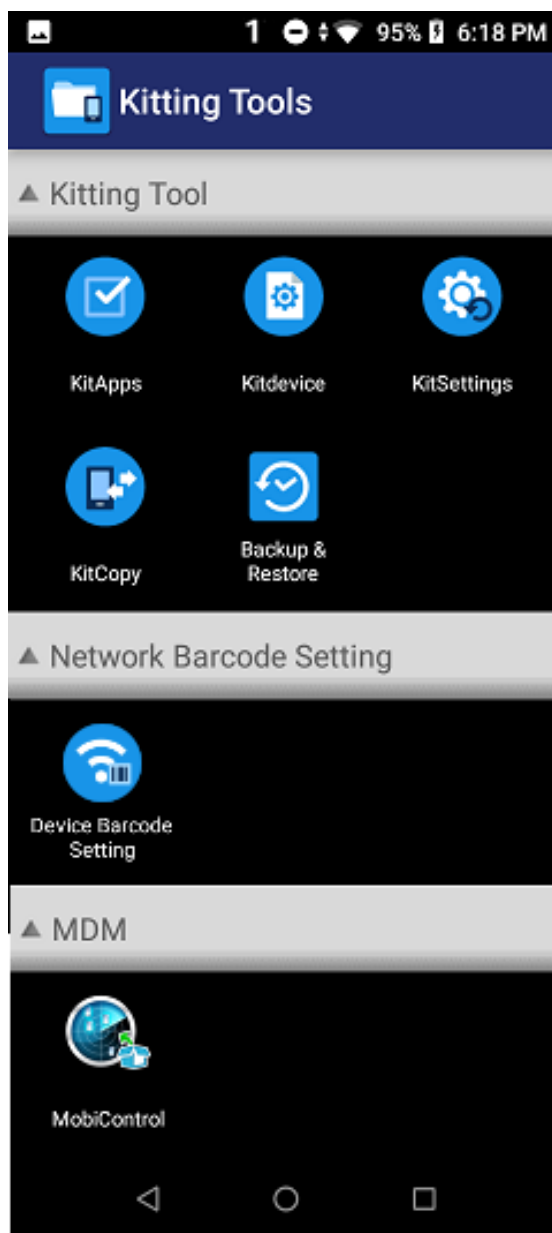
YYMMDDTTMMSSGraphNetSearchlog.txt (YYMMDDTTMMSS is date and time of starting log)

Format of each line:






YYMMDDTTMMSS,[SSID],[BSSID],[Channel],[RSSI(dBm)],[IPv4Addr]

4.1.3 KittingTools

It is called "kitting" to install various applications and set the setting to the terminal and make it available for business. This tool is to make kitting work for DT-X400 efficient.



KittingTools

No.	Apps	Name and functions
1		KitApps It is used to delete (hide) applications unnecessary for work. Use "power launcher" to lock home screen and setting.
2		KitDevice It is used to install applications on terminals and make individual settings. The setting content to be set on the terminal using this tool must be created in advance using KitData.xls (definition file).
3		KitSettings It is used to Backup / Restore the terminal settings (part of Android settings). By using KitData.xls (definition file), restore can be executed in cooperation with KitDevice.
4		KitCopy It is used to copy files and folders to other terminals by Wi-Fi direct communication.
5		Backup&Restore It is used to Backup / Restore the terminal settings (part of Android settings) and installed user applications.

For details, refer to the Kitting Manual.

Device Barcode Setting

This tool performs WLAN setup by scanning a barcode. This setting requires a barcode sheet prepared in advance for WLAN settings.

For details, refer to the Kitting Manual.

Mobile Device Management

MobiControl is MDM (Mobile Device Management) tool developed by SOTI.

For DT-X400, an installation module is preloaded for installing MobiControl

For details on using MobiControl, contact the Casio support desk.

4.1.4 **FLDroid**

FLDroid is a tool to transfer files between PC and DT-X400. It transfers files in cooperation with the application "LMWIN" running on PC.

FLDroid runs as a service on Android OS and can transfer files via TCP/IP (LAN/WLAN) in cooperation with LMWIN by being called from an Android application.

For details, please refer to the FLDroid Manual.

4.1.5 **CASIO Android Addons**

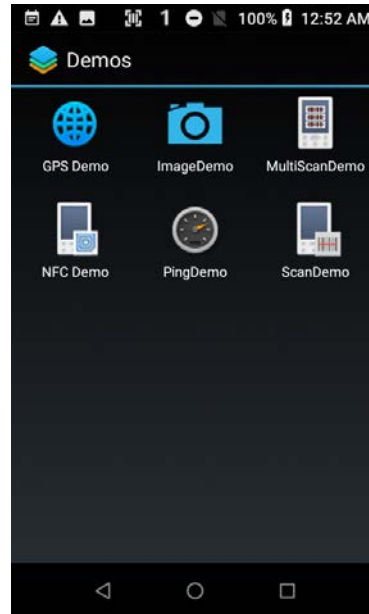
CasioAndroidAddons is an add-on that provides "very important function when using DT-X400 for business use", although they are not supported by standard Android.








By installing this tool, it is possible to restart the terminal, shut down, etc. by application request.

Refer to the Manual of "Casio Android Add-ons Manual".

5. Demo Tools

These tools are inspection software to confirm that the device (GPS, NFC, WLAN, Barcode scanner) mounted on the terminal works. It does not guarantee the operation of all functions of these tools.



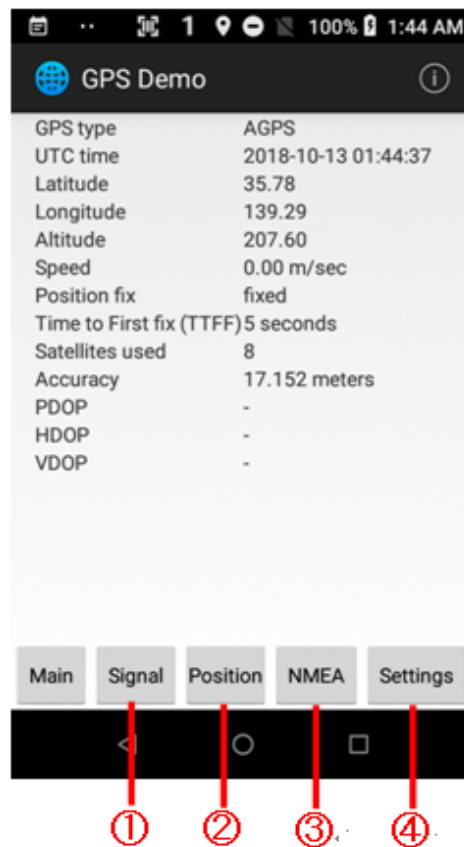
No.	Tool	Name and function
		Demos folder
1		GPS Demo Use to confirm that it can detect satelights.
2		ImageDemo Use to confirm that capture the image by barcode scanner.
3		MultiScan Demo Use to confirm that multiscan by barcode scanner.
4		NFC Demo Use to confirm that NFC operates.
5		PingDemo Use to confirm that network connection is working.
6		ScanDemo Use to confirm that barcode scanner is working.

Cautions!

Available demos vary depending on your model. (Only available demos will be displayed.)

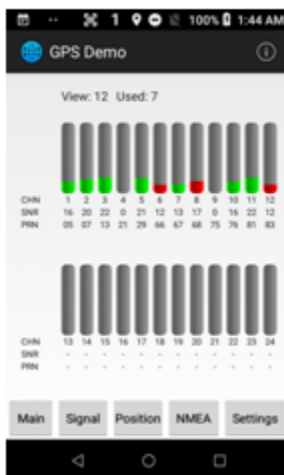
5.1 GPS Demo

This software is used to confirm that GPS function is working.

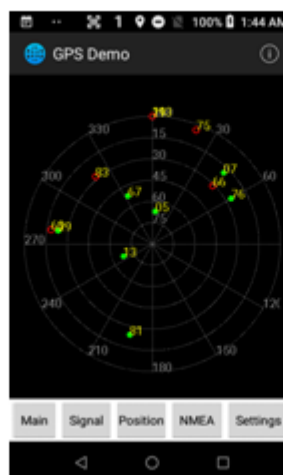


- ① Check signal from satellite
- ② Check the position of the satellite
- ③ Check NMEA data
- ④ Settings

①Signal



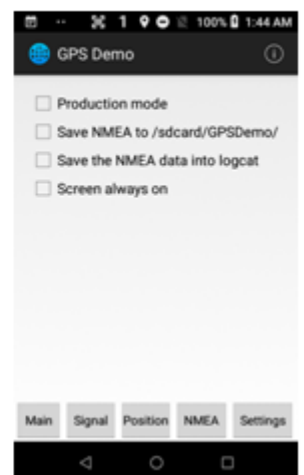
②Position



③NMEA

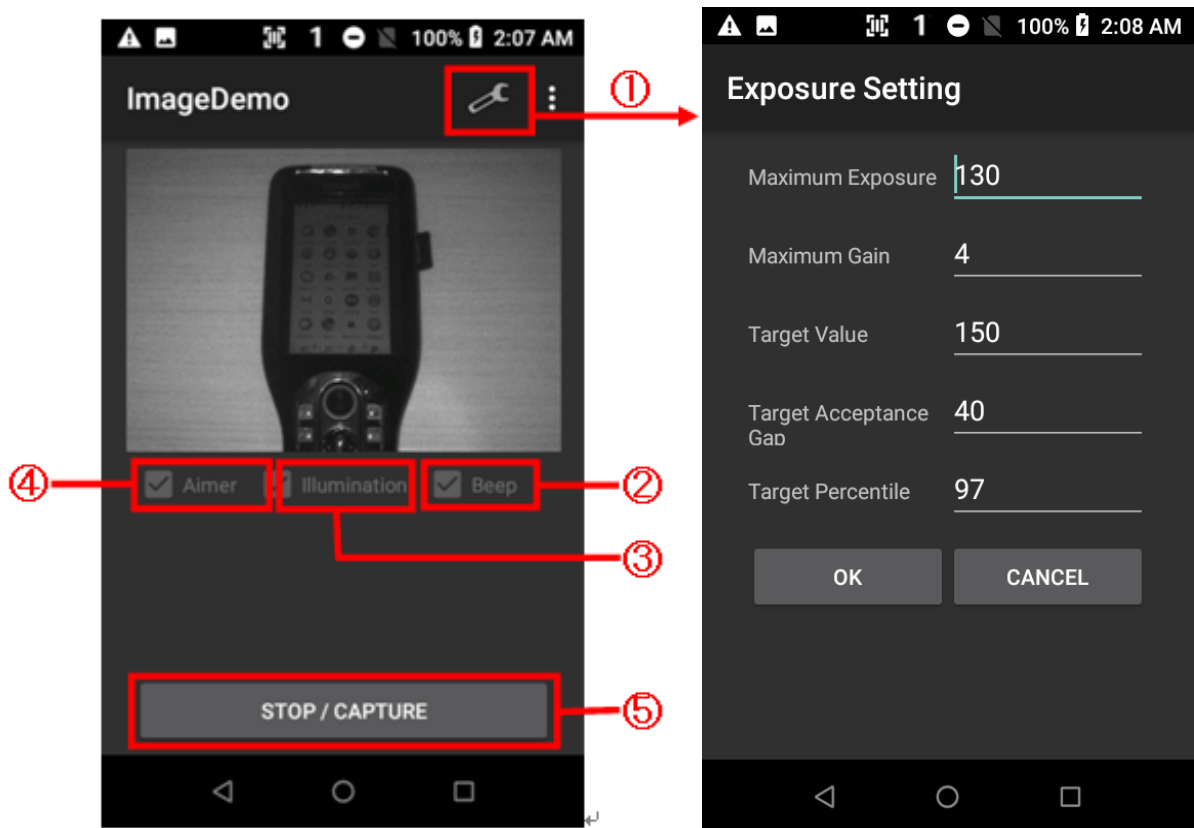
The 'NMEA' screen displays raw NMEA data. The data is shown as a list of strings, each representing a sentence of NMEA data. The strings are prefixed with '\$' and contain various GPS coordinates, time, and other data. The data is shown in a scrollable list.

④Settings



5.2 ImageDemo

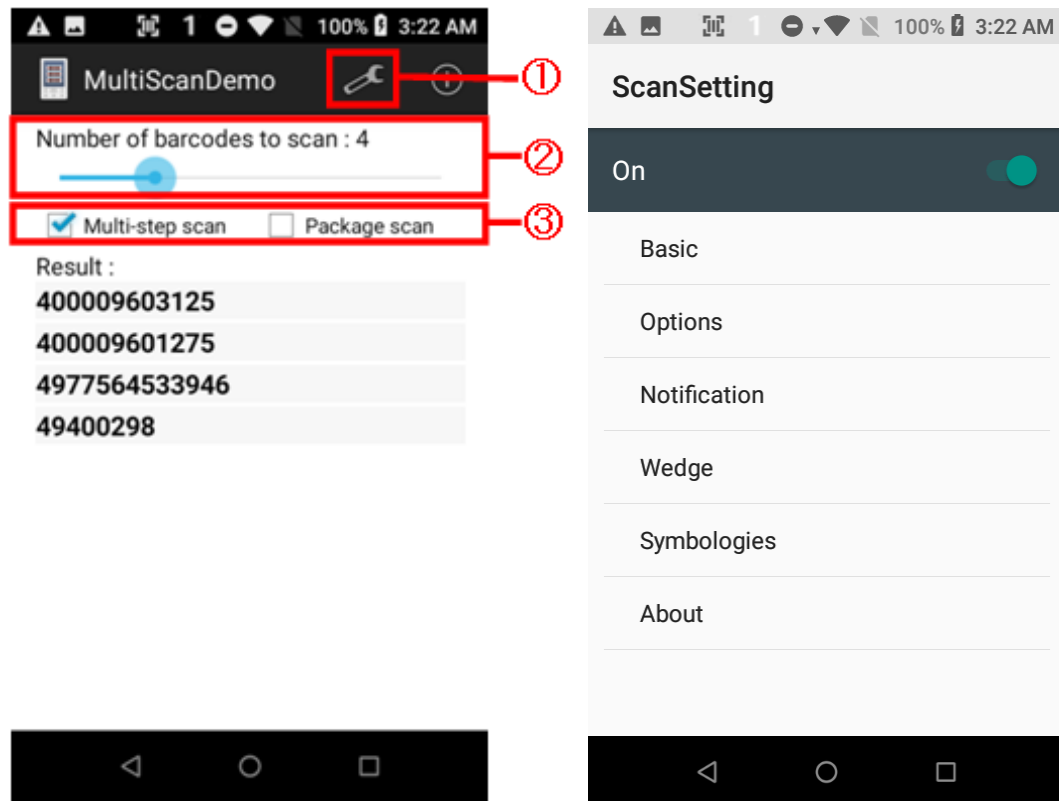
This software is used to confirm that capture the image by barcode scanner.



- ① Open exposure setting
- ② Enable / disable buzzer at image capture
- ③ Enable / disable illumination at image capture
- ④ Enable / disable the aimer at image capture
- ⑤ Start and stop image capture

5.3 MultiScanDemo

This software is used to confirm that multiscan by barcode scanner.



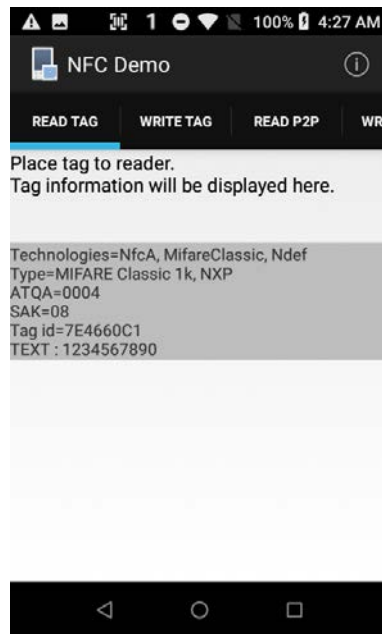
- ① Launch "ScanSetting"
- ② Set the number of barcodes to read
- ③ Switch between "Multi-step scan" and "Package scan"

5.4 NFC Demo

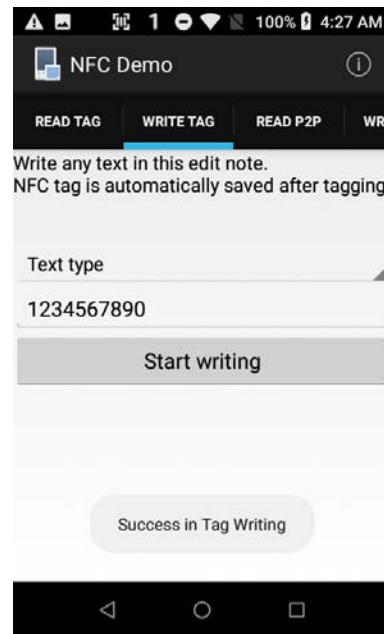
This software is used to confirm that NFC operates.

TAG READ/WRITE

Read and write tags.



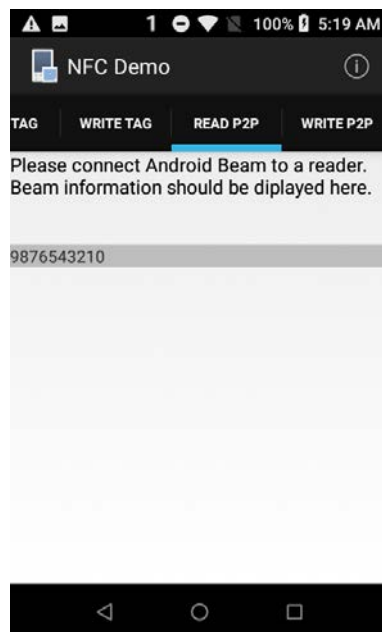
READ



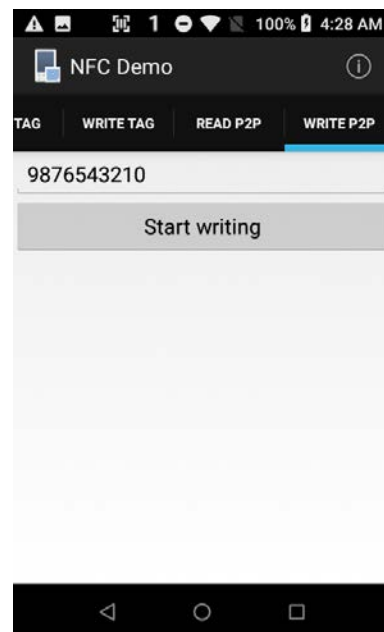
WRITE

P2P READ/WRITE

Reading and writing are performed using beam communication between the DT-X400.



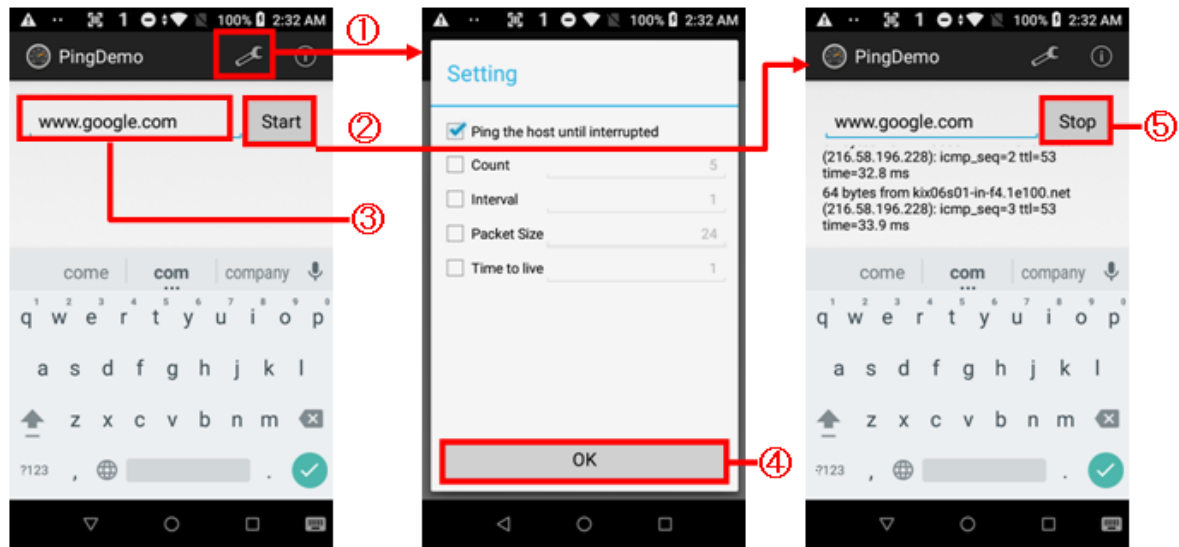
READ



WRITE

5.5 PingDemo

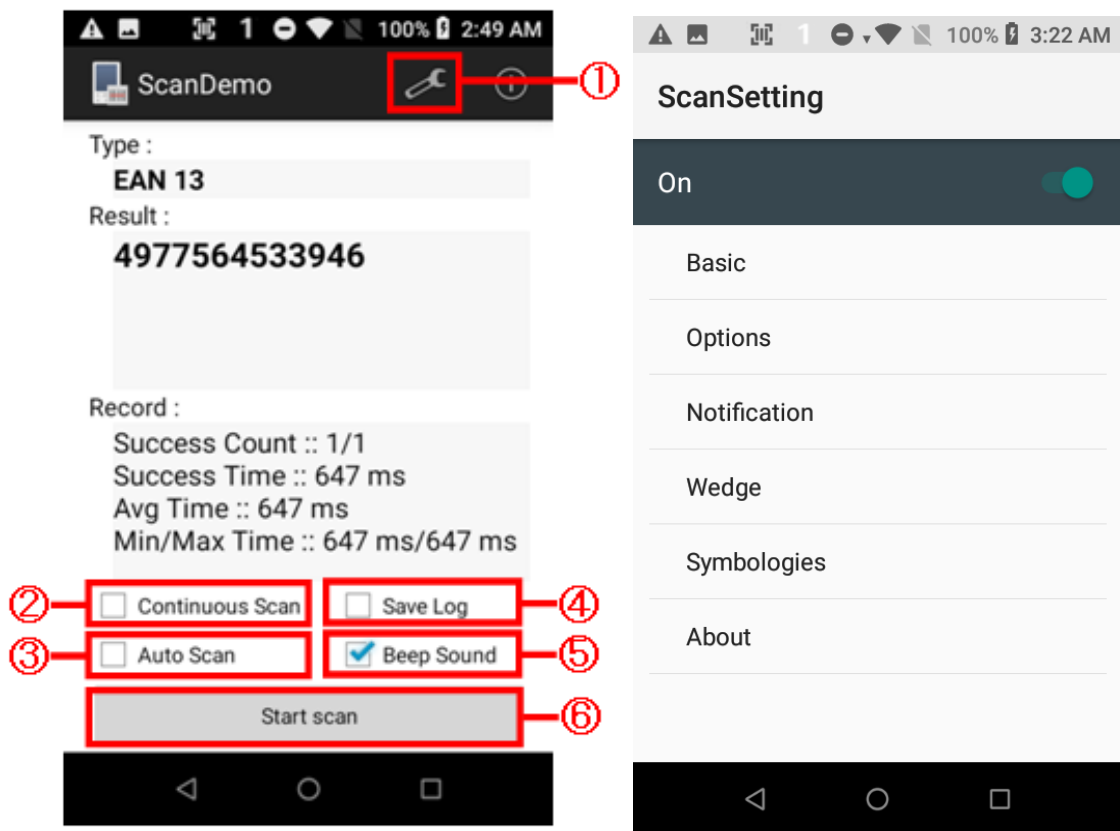
This software is used to confirm that network connection is working.



- ① Settings
- ② Start ping
- ③ Specify server address
- ④ Setting complete
- ⑤ Stop ping

5.6 ScanDemo

This software is used to confirm that barcode scanner is working.



- ① Launch "ScanSetting"
- ② Enable / disable continuous scanning
- ③ Enable / disable auto scanning
- ④ Enable / disable log output
- ⑤ Enable / disable buzzer sound
- ⑥ Start barcode scanning

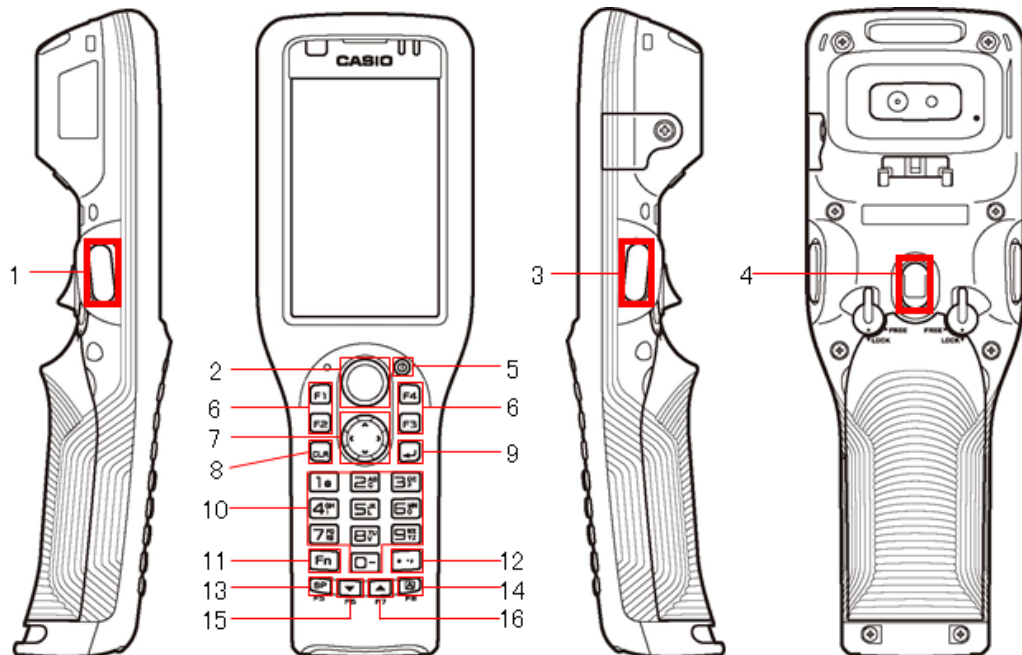
6. Operation Support Tools

6.1 List of software

No.	Apps	Name and functions
		Operation support tools folder
1		Program Buttons Use to assign another function to hardware key.
2		ScanSetting Use to set up the barcode scanner. Effective when you do not develop special program such as web application for barcode scanner control.
3		Power Launcher Use to invalidate the home button and setting.
4		SIP Control Use to invalidate the Automatic display of SIP.
5		Backup&Restore It is used to Backup / Restore the terminal settings (part of Android settings) and installed user applications.
6		System Information Tool that Casio has prepared for Casio in order to check product information.
7		Take bug report This is equivalent to "Take bug report" in "Developer options" on Android.

6.1.1 Program Buttons

This tool can assign another function to the hardware keys such as trigger key and function key.



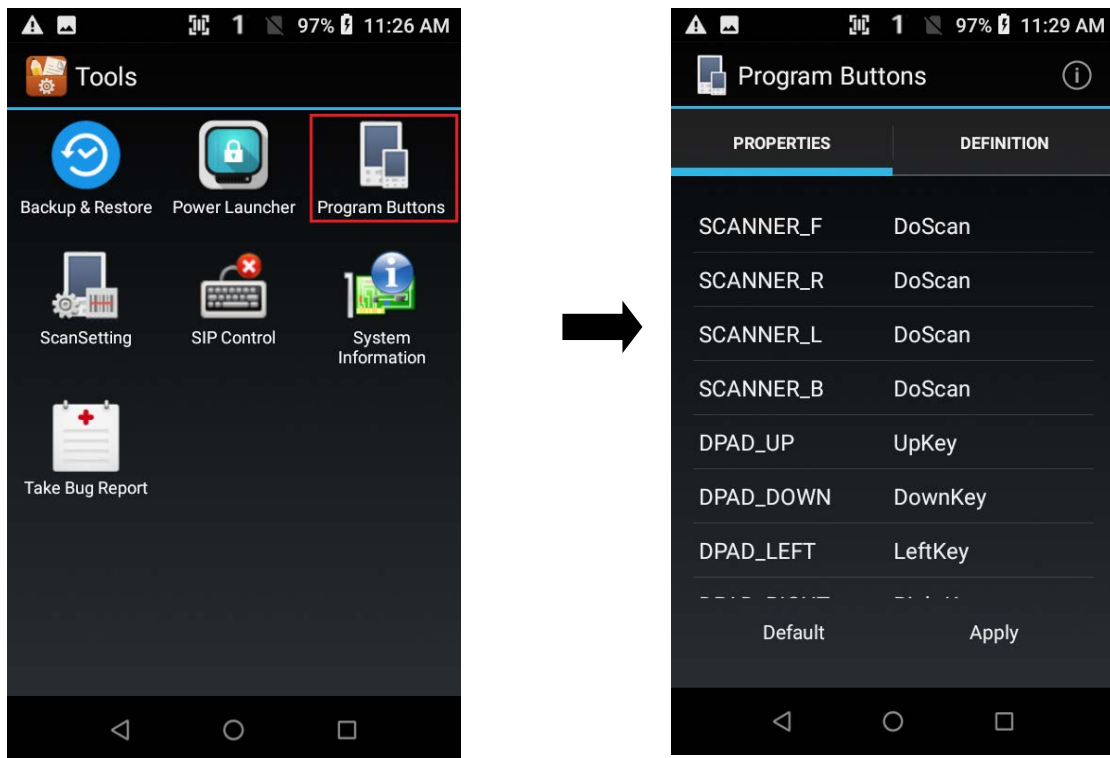
No.	Key	Default function	
1	Left Trigger Key	DoScan	Start scanning a barcode by barcode scanner
2	Center Trigger Key	DoScan	
3	Right Trigger Key	DoScan	
4	Back Trigger Key	DoScan	
5	Power Key	-	Can not change the function
6	F1 Key	F1Key	Issue the F1 key
	F2 Key	F2Key	Issue the F2 key
	F3 Key	F3Key	Issue the F3 key
	F4 Key	F4Key	Issue the F4 key
7	Cursor Up Key	UpKey	Move the cursor to up
	Cursor Down Key	DownKey	Move the cursor to down
	Cursor Left Key	LeftKey	Move the cursor to left
	Cursor Right Key	RightKey	Move the cursor to right
8	CLR Key	BkspKey	Backspace (Delete a character before the cursor)
9	Enter Key	ReturnKey	Confirm input
10	Numeric Key	Key0 - Key9	Input numeric/alphabet/symbol
11	Fn Key	-	Can not change the function
12	Period Key	DotKey	Input period/symbol
13	SP Key	SpaceKey	Input space
14	Mode Key	KeypadModeKey	Change input mode
15	Volume Down Key	VolumeDown	Volume down
16	Volume Up Key	VolumeUp	Volume up

The assignable functions are shown in the table below.

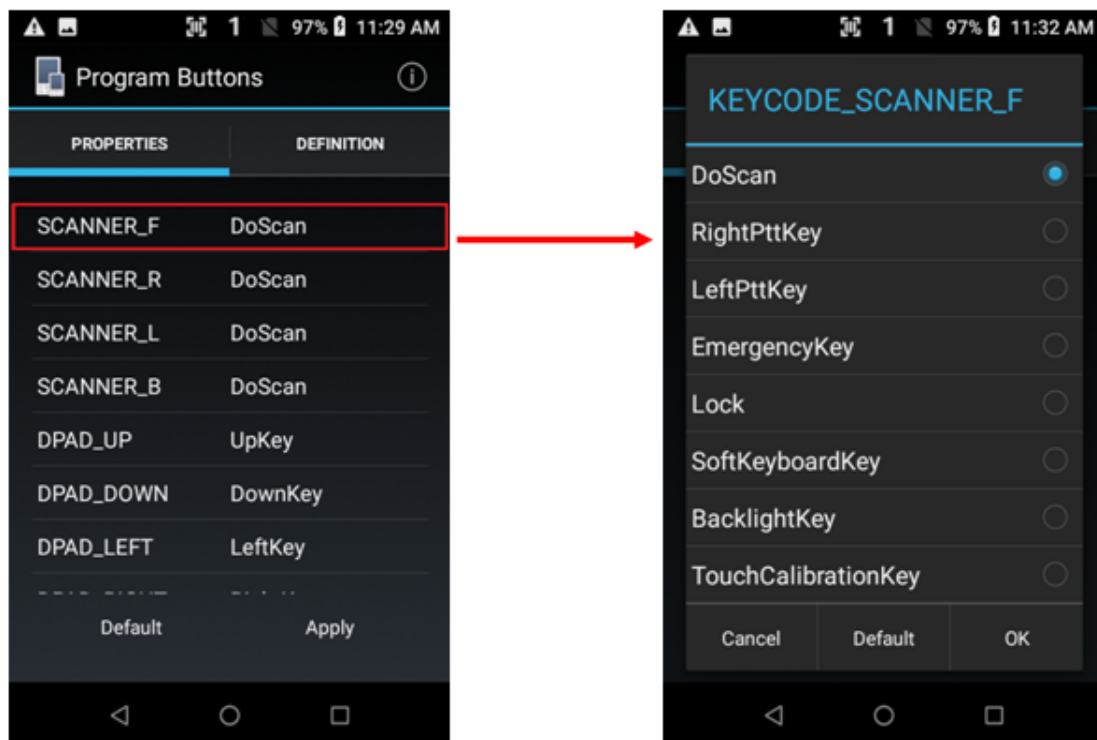
No.	Function Name	Function	Android keycode
1	NoAction	Do nothing	-
2	DoScan	Start scanning a barcode	-
3	RightPttKey	(System reserved)	-
4	LeftPttKey	(System reserved)	-
5	EmergencyKey	(System reserved)	-
6	Lock	Show Lock screen	-
7	SoftKeyboardKey	SIP	-
8	BacklightKey	Toggle display backlight on/off	-
9	TouchCalibrationKey	Touchpanel calibration	-
10	KeyboardBacklightKey	Toggle keyboard backlight on/off	-
11	BrightnessUP	Brighten screen brightness	-
12	BrightnesDown	Darken screen brightness	-
13	BkspKey	Backspace key	KEYCODE_DEL
14	HomeKey	Home button	KEYCODE_HOME
15	BackKey	Back button	KEYCODE_BACK
16	MenuKey	Menu key	KEYCODE_MENU
17	AppSwitchKey	Application switch (History) button	KEYCODE_APP_SWITCH
18	Upkey	Up Cursor	KEYCODE_DPAD_UP
19	DownKey	Down Cursor	KEYCODE_DPAD_DOWN
20	LeftKey	Left Cursor	KEYCODE_DPAD_LEFT
21	RightKey	Right Cursor	KEYCODE_DPAD_RIGHT
22	VolumeUp	Volume Up	KEYCODE_VOLUME_UP
23	VolumeDown	Volume Down	KEYCODE_VOLUME_DOWN
24	DelKey	Delete key	KEYCODE_FORWARD_DEL
25	TabKey	Tab key	KEYCODE_TAB
26	EscKey	Esc key	KEYCODE_ESCAPE
27	ReturnKey	Return key	KEYCODE_ENTER
28	SpaceKey	SP Key	-
29	DotKey	Period Key	-
30	Send	Call key	KEYCODE_CALL
31	End	End call key	KEYCODE_ENDCALL
32	Vibrator	Switch Manner mode	KEYCODE_MANNER_MODE
33	Camera	Camera Shutter	KEYCODE_CAMERA
34	F1Key	F1 key	-
35	F2Key	F2 key	-
36	F3Key	F3 key	-
37	F4Key	F4 key	-
38	F5Key	F5 key	-
39	F6Key	F6 key	-
40	F7Key	F7 key	-
41	F8Key	F8 key	-
42	F9Key	F9 key	-
43	F10Key	F10 key	-
44	F11Key	F11 key	-
45	F12Key	F12 key	-
46	RunApplication	Launch specified application	-
47	BroadcastKey	(System reserved)	-
48	CustomIntent	Issuing specified intent	-

How to launch Program Buttons

From [Application List], select [Tool] -> [CPU setting].



Touch the key for which you want to change the default assignment, a list of configurable functions is displayed. Select the function you want to assign and press [OK].



6.1.2 ScanSetting

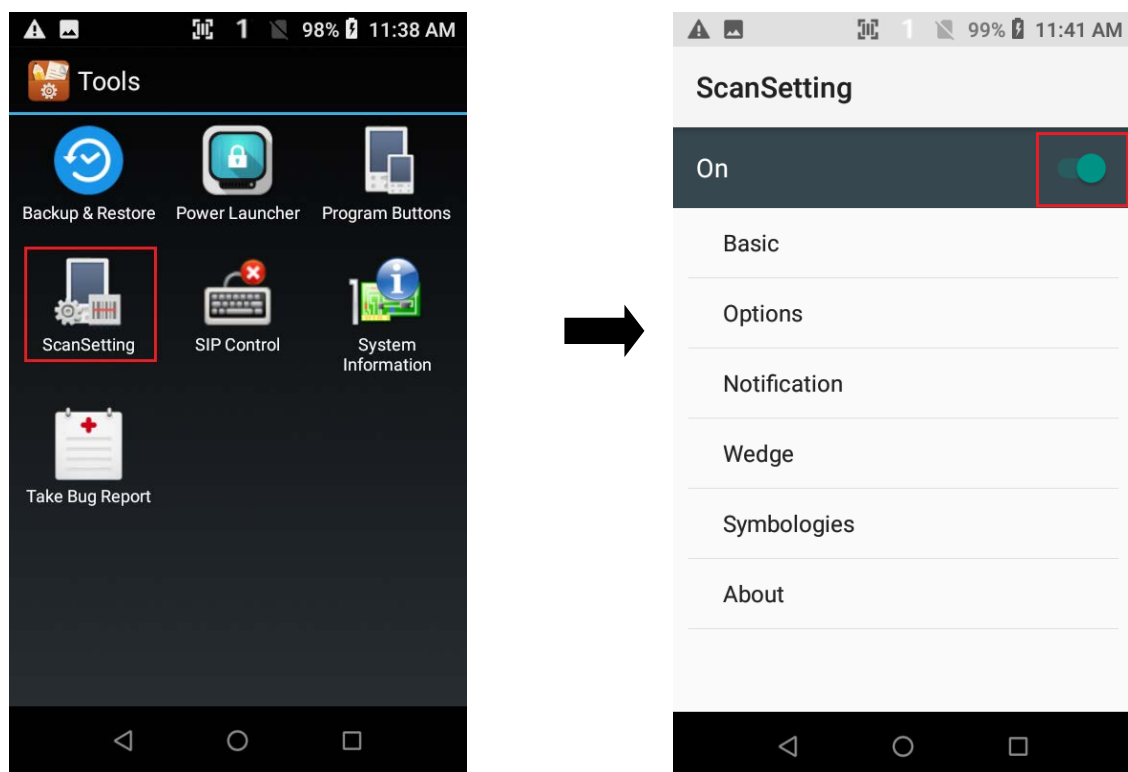
ScanSetting is used to configure barcode scanner. This is useful when you use application which doesn't directly control barcode scanner such as web application.

Using DeviceLibrary, you can implement similar functionality in your application. In such case, you do not need to use the ScanSetting.

How to launch ScanSetting

From the [Application List] on the home screen, select [Tools] → [ScanSetting].

When ScanSetting is launched, slide a switch on the upper right to on, then various settings are enabled.



Function	Default value	Choseable value
Basic		
Scanning		
Trigger timeout (sec)	10 seconds	Select waiting time from pressing trigger key to bar code reading.
Enable continuous scan	Disable	When enabled, repeat barcode scanning while the trigger key is pressed. [Enable], [Disable]
Multi-step scan	Disable	When enabled, repeat barcode scanning while the trigger key is pressed. Reads the specified number of barcodes and outputs data each time the reading is successful. [Enable], [Disable]
Package scan (2D only)	Disable	When enabled, barcode scanning while the trigger key is pressed. Reads the specified number of barcodes and outputs data at onse if

			it is success. [Enable], [Disable]
	Number of barcodes to scan (2D only)	4	Set the number of barcodes to be scanned in Multi-step scan or Package scan. [2], [3], [4], [5], [6], [7], [8], [9], [10]
	Delimiter for Package scan (2D only)	US	[None], [SOH], [STX], [EXT], [EOT], [ENQ], [ACK], [BEL], [BS], [HT], [LF], [VT], [FF], [CR], [SO], [SI], [DLE], [DC1], [DC2], [DC3], [DC4], [NAK], [SYN], [ETB], [CAN], [EM], [SUB], [ESC], [FS], [GS], [RS], [US]
Wedge mode			
	Result type	Clipboard	Select how to output the scanned barcode data. [User Message], [Keyboard Event], [Clipboard], [Intent Broadcast]
	Terminator	None	Select barcode terminator. [None], [Space], [TAB], [LF], [TAB & LF]
Options			
Options			
	Centering window mode (2D only)	Disable	Toggles priority reading of the barcode near the center. [Enable], [Disable]
	Detection area size (2D only)	5	Set the detection area size. [0], [1], [2], [3], [4], [5], [6], [7], [8], [9], [10]
	Inverse 1D mode	Regular Type Only	Select Inverse 1D mode. [Regular Type Only], [Inverse Type Only], [Inverse Auto Detect]
	Power save mode (2D only)	Enable	Select Power save mode. [Enable], [Disable]
	Power save timeout(sec) (2D only)	60 seconds	Set the auto power off time. 1 - 65535 seconds
	Enable aimer (2D only)	Enable	Toggle aimer. [Enable], [Disable]
	Enable illumination (2D only)	Enable	Toggle illumination. [Enable], [Disable]
	Laser highlight (1D only)	Disable	Toggle laser highlight mode. [Enable], [Disable]
	Laser swing width (1D only)	Max	Set the laser swing width. [Max], [Wide], [Middle], [Narrow]
	Laser swing width calibration (1D only)	-	Calibrate the laser swing width for 1D scanner.
Notification			
Beep			
	Enable beep	Enable	Toggle beep. [Enable], [Disable]
	Media volume		Set the volume by slide bar.
	Good read	ScanSuccess.wav	Select the sound when read success. [None], [ScanSuccess.wav], [Camera.wav], [ScanFail.wav], [ScanSuccess2.wav], [ScanSuccess3.wav]
	Bad read	ScanFail.wav	Select the sound when read fail. [None], [ScanSuccess.wav], [Camera.wav], [ScanFail.wav], [ScanSuccess2.wav], [ScanSuccess3.wav]
LED			

	Enable LED	Enable	Toggle LED. [Enable], [Disable]
	Vibrator		
	Enable vibrator	Disable	Toggle vibrator. [Enable], [Disable] When enabled, chose the operating time. [0.0sec], [0.3sec], [0.6sec], [0.9sec], [1.2sec], [1.5sec], [1.8sec], [2.1sec], [2.4sec], [2.7sec], [3sec]
	Wedge		
	Barcode ID		
	Transmit barcode ID	Disable	[Enable], [Disable]
	Transmit aim ID	Disable	[Enable], [Disable]
	Group separator	GS	[SOH], [STX], [EXT], [EOT], [ENQ], [ACK], [BEL], [BS], [HT], [LF], [VT], [FF], [CR], [SO], [SI], [DLE], [DC1], [DC2], [DC3], [DC4], [NAK], [SYN], [ETB], [CAN], [EM], [SUB], [ESC], [FS], [GS], [RS], [US]
	Label		
	Prefix	None	Any character string
	Suffix	None	Any character string
	Character set		
	Charset	UTF-8	Select the character set when output the scan result. [UTF-8], [UTF-16], [UTF-16BE], [UTF-16LE], [US-ASCII], [ISO-8859-1], [EUC-KR], [Shift-JIS], [windows-1250], [windows-1251], [windows-1252], [windows-1253], [windows-1254], [windows-1257]
	Symbolologies		
	AZTEC (2D only)	Enable	[Enable], [Disable], [Details※]
	CODABAR	Enable	[Enable], [Disable], [Details※]
	CODE 11 (2D only)	Disable	[Enable], [Disable], [Details※]
	CODE 128	Enable	[Enable], [Disable], [Details※]
	CODE 39	Enable	[Enable], [Disable], [Details※]
	CODE 93	Enable	[Enable], [Disable], [Details※]
	COMPOSITE A/B (2D only)	Disable	[Enable], [Disable], [Details※]
	DATAMATRIX (2D only)	Enable	[Enable], [Disable], [Details※]
	EAN 8	Enable	[Enable], [Disable], [Details※]
	EAN 13	Enable	[Enable], [Disable], [Details※]
	INTERLEAVED 2 OF 5	Enable	[Enable], [Disable], [Details※]
	MAXICODE (2D only)	Enable	[Enable], [Disable], [Details※]
	MICRO PDF417 (2D only)	Enable	[Enable], [Disable], [Details※]
	OCR (2D only)	Disable	[Enable], [Disable], [Details※]
	PDF417 (2D only)	Enable	[Enable], [Disable], [Details※]

QR CODE (2D only)	Enable	[Enable], [Disable], [Details※]
REDUCED SPACE SYMBOLGY	Enable	[Enable], [Disable], [Details※]
UPC A	Enable	[Enable], [Disable], [Details※]
UPC E	Enable	[Enable], [Disable], [Details※]
STRAIGHT 2 OF 5 (IATA) (2D only)	Disable	[Enable], [Disable], [Details※]
CODABLOCK F (2D only)	Disable	[Enable], [Disable], [Details※]
MSI (2D only)	Disable	[Enable], [Disable], [Details※]
TCIF LINKED CODE 39 (TLC39) (2D only)	Disable	[Enable], [Disable], [Details※]
TRIOPTIC CODE 39	Disable	[Enable], [Disable], [Details※]
CODE 32 PHARMACEUTICAL (PARAF) (2D only)	Disable	[Enable], [Disable], [Details※]
MATRIX 2 OF 5	Disable	[Enable], [Disable], [Details※]
TELEPEN (2D only)	Disable	[Enable], [Disable], [Details※]
GS1 128(EAN 128)	Enable	[Enable], [Disable], [Details※]
ISBT 128 (2D only)	Disable	[Enable], [Disable], [Details※]
STRAIGHT 2 OF 5 (IATA) (2D only)	Disable	[Enable], [Disable], [Details※]
UCC COUPON (2D only)	Disable	[Enable], [Disable], [Details※]
HAN XIN (2D only)	Disable	[Enable], [Disable], [Details※]
UPC E1	Disable	[Enable], [Disable], [Details※]
CHINA POST	Disable	[Enable], [Disable], [Details※]
KOREAN 3 OF 5 (2D only)	Disable	[Enable], [Disable], [Details※]
AUSTRALIA POST (2D only)	Disable	[Enable], [Disable], [Details※]
BRITISH POST(BPO) (2D only)	Disable	[Enable], [Disable], [Details※]
CANADIAN POST (2D only)	Disable	[Enable], [Disable], [Details※]
USPS 4CB (2D only)	Disable	[Enable], [Disable], [Details※]
JAPAN POSTAL (2D only)	Enable	[Enable], [Disable], [Details※]
NETHERLANDS KIX CODE (2D only)	Disable	[Enable], [Disable], [Details※]
US PLANET (2D only)	Disable	[Enable], [Disable], [Details※]
UPU FICS POSTAL (2D only)	Disable	[Enable], [Disable], [Details※]
US POSTNET (2D only)	Disable	[Enable], [Disable], [Details※]
BOOKLAND EAN (1D only)	Disable	[Enable], [Disable], [Details※]
DISCRETE 2 OF 5 (1D only)	Disable	[Enable], [Disable], [Details※]

MSI/PLESSY (1D only)	Disable	[Enable], [Disable], [Details※]
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This "Scansettng" can change the setting of various Barcodes, but the barcodes not supported by DT-X400 are also included in the list. Please refer to 2.14 Barcode scanner (p.35) for the barcode that supports.

Select "Symbologies", and tap on each barcode to switch to the detailed setting screen.

On the detailed setting screen, you can set the number of digits to read barcode and enable / disable of character calculation. Please refer to the Device Library Manual for possible values of each setting.

Do not change the Barcode ID for each barcode. Discrimination after barcode reading will not operate properly.

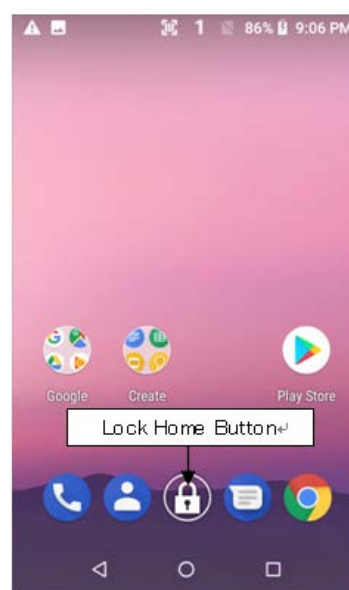
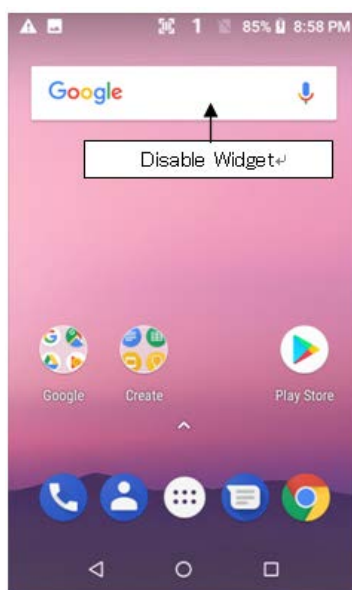
Depending on the specification of the barcode scanner module, it is not possible to specify more than one POSTAL code. And, at least one POSTAL code must be enabled. The default for DT-X400 is JAPAN POSTAL.

6.1.3 Power Launcher

Power launcher locks "Home" and "Settings" so as not to let the general operator operate. For business use terminals, there is a request that "Do not want to use the terminal for applications not intended by the administrator". Power launcher is used for this purpose.

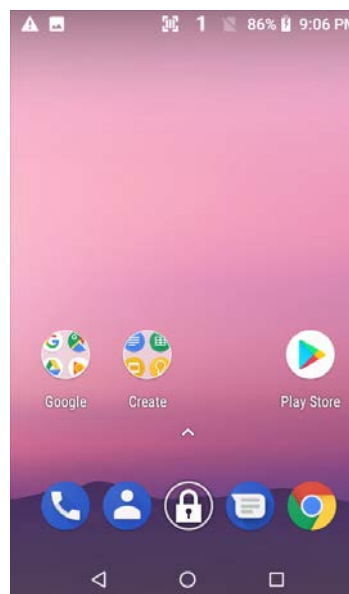
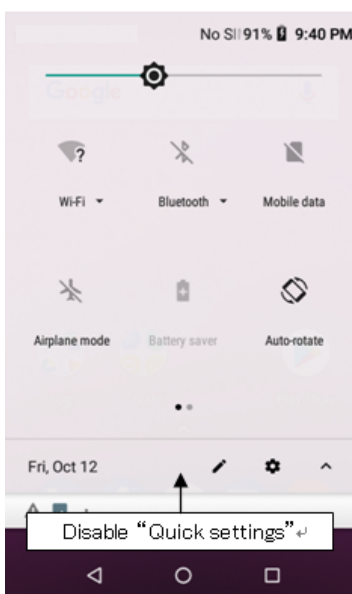
Function of Power Launcher

- (1) Lock the home button (request password for unlocking)
- (2) Disable Widget
- (3) Invalidate setting
- (4) Disable quick setting
- (5) Disable MTP connection
- (6) Disable Screenshot



Left: "Power launcher" is disabled. "Home" and widgets is operable.

Right: "Power launcher" is enabled. "Home" is locked, and widgets are disappeared.

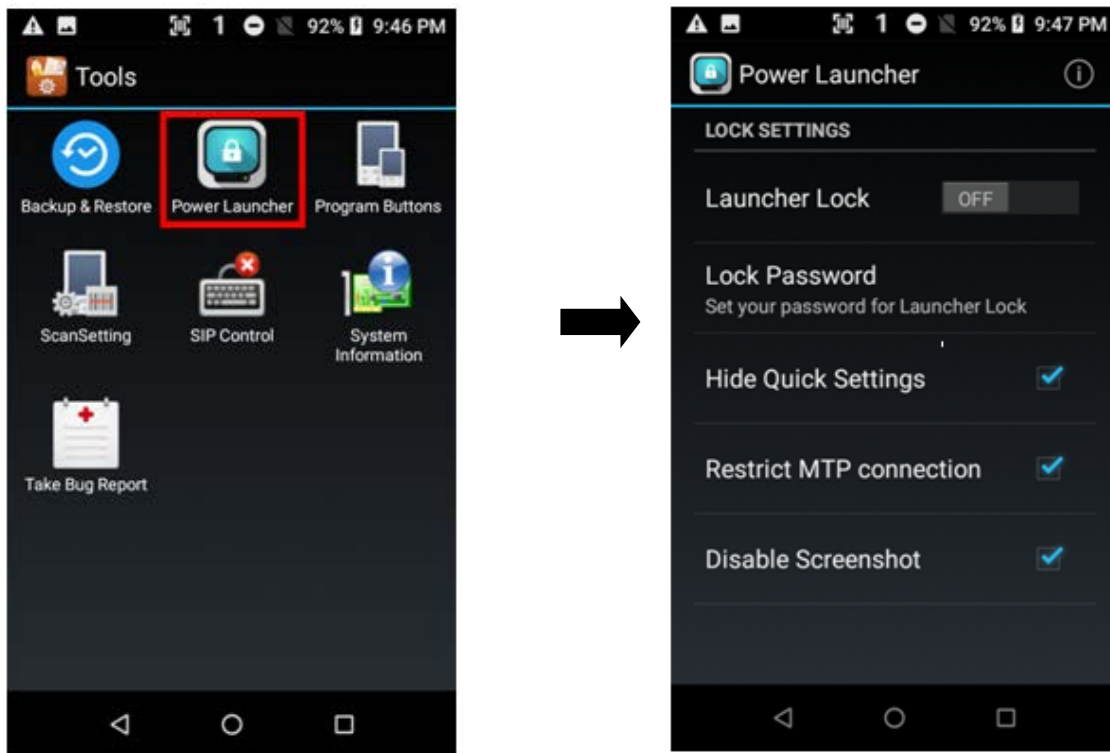


Left: "Power launcher" is disabled. "Quick settings" is operable.

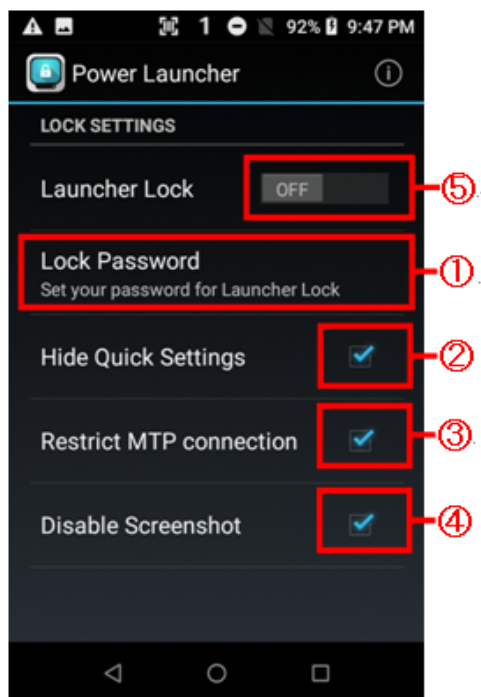
Right: "Power launcher" is enabled. "Quick settings" is disappeared.

How to launch Power Launcher

From the [Application List], select [Tools] → [Power Launcher].



To use the power launcher, follow the procedure below.



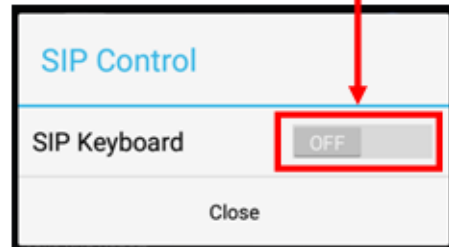
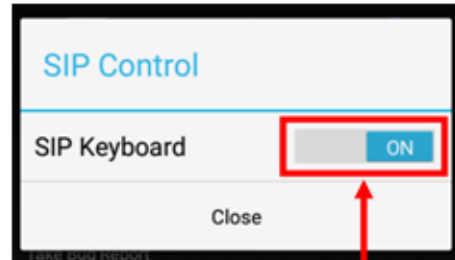
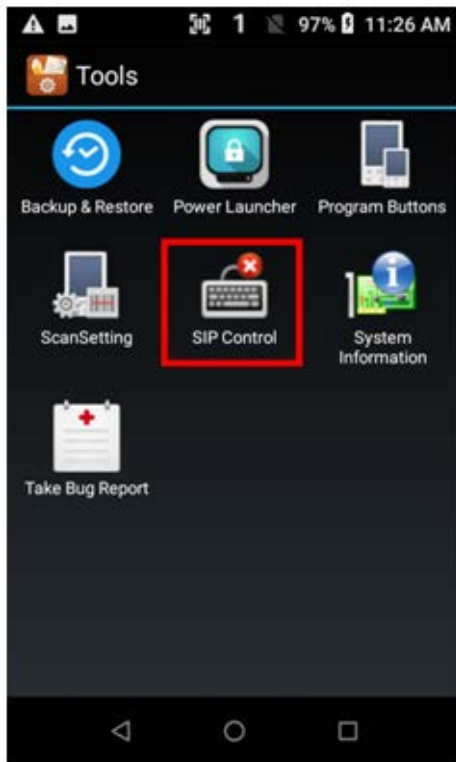
- ① Set the password to open the key
Passwords must be alphanumeric
characters including one or more
alphabetic characters.
- ② Lock quick setting
If checked, disables quick setting during
launcher lock.
- ③ Disable MTP connection
If checked, MTP connection with PC is
disabled.
- ④ Disable Screenshot
If checked, Screenshot is disabled.
- ⑤ Enable / disable launcher lock
Sliding to the right turns the launcher
lock on (locked). To disable (unlock),
slide to the left and enter the password.

6.1.4 SIP Control

SIP Control is used to Use to invalidate the Automatic display of SIP.

How to launch SIP Control

From [Application List], select [Tool] -> [SIP Control] .



Press the ON / OFF button to toggle SIP Control "Enable" or "Disable".

6.1.5 Backup & Restore

"Backup & restore" is used to back up / restore the following system settings and installed applications.

Cautions!

Be sure to restore the backed-up data with the same OS version.

Backup target

SYSTEM SETTINGS

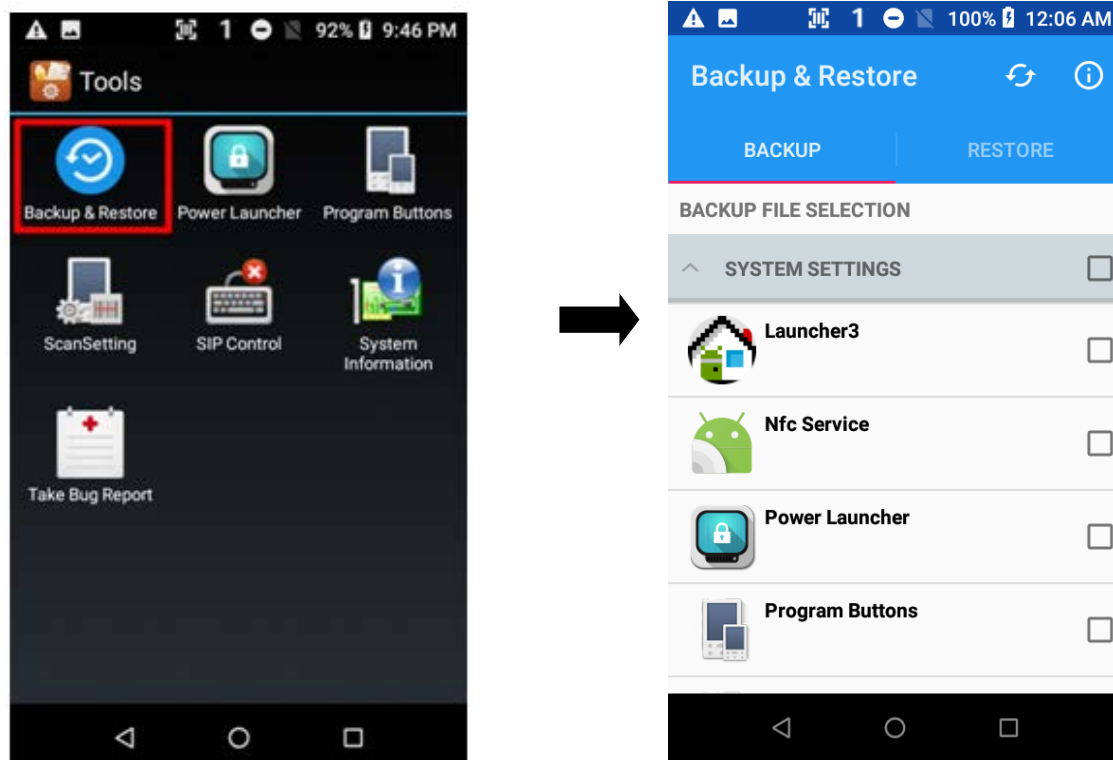
Save System settings (Storage, Launcher) and settings of tools (ScanSetting, Power Launcher, Program Button, NFC Service). Please refer to the Device Library Manual for possible values that can be backed up and restored by the ScanSetting.

USER APPLICATIONS

Back up the application installed by the user. However, depending on the application, backup may not be supported, or even if backup can be performed, restoration may not be possible. Do enough test before actual usage. Launch an application which you installed at least once. Otherwise, you can not back it up.

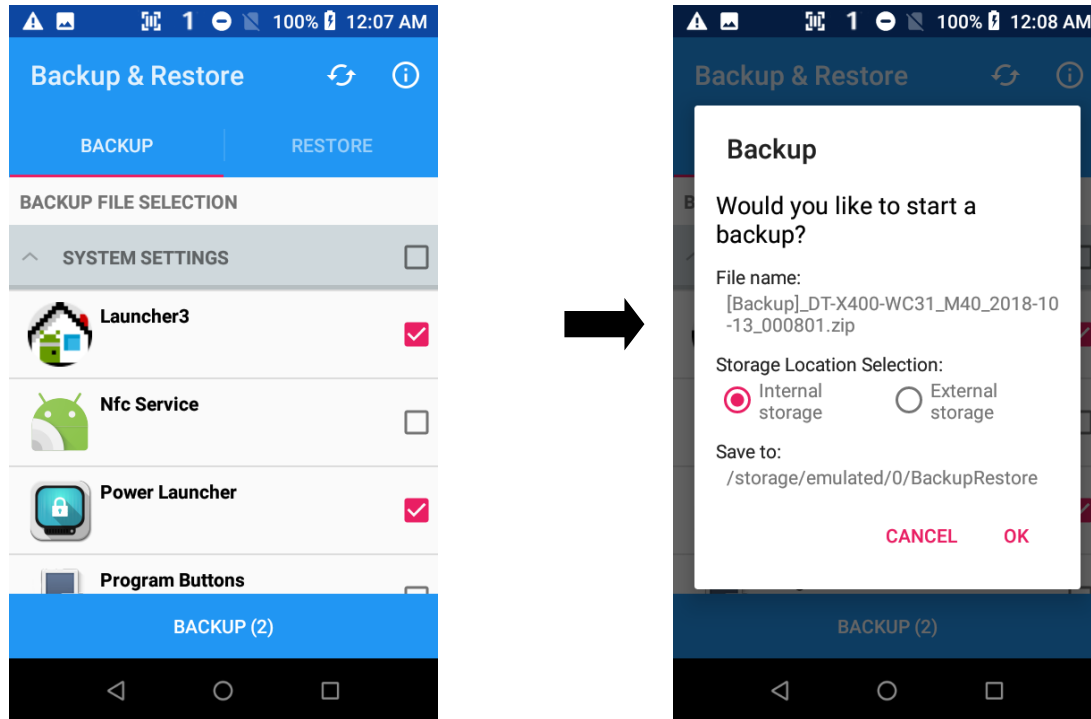
How to launch Backup & Restore

From [Application List], select [Tools] -> [Backup & Restore].



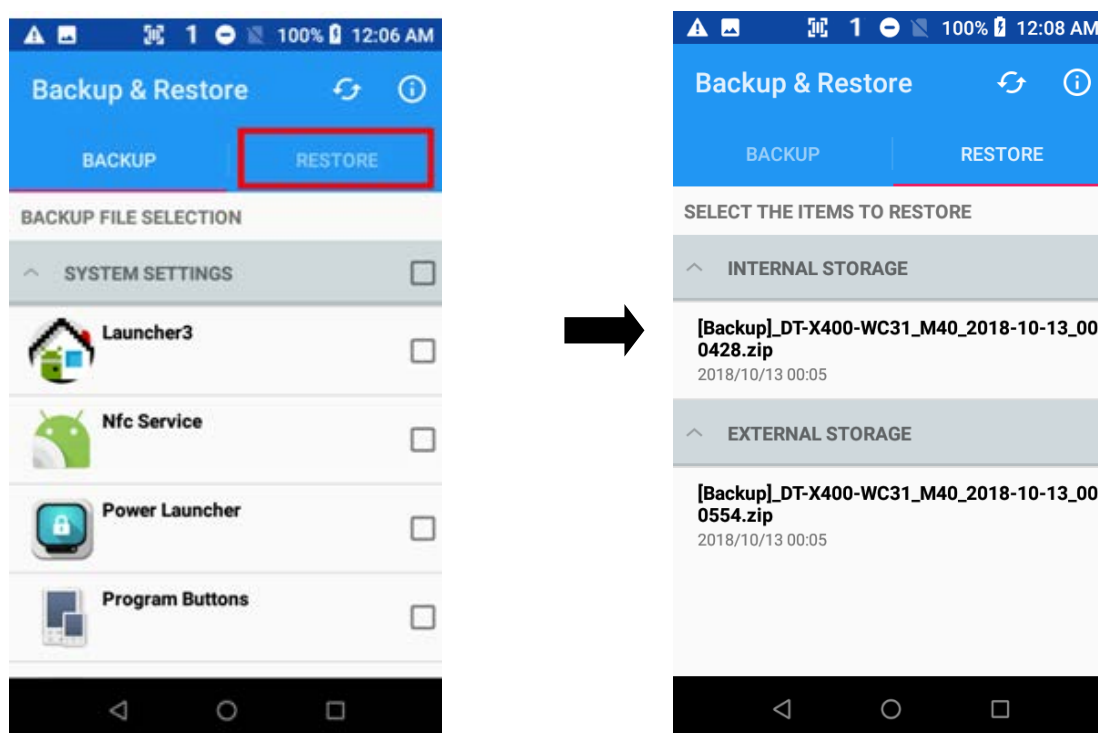
How to backup

Select the file to be backed up and press the BACKUP button at the bottom of the screen to display the dialog box for selecting the save destination. You can specify the internal storage (/storage/emulated/0/BackupRestore) or microSD card (/storage/sdcard1/BackupRestore) as the backup data storage destination.



How to restore

After starting "Backup & Restore", select RESTORE in the upper right corner of the screen. A list of data saved in the past will be displayed, so select the data you want to restore.

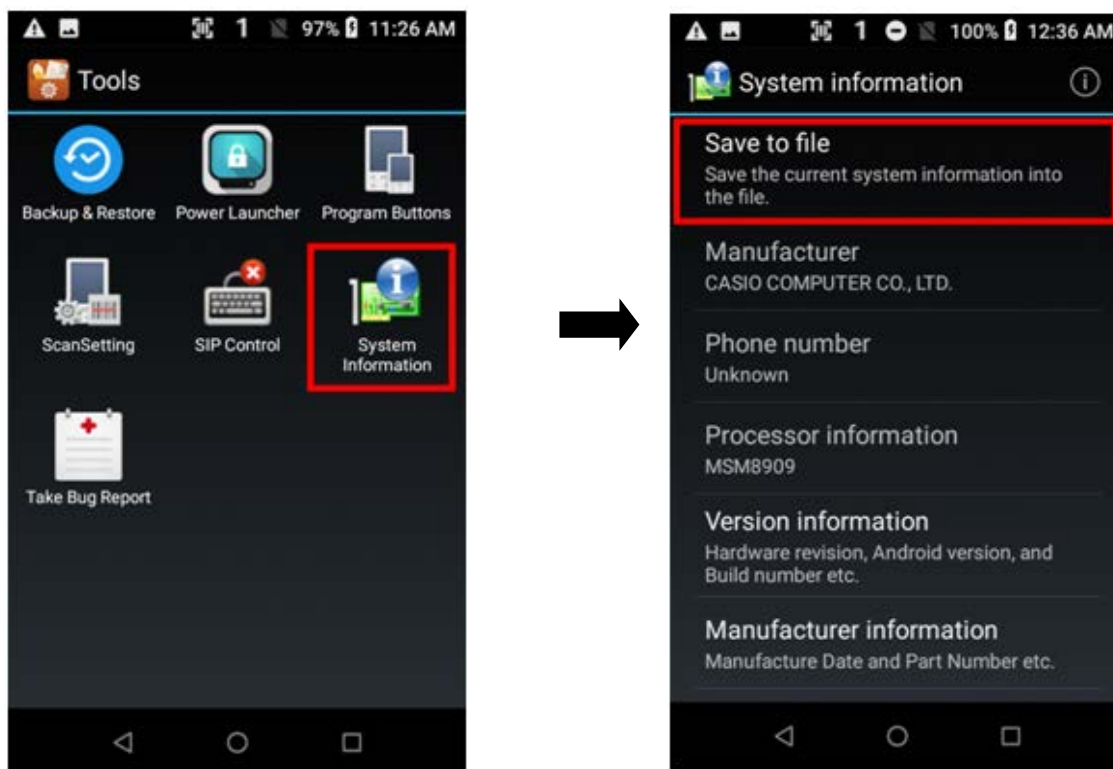


6.1.6 System Information

"System Information" is prepared by Casio Computer for confirming product information and it is not a tool for customers.

How to launch System Information

From [Application List], select [Tool] -> [System Information]. When the "System Information" starts up, you can write the acquired product information to the file (/storage/emulated/0/devinfo.html) by pressing [Save to file].



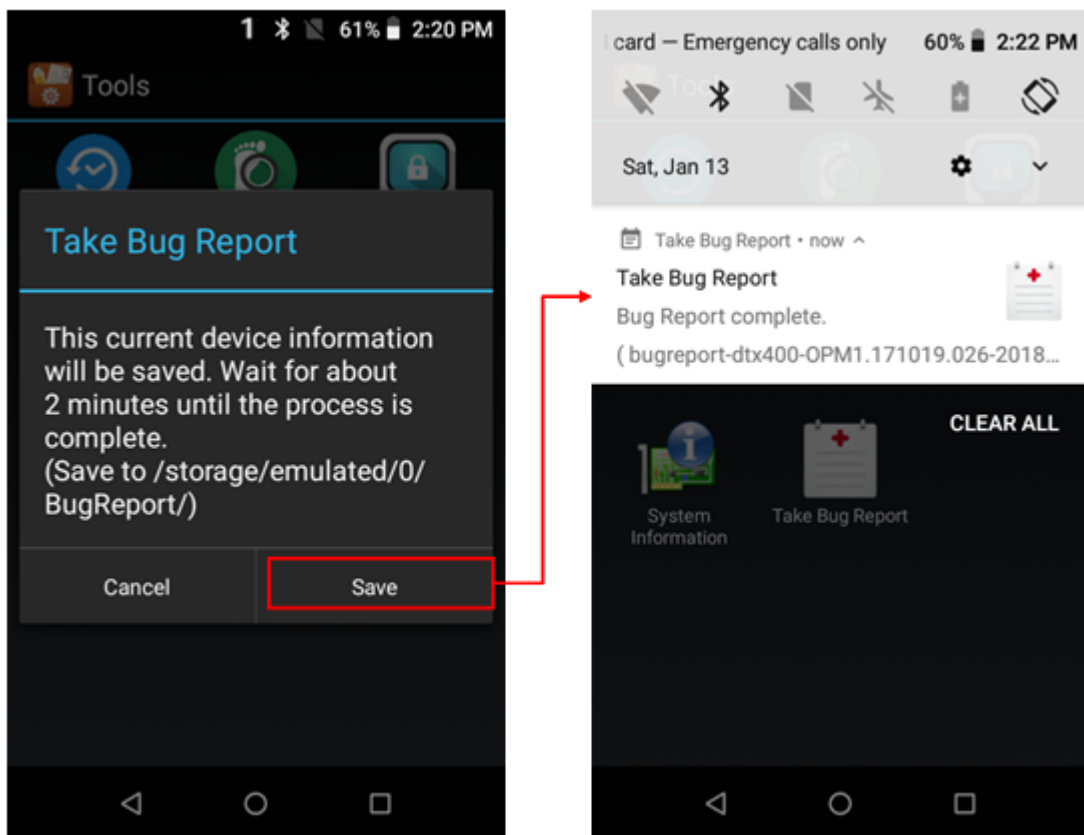
6.1.7 Take bug report

"Take bug report" is equivalent to "Take bug report" in "Developer options". The created bug report is stored in the /storage/emulated/0/BugReports folder.

How to launch Take bug report

From [Application List], select [Tools] → [Take bug report]

Bug report is "debugging information including OS state (memory, process, stack, etc.)" and it takes from several tens of seconds to several minutes to acquire. When acquisition is completed, notification will be issued as shown below.

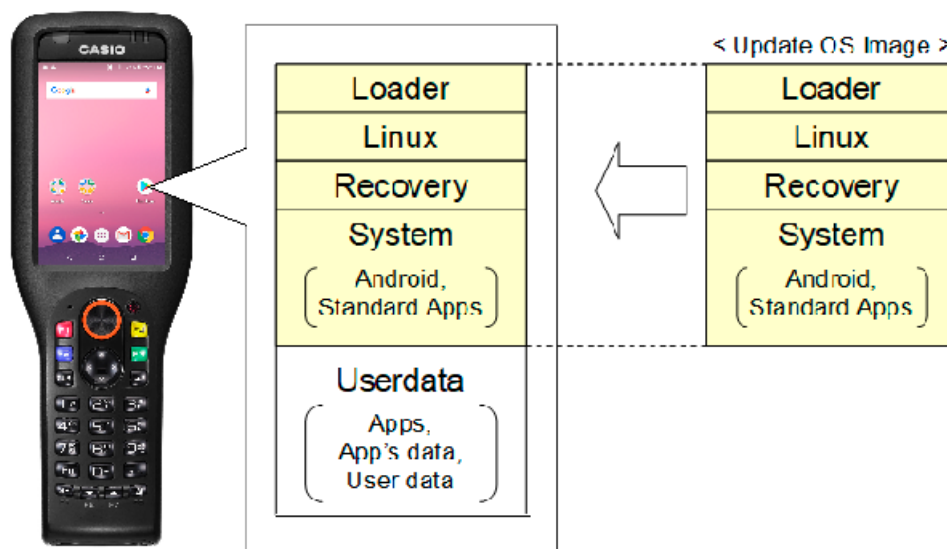


7. Maintenance Tools

7.1 OS Update

The software (Android, Linux, driver, standard installed application) written at shipment from the factory of DT-XG400 is called "OS", and the place where it is written is called "system area".

On the other hand, the application installed by the user, its data area, and the internal memory area are collectively called "user data" or "user area".



If it is necessary to modify the OS due to security correspondence etc., we may provide a modified a "OS update image". The function of rewriting the OS is called "OS Update (System Update)".

In OS Update, since only the system area is rewritten, it does not affect the user data. However, in preparation for unexpected circumstances, recommend that backup data before updating the system.

Cautions!

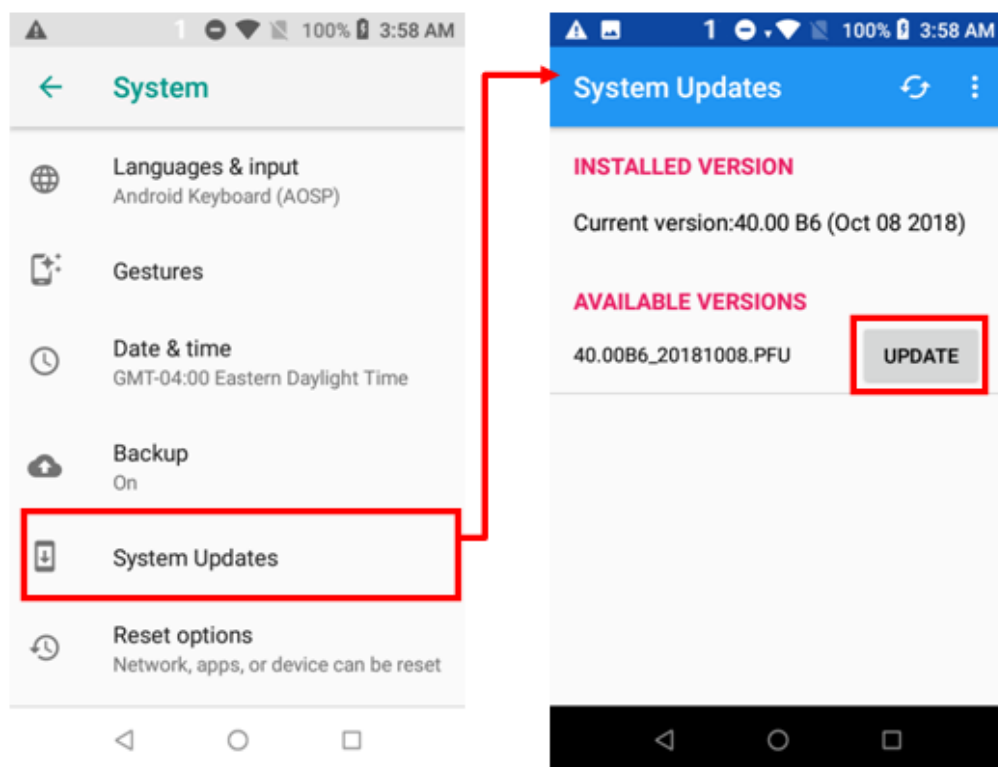
OS Update supports OS up version and down version. However, when performing down version, be sure to perform factory data reset (refer to "2.4 Factory reset (p.21)") after OS Update.

How to OS updates

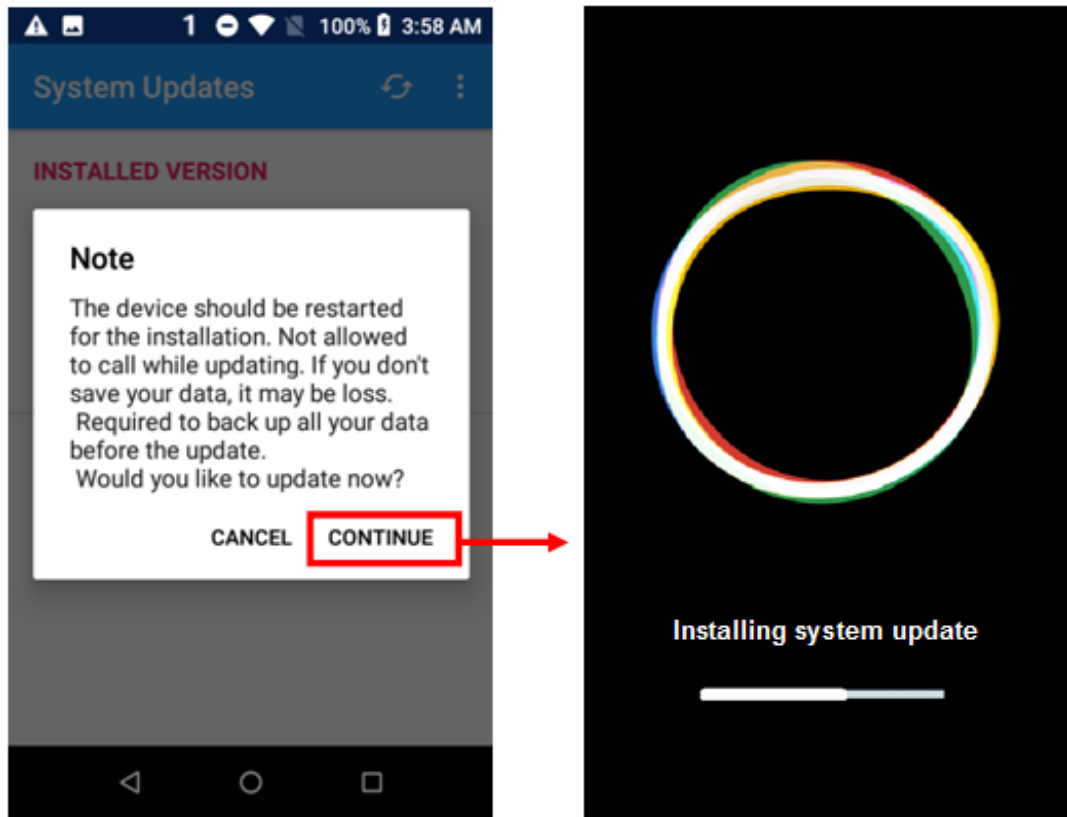
OS image used for System Update should be stored in internal storage or in microSD card. For both cases, image must be placed on root folder.



With OS image stored in appropriate location, click [Settings] -> [System] -> [System updates], "System updates" is launched and list of images available for updating and [Install] button will be displayed.



Touch [Install] button displayed next to the OS image, following dialog for confirmation will be displayed. Touch [Continue] here, system will restart and OS updating will start. When update is completed, it will restart automatically.



7.2 OS Updating by Application

7.2.1 Overview

The following describes how to update the OS from user application. By this method, it is possible to update OS at night when the device is not used.

Cautions!

The OS Update of DT-X400 is a premise to be done by human operation. This is based on the idea that "Since OS update is a dangerous act such as the terminal does not start when failing, wish people to check progress".

By using this method, updates the OS even if there are no people on the spot. However, we can not say that "updating the OS will succeed under any circumstances". Therefore, when using this service, sufficient verification is of course necessary, and furthermore it is necessary to prepare for "Measures to be taken if OS update fails, such as preparation of alternative terminal".

7.2.2 Structure

Below are the tools used for OS update from application.

OS Updating service

It is a program that is called from application to update OS. XXXXXXXXXXXX stands for version. However, in the following explanation, it is described as OSUpdateService.

Filename: OSUpdateServiceXXXXXXXXXX.apk

OS Image file used for updating

OS image file used for updating. The update service above uses it.

Filename: 40.00XX_XXXXXXXX.PFU

Sample application

This is the source code sample of the application calling the above update service.

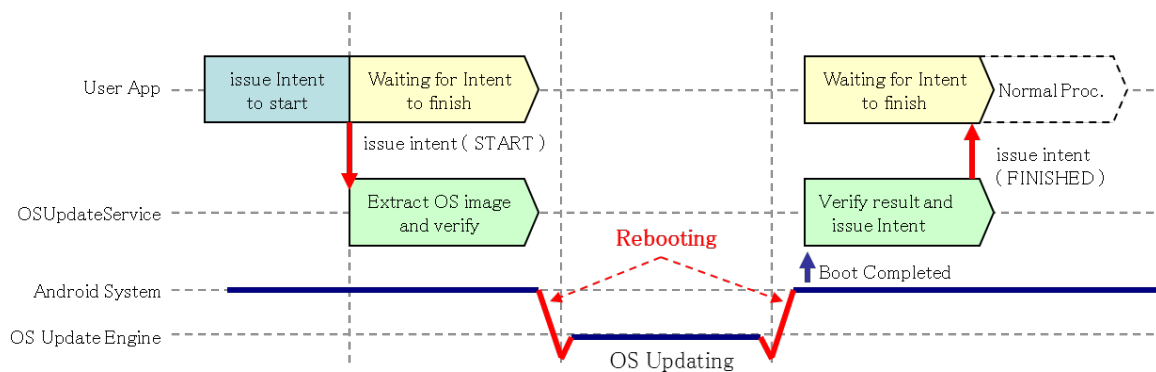
Filename: OSUpdateSample.zip

7.2.3 How it works

About

First, application issues "START" intent together with the PATH to the "OS update image". The OSUpdateService invoked by the intent above will check the integrity of the specified "update image file", restart the terminal, and update its the OS.

The application receives the "COMPLETED" intent issued by the OSUpdateService and checks the result.



Intent

(1) START intent

Package name:

Class name: `jp.casio.ht.osupdateservice.StartUpdate`

Extra:

(2) FINISHED message

Package name:

Class name: `jp.casio.ht.osupdateservice.finishupdate`

Extra:

How to start OS update

Application creates an Intent specifying the package name, class name, and extra and invokes `startActivity` to call the OSUpdateService.

```
Intent intent = new Intent(Intent.ACTION_MAIN);
intent.setFlags(Intent.FLAG_ACTIVITY_NEW_TASK);
intent.setClassName("jp.casio.ht.osupdateservice", "jp.casio.ht.osupdateservice.StartUpdate");
Uri uri = Uri.parse("PATH to the OS image file");
intent.setData(uri);
startActivity(intent);
```

How to receive finished intent

Receive a broadcast message ("jp.casio.ht.remoteupdate.finishupdate") using the broadcast receiver of the application.

```
FinishBroadcastReceiver receiver = new FinishBroadcastReceiver();
IntentFilter intentFilter= new IntentFilter("jp.casio.ht.osupdateservice.finishupdate");
registerReceiver(receiver, intentFilter);
```

```
...
class FinishBroadcastReceiver extends BroadcastReceiver {
@Override
public void onReceive(Context context, Intent intent) {
    Bundle bundle = intent.getExtras();
    String result: = bundle.getString("result");
}
}
```

Execution result can be judged by bundled result.

Return value	Means
-1	OS update image file is not valid.
0	Update was completed normally.
1	Specified update has already been applied. ※1
2	OS update service internal error.

※1 In case of DT-X400, same OS version can be used. So, this error doesn't return.

Log file

The result is also left in the log file

(i.e. "/storage/emulated/0/Android/data/jp.casio.ht.osupdateservice /files/result.xml").

This is an XML format document, the layout shown below.

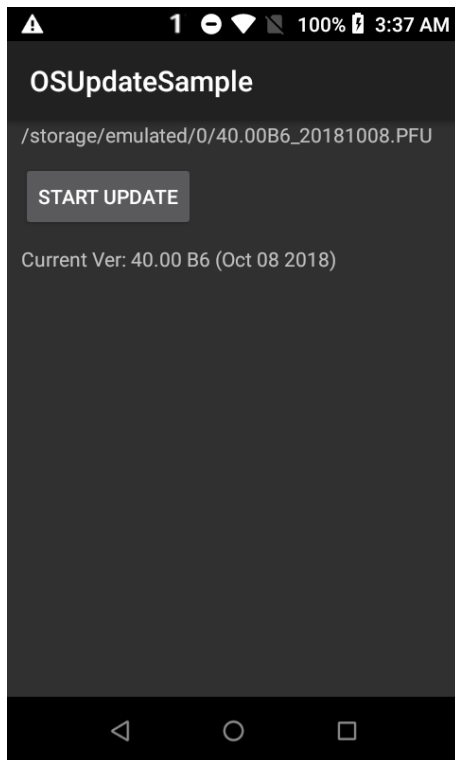
```
<?xml version='1.0' encoding='utf-8'?>
<update>
<file>PATH to the OS image file</file>
<apply>OS image file name</apply>
<start>Update starting time and date</start>
<finish>Update finished time and date</finish>
<prevver>OS version before updating</prevver>
<postver>OS version after updating</postver>
<result>0</result>
</update>
```

e.g.)

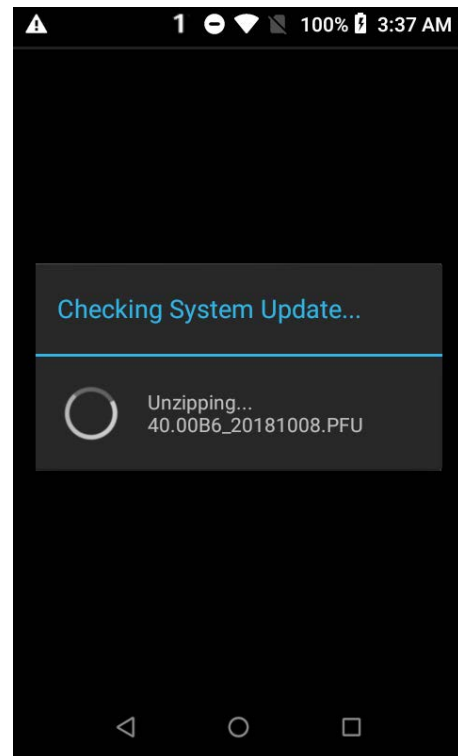
```
<?xml version="1.0" encoding="utf-8"?>
<update>
<file>/storage/emulated/0/40.00B6_20181008.PFU </file>
<apply>40.00B6_20181008.PFU </apply>
<start>2018/10/08 10:36:26</start>
<finish>2018/10/08 10:49:30</finish>
<prevver>40.00 (Apr 20 2018)</prevver>
<postver>40.00 (Jun 05 2018)</postver>
<result>0</result>
</update>
```

7.2.4 How to update

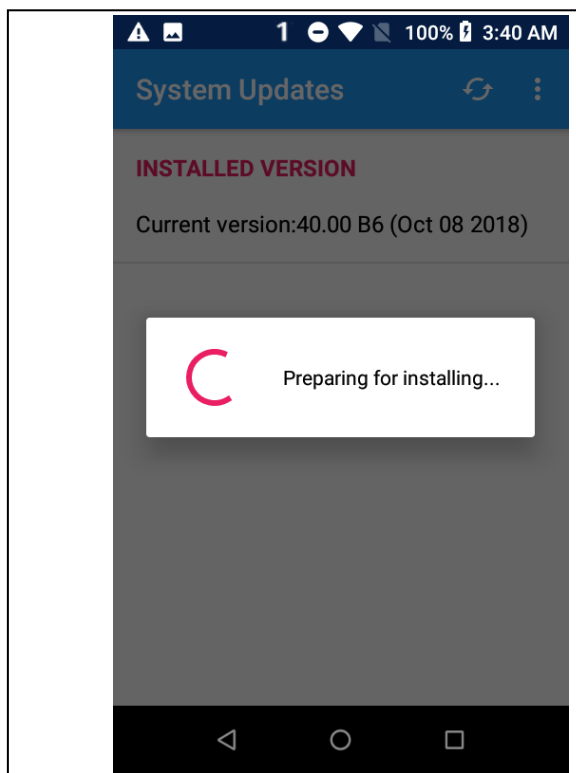
The figure below shows the flow of updating the OS using the sample program.



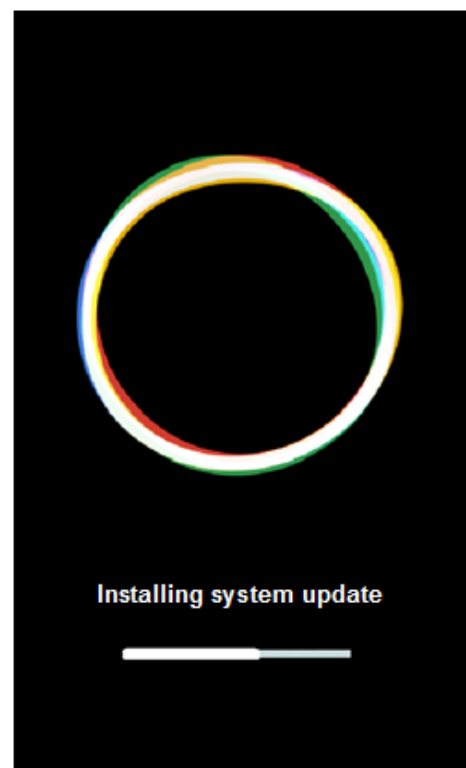
1. Touch [START UPDATE]



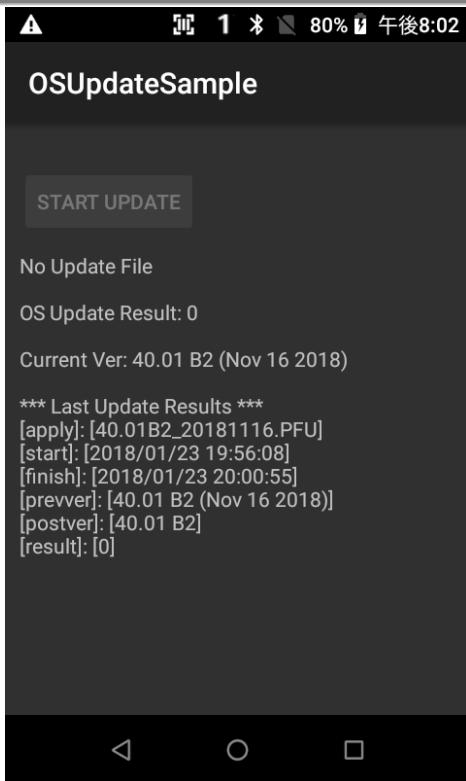
2. The called OSUpdateService validates the OS image file.



3. Restart and update OS



4. Under updating the OS

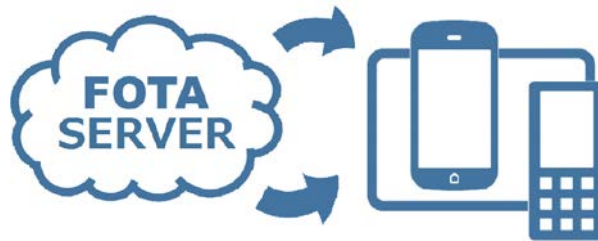


5. Receive FINISHED message, and show log file.

7.3 OS Updating by FOTA

7.3.1 Overview

Common Android based smartphones have OS updating function over the network (FOTA: Firmware Over The Air), and it is usual to keep the OS up to date with this.



However, for corporate use terminals, there was no need to "keep its OS up to date using FOTA" for the following two reasons.

- (1) Corporate use terminals use only evaluated OS by the system administrator.
- (2) Corporate use terminals are not connected to the Internet.

FOTA system on DT-X400 is prepared to make it easier for system administrators to download the OS image and to update several evaluation terminals.

To update the OS on the work site, we recommend the method described in "7.1 OS Update (p.103)" or "7.2 OS Updating by Application (p.106)".

Cautions!

The FOTA server is on the cloud, and it is possible to download by the appropriate route via the Internet.


The use of FOTA function is free of charge. But data fees may apply from user's communications service provider.

Downloading may take long time depending on the user's network environment since the downloading size is about 1.2GB.

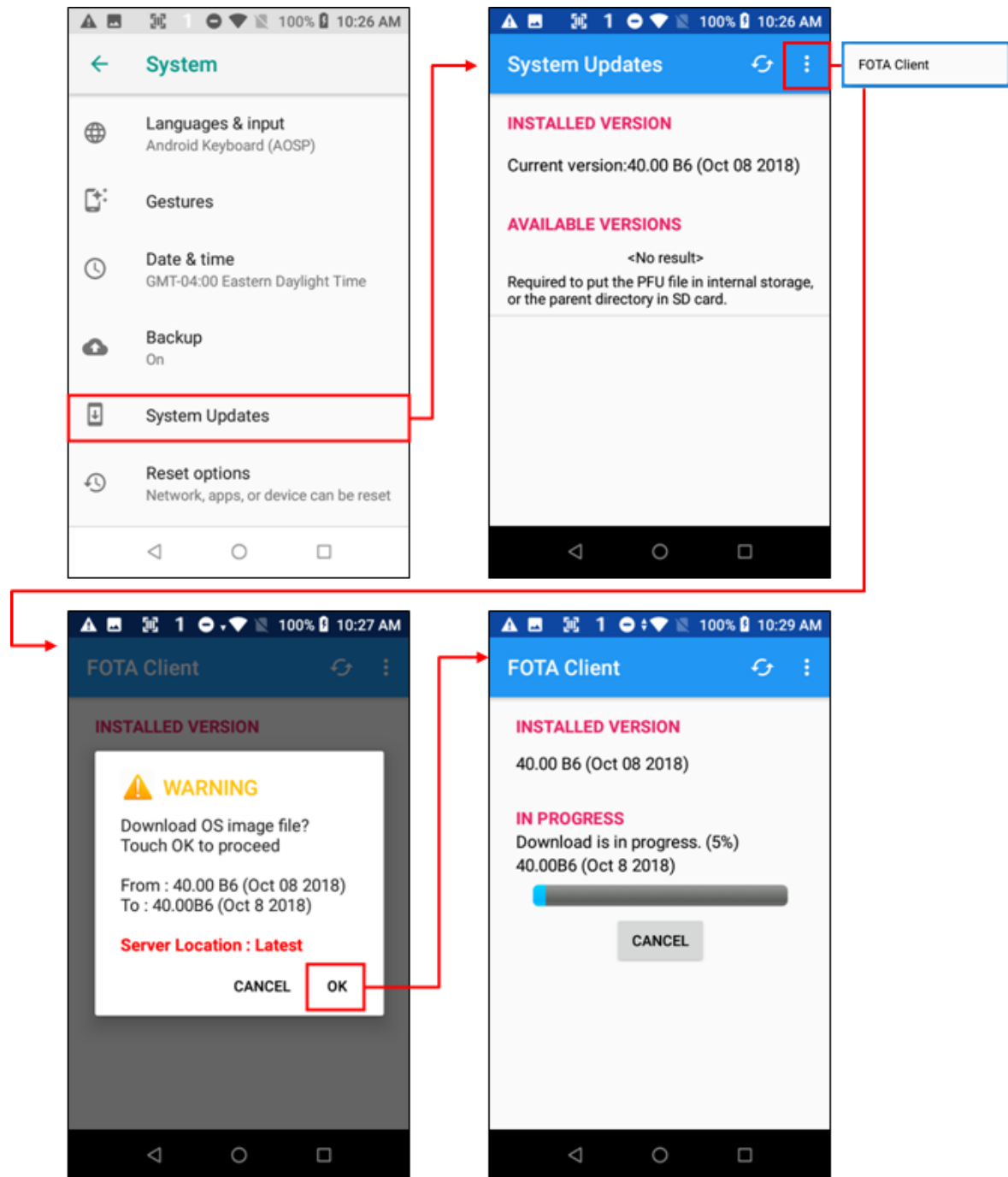
About 1.2GB of free space is required in the user area of the DT-X400's internal storage to download the OS image file.

The FOTA server does not acquire any personal information, please do not worry.

7.3.2 Operation

While WLAN connection is available, tap [Settings] → [System] → [System updates], tap the  on the "System updates" and select [FOTA Client], then FOTA Client software will be launched.

When it is launched, it accesses the FOTA server and shows available OS images. When desired OS image is selected, confirmation dialog will be displayed. If you select [OK], it will start to download the selected OS image.



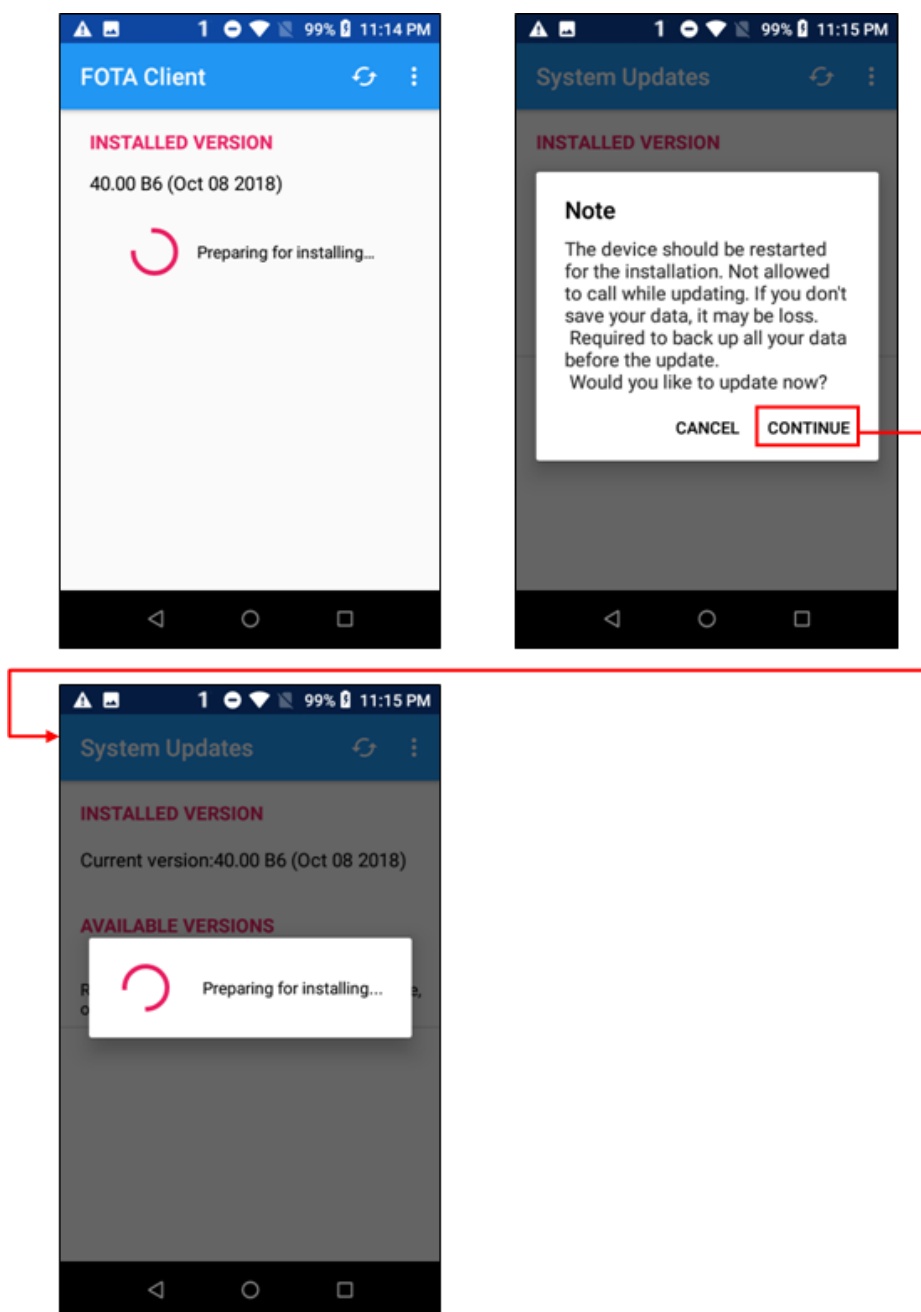
Caution!

While download is in progress, it is paused for about 1 minute approximately every 10 minutes because of the OS specification. While paused, the message "The download has

paused. Unstable network connection" is displayed. But any operation is necessary since download will resume automatically about 1 minute later.

After downloading is completed, "Preparing for Installing" message is displayed and confirmation dialog will be displayed soon.

If you select [CONTINUE], "Preparing for Installing" message is displayed and updating will start. When completed, DT-X400 will restart automatically.



Caution!


If you select [CANCEL], updating will not start. But the OS image file is stored in the root folder of the internal storage. You can update the OS by [System Updates] menu. The downloaded OS image file will be deleted after restart regardless of whether updating is done or not.

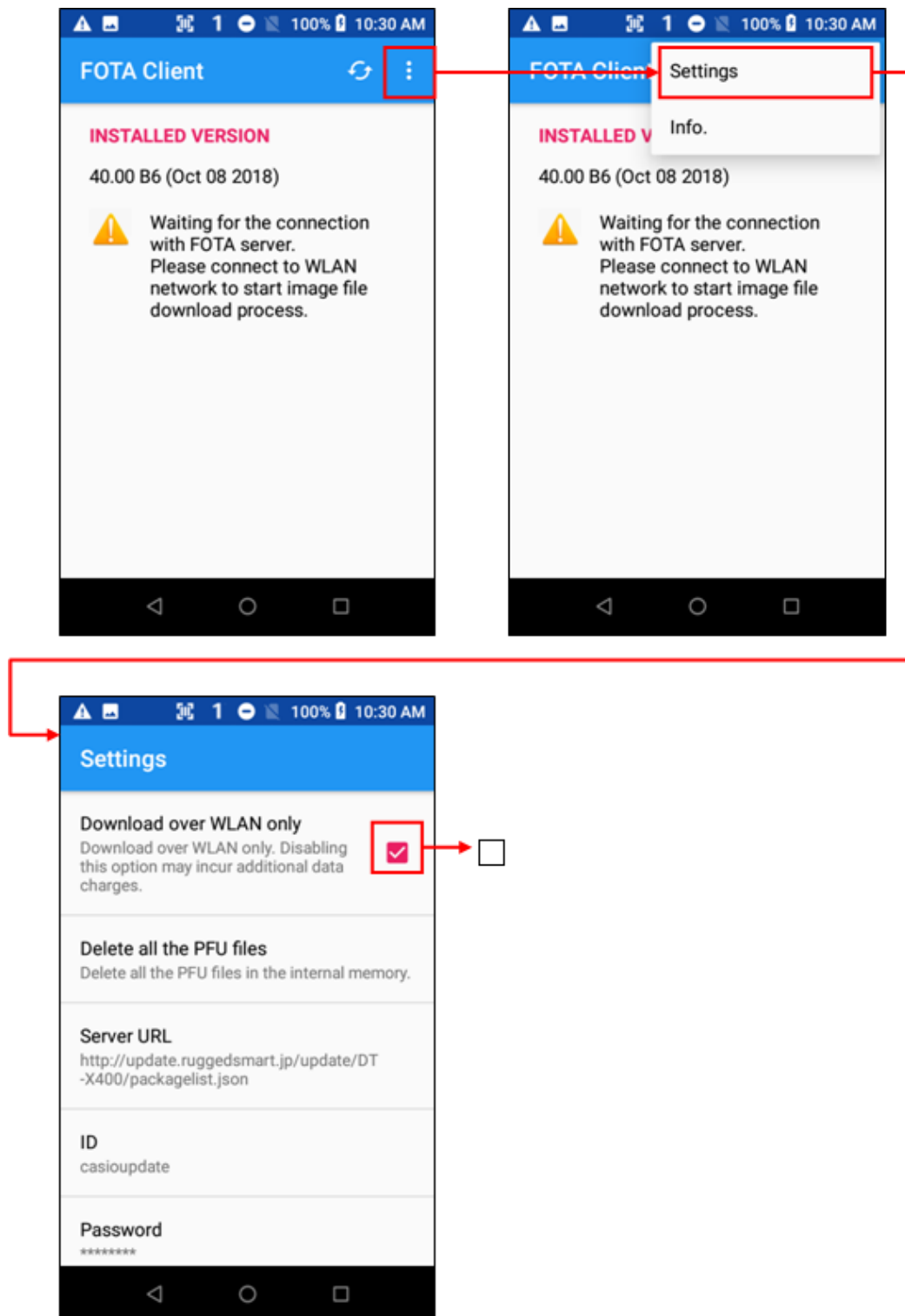
7.3.3 Download over the Mobile network

By default, the FOTA client downloads the OS image only over the WLAN.

If the Mobile network (3G/LTE) is available but WLAN connection is not available, the following message is displayed and downloading will not start.

If you want to download the OS image over the Mobile network (3G/LTE), please change setting as follows.

[FOTA Client] →  → [Settings] → uncheck the [Download over WLAN only]



7.4 Logging

In DT-X400, "Android Log" and "Kernel Log" are saved in the folders below

7.4.1 Android Log

Saved folder

/data/oemlog/log/android.old

Log files (10 files)

logcat.01.tgz, logcat.02.tgz, ... logcat.09.tgz, logcat.10.tgz (logcat.01.tgz is the newest, logcat10.tgz is the oldest Log file)

7.4.2 Kernel Log

Saved folder

/data/oemlog/log/kernel

Log files (5 files)

kernel.log, kernel1.log, kernel2.log, kernel3.log, kernel4.log (kernel.log is the newest new, kernel4.log is the oldest Log file)

7.4.3 How to collect logs

Connect the DT-X400 and the PC with ADB and copy Log file to the microSD card using the "cp" command.

Cautions!

When collecting Android logs, restart the DT-X400 once. After rebooting, the Android log is compressed in the log folder.