

# Quick start guide for kiosk mode

## 1 Introduction

This document describe how to setup the CTFPND-9 product family for kiosk mode, in which only one client application is displayed, and the end user usually have limited access to the device settings.

## 2 Kiosk mode demo

### 2.1 Installing DemoKiosk

- Unzip the archive perso.zip at the root of a micro SD card. A directory “/perso” is created
- copy a firmware image of version  $\geq 2.0.1$  at the root of the micro SD card
- insert this card in the device and click “Yes” when the firmware upgrade popup appear.
- Wait until firmware upgrade is complete. The device will then restart, displaying the new splash screen and boot animation, and will start the DemoKiosk application directly.

## 2.2 Content of the perso.zip demo

- initlogo.bmp => the new splash screen, in BMP 24bits format.
- bootanimation.zip => the new boot animation, in Android format
- DemoKiosk.apk => an Android package to install within the system. This one is configured in order to replace the default Android launcher (ie kiosk mode)
- setting.txt => additional settings for the device. They will be discussed in section 3.2.

## 3 Setup kiosk mode

The device is configured in kiosk mode during firmware upgrade.

A directory called “perso” need to be created at the root of a microSD card, and will contain customer specific data and settings.

As usual, the firmware image need also to be copied at the root of this microSD.

### 3.1 “perso” directory content

- An optional boot logo, in BMP 24bits format. It must be called “initlogo.bmp”, and need to match display resolution (1024x600 in the case of the CTFPND-9)
- An optional boot animation, which must be called “bootanimation.zip”, in Android startup animation format.
- Any number of Android packages (which must end with “.apk”.) These packages will be copied on the device and added to its default package list.
- A text file called “setting.txt”, which contains customer specific configurations and which will be described below.
- An xml file called “vendor\_apn.xml”, which contains an additional APNs list. It will be discussed in section 3.3
- a directory called “sdcard”, which contains any files and directory to be copied in the device's shared storage (so-called “internal SD”)

- an optional empty file called “selinux\_permissive” (resp. “selinux\_enforcing”) to disable (resp. enable) Selinux enforcement on the device.

Selinux is a security framework which is used on Android version > 5.0

It will, among other things, prevent application code to access and modify the device file systems, even in the case this code gets super-user access permissions.

When Selinux is set to permissive mode through perso, security violations will be reported, but not blocked.

This option is intended for legacy applications which used super-user access in older Android versions.

After Selinux has been set to permissive mode, it will remain this way even in case of factory reset.

Restore enforcing mode must be done explicitly, with the “selinux\_enforcing” option file.

## 3.2 “setting.txt” file content

This text file contains a number of keys, one per line, which will be recorded in the device and modify its behavior.

### 2.1 Keys which change the behavior

- restrict\_access

This key disables access to the settings from the top status bar. Only BRIGHTNESS, ROTATION, CHARGE and SCREEN SHOT are still accessible

All other settings and applications of the device can only be accessed through the client application (or through the default home application if no client is provided)

- disable\_status\_panel

This key disables the top sliding menu. Neither quick settings nor notifications will be accessible to the end-user.

- restrict\_top\_bar

When the application *is in full screen mode*, this key disable access to the top bar by swiping the finger on the top of the screen.

The purpose is the same as “restrict\_access”, ie to limit the end-user access to the device, but “restrict\_top\_bar” is intended for full-screen application which wants to completely disable the top status bar.

- sd\_launcher

If this key is present, inserting a microSD card with an empty file called system\_mode (no extension) at the root of it will launch the default android desktop.

This is typically used when the kiosk application does not allow access to the settings, or if the distributor wants to have access to the browser, file manager, or manually install and remove applications.

- `global_action_disabled`

If this key is present, long press on the power button will no longer call the global action menu (power off and reset.)

This is typically used when the distributor wants to prohibit the end user from switching the device off.

- `long_home_intent=value`

(example : `long_home_intent=com.android.settings/.Settings`)

This key redefined the behavior of the long press on the HOME button. If defined, long press on HOME will start the activity whose component name is *value*.

- `navbar_disabled`

If this key is present, the navigation bar will be disabled (only meaning full for device with navigation bar, the 7" device does not have one.)

- `low_bat_warn_disabled`

If this key is present, the low battery warning pop-up is disabled. The device will still shutdown when the battery level becomes critical.

- `volume_keys_disabled`

If this key is present, the volume buttons are disabled.

- `home_key_disables`

If this key is present, the home button is disabled.

- `report_user_activity=value` (example: `report_user_activity=5`)

If this key is present and different from 0, a broadcast message "`*USER_ACTIVITY`" will be sent each time a user activity is detected on the device (touchpanel or key press.)

The value is the minimum period, in second, between messages. For instance a value of 5 means one message every 5 seconds, even if there is permanent user activity in the meantime.

## 2.2 Keys which change the default configuration

IMPORTANT: These keys change the default value of the settings, not the current value. Current value will be set to default at factory reset. A factory reset can be done in the same time as firmware upgrade by adding an empty file called “force\_clean” at the root of the microSD card.

- `timezone=`*value* (example : `timezone=Europe/Berlin`)

This key sets the default time zone.

- `language=`*value* (example : `language=it`)

This key sets the default language. The language code must follow the ISO 639 standard.

- `country=`*value* (example : `country=GB`)

This key sets the default country. The country code must follow the 2 letters ISO 3166 standard.

- `auto_time_zone=`*value* (example : `auto_time_zone=1`)

This key enables or disables the auto time zone feature (which allows the device to get the current time zone from the GSM network.) When this key is not present, auto time zone is enabled.

- `accelerometer_rotation=`*value* (example : `accelerometer_rotation=1`)

This key enables or disables automatic screen rotation. When this key is not present, screen rotation is enabled.

- `dataroaming=`*value* (example : `dataroaming=false`)

This key enables or disables modem data roaming. When this key is not present, data roaming is disabled.

- `mobile_data_enabled=`*value* (example : `mobile_data_enabled=false`)

This key defines if mobile data is enabled or disabled by default. When this key is not present, mobile data is enabled.

- `adb_default_state=value` (example : `adb_default_state=0`)

Set the default status of the debugger service, enabled or disabled. This only change the *default* status, the debugger can be manually enabled or disabled in the settings menu.

If this case is not present, the debugger is enabled by default.

- `screen_auto_brightness=value` (example : `screen_auto_brightness=0`)

Set the default status of the automatic screen brightness, enabled or disabled. This only change the *default* status.

- `screen_off_timeout=value` (the value is in milliseconds)

Set the default duration of the screen timeout. The display will go off if no user action was done during the specified timeout (and if no wake lock is held). This only change the *default* value.

- `ntp_server=value` (example : `ntp_server=pool.ntp.org`)

Set the address of the NTP server (Network Time protocol.) By default it is set to "2.android.pool.ntp.org"

- `time_12_24=value` (value is 12 or 24, example : `time_12_24=24`)

Set the default time format, 12 or 24 hours.

- `usb_default_config=value` (accepted values are "adb" and "mtp,adb", example : `usb_default_config=adb`)

Set the device's default USB mode. "mtp,adb" mode means mass storage access from PC and Android Debug Bridge are both enabled, "adb" means mass storage access is disabled.

## 2.3 Special purpose keys

The following keys have very specific purposes and behaviors, and should be avoided in normal operation. Please contact us for confirmation if you think you need one of those.



- `ntp_disabled`

This key disables the device's Network Time Protocol client. It won't get the current time from the network. This is mainly intended for users who want to control every network access of the device.

- `agps_disabled`

This key disables support for Assisted Gps. The Gps engine will no longer attempt to download ephemeris from the network, and will do a standard fix instead. This is mainly intended for users who want to control every network access of the device.

- `portal_detect_disabled`

This key disables the auto-detection of web access portal (the kind that are used in airport and hotel, for instance.) This is mainly intended for users who want to control every network access of the device.

- `data_call_wakelock`

This key disables sleep mode when modem data is connected. Only the display will be switched off.

WARNING : battery life when the screen is off will be considerably reduced. For instance on the CTFPND-9 with 4300mA/h battery it will fall from more than one week to 15 hours.

- `time_permission_disabled`

If this key is set, no permission is needed to change the system time through `AlarmManager.setTime()`.

(Normally `SET_TIME` permission is needed, and it is a privileged permission only granted to system or signed applications.)

- `bt_dev_class` (example : `bt_dev_class=0x5A,0x01,0x14`)

This key override the Bluetooth class of the device. The syntax is `bt_dev_class=<service class>,<major class>,<minor class>`, where service, major and minor class are 1-byte hexadecimal numbers prefixed with 0x and capitalized.

- can\_block\_system\_notif

This key allow system notifications to be blocked in the same way as application notifications.

- key\_map (example : key\_map=A,B,BACK,ENDCALL,HOME)

This option defines the mapping of the mechanical keyboard of the device, if any. It is currently only available on other CTFPND devices.

The first button of the mapping is the one next to the power button, then the second next, and so on.

The name of the mapping entries must be one of the key labels defined in [Annex 1](#).

### 3.3 “vendor\_apn.xml” file content

It is an xml file which contains a list of APNs to be added to the device's default set.

**IMPORTANT** : this list is taken into account only after factory reset, or after pressing Settings > Wireless & network > More > Cellular networks > Access Point Names > menu (3 vertical dots) > Reset to default.

This file must be compliant with Android apn.xml version 8. Please find a template below.

```
<?xml version="1.0" encoding="utf-8"?>
<apns version="8">
  <apn carrier="Example" mcc="202" mnc="01" apn="Internet" user="user" password="pass"
type="default,supl" />
  <apn carrier="Example MMS" mcc="202" mnc="01" apn="Mms" mmsc="101.102.103.103:8000"
mmsproxy="100.100.100.100" mmsport="8080" type="mms" />
</apns>
```

Further examples can be seen in the device's default APNs list, located in /system/etc/apns-conf.xml

The current implementation does not check for duplicate, so please make sure no apn in vendor\_apn.xml are already defined in /system/etc/apns-conf.xml

## 4 Configuring and Android application to be used in kiosk mode

To appear on top and be launched by default, an Android activity must react to the HOME intent.

AndroidManifest.xml should typically contains :

```
<activity android:name="com.my.package.MyKiosk"
    android:launchMode="singleInstance"
<!-- "singleTask" may be used instead of "singleInstance" -->
    android:stateNotNeeded="true" <!-- optionnal -->
<!-- other activity settings here -->
    <intent-filter>
        <action android:name="android.intent.action.MAIN" />
        <category android:name="android.intent.category.HOME" />
        <category android:name="android.intent.category.DEFAULT" />
    </intent-filter>
</activity>
```

For more information about the Activity settings in kiosk mode, more informations can be found here :

<http://developer.android.com/guide/topics/manifest/activity-element.html>

## Annex 1 : list of key labels

UNKNOWN  
SOFT\_LEFT  
SOFT\_RIGHT  
HOME  
BACK  
CALL  
ENDCALL  
0  
1  
2  
3  
4  
5  
6  
7  
8  
9  
STAR  
POUND  
DPAD\_UP  
DPAD\_DOWN  
DPAD\_LEFT  
DPAD\_RIGHT  
DPAD\_CENTER  
VOLUME\_UP  
VOLUME\_DOWN  
POWER  
CAMERA  
CLEAR  
A  
B  
C  
D  
E  
F  
G

H  
I  
J  
K  
L  
M  
N  
O  
P  
Q  
R  
S  
T  
U  
V  
W  
X  
Y  
Z  
COMMA  
PERIOD  
ALT\_LEFT  
ALT\_RIGHT  
SHIFT\_LEFT  
SHIFT\_RIGHT  
TAB  
SPACE  
SYM  
EXPLORER  
ENVELOPE  
ENTER  
DEL  
GRAVE  
MINUS  
EQUALS  
LEFT\_BRACKET  
RIGHT\_BRACKET  
BACKSLASH  
SEMICOLON  
APOSTROPHE  
SLASH  
AT

NUM  
HEADSETHOOK  
FOCUS // \*Camera\* focus  
PLUS  
MENU  
NOTIFICATION  
SEARCH  
MEDIA\_PLAY\_PAUSE  
MEDIA\_STOP  
MEDIA\_NEXT  
MEDIA\_PREVIOUS  
MEDIA\_REWIND  
MEDIA\_FAST\_FORWARD  
MUTE  
PAGE\_UP  
PAGE\_DOWN  
PICTSYMBOLS  
SWITCH\_CHARSET  
BUTTON\_A  
BUTTON\_B  
BUTTON\_C  
BUTTON\_X  
BUTTON\_Y  
BUTTON\_Z  
BUTTON\_L1  
BUTTON\_R1  
BUTTON\_L2  
BUTTON\_R2  
BUTTON\_THUMBL  
BUTTON\_THUMBR  
BUTTON\_START  
BUTTON\_SELECT  
BUTTON\_MODE  
ESCAPE  
FORWARD\_DEL  
CTRL\_LEFT  
CTRL\_RIGHT  
CAPS\_LOCK  
SCROLL\_LOCK  
META\_LEFT  
META\_RIGHT  
FUNCTION

SYSRQ  
BREAK  
MOVE\_HOME  
MOVE\_END  
INSERT  
FORWARD  
MEDIA\_PLAY  
MEDIA\_PAUSE  
MEDIA\_CLOSE  
MEDIA\_EJECT  
MEDIA\_RECORD  
F1  
F2  
F3  
F4  
F5  
F6  
F7  
F8  
F9  
F10  
F11  
F12  
NUM\_LOCK  
NUMPAD\_0  
NUMPAD\_1  
NUMPAD\_2  
NUMPAD\_3  
NUMPAD\_4  
NUMPAD\_5  
NUMPAD\_6  
NUMPAD\_7  
NUMPAD\_8  
NUMPAD\_9  
NUMPAD\_DIVIDE  
NUMPAD\_MULTIPLY  
NUMPAD\_SUBTRACT  
NUMPAD\_ADD  
NUMPAD\_DOT  
NUMPAD\_COMMA  
NUMPAD\_ENTER  
NUMPAD\_EQUALS



NUMPAD\_LEFT\_PAREN  
NUMPAD\_RIGHT\_PAREN  
VOLUME\_MUTE  
INFO  
CHANNEL\_UP  
CHANNEL\_DOWN  
ZOOM\_IN  
ZOOM\_OUT  
TV  
WINDOW  
GUIDE  
DVR  
BOOKMARK  
CAPTIONS  
SETTINGS  
TV\_POWER  
TV\_INPUT  
STB\_POWER  
STB\_INPUT  
AVR\_POWER  
AVR\_INPUT  
PROG\_RED  
PROG\_GREEN  
PROG\_YELLOW  
PROG\_BLUE  
APP\_SWITCH  
BUTTON\_1  
BUTTON\_2  
BUTTON\_3  
BUTTON\_4  
BUTTON\_5  
BUTTON\_6  
BUTTON\_7  
BUTTON\_8  
BUTTON\_9  
BUTTON\_10  
BUTTON\_11  
BUTTON\_12  
BUTTON\_13  
BUTTON\_14  
BUTTON\_15  
BUTTON\_16

LANGUAGE\_SWITCH  
MANNER\_MODE  
3D\_MODE  
CONTACTS  
CALENDAR  
MUSIC  
CALCULATOR  
ZENKAKU\_HANKAKU  
EISU  
MUHENKAN  
HENKAN  
KATAKANA\_HIRAGANA  
YEN  
RO  
KANA  
ASSIST  
BRIGHTNESS\_DOWN  
BRIGHTNESS\_UP  
MEDIA\_AUDIO\_TRACK  
SLEEP  
WAKEUP  
PAIRING  
MEDIA\_TOP\_MENU  
11  
12  
LAST\_CHANNEL  
TV\_DATA\_SERVICE  
VOICE\_ASSIST  
TV\_RADIO\_SERVICE  
TV\_TELETEXT  
TV\_NUMBER\_ENTRY  
TV\_TERRESTRIAL\_ANALOG  
TV\_TERRESTRIAL\_DIGITAL  
TV\_SATELLITE  
TV\_SATELLITE\_BS  
TV\_SATELLITE\_CS  
TV\_SATELLITE\_SERVICE  
TV\_NETWORK  
TV\_ANTENNA\_CABLE  
TV\_INPUT\_HDMI\_1  
TV\_INPUT\_HDMI\_2  
TV\_INPUT\_HDMI\_3

TV\_INPUT\_HDMI\_4  
TV\_INPUT\_COMPOSITE\_1  
TV\_INPUT\_COMPOSITE\_2  
TV\_INPUT\_COMPONENT\_1  
TV\_INPUT\_COMPONENT\_2  
TV\_INPUT\_VGA\_1  
TV\_AUDIO\_DESCRIPTION  
TV\_AUDIO\_DESCRIPTION\_MIX\_UP  
TV\_AUDIO\_DESCRIPTION\_MIX\_DOWN  
TV\_ZOOM\_MODE  
TV\_CONTENTS\_MENU  
TV\_MEDIA\_CONTEXT\_MENU  
TV\_TIMER\_PROGRAMMING  
HELP  
NAVIGATE\_PREVIOUS  
NAVIGATE\_NEXT  
NAVIGATE\_IN  
NAVIGATE\_OUT  
STEM\_PRIMARY  
STEM\_1  
STEM\_2  
STEM\_3  
DPAD\_UP\_LEFT  
DPAD\_DOWN\_LEFT  
DPAD\_UP\_RIGHT  
DPAD\_DOWN\_RIGHT  
MEDIA\_SKIP\_FORWARD  
MEDIA\_SKIP\_BACKWARD  
MEDIA\_STEP\_FORWARD  
MEDIA\_STEP\_BACKWARD  
SOFT\_SLEEP  
CUT  
COPY  
PASTE