

# ACeP13M User Guide

Preliminary

Version-3.0

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## 1 Brief introduction.

### 1.1 About this user guide

This user guide explains the features and operating methods of the ACeP13M digital billboard system.

### 1.2 Product overview

This product integrates E Ink 13.3 inches advanced color electronic paper (Advanced Color ePaper, ACeP™) with Qualcomm high-performance processor technology to support resolutions up to 1600X1200. The picture can be uploaded via Wi-fi or Type-C transmission lines for widely used in enterprises, schools, Cram schools, art galleries, retail, restaurants, government agencies, hospitals, banks, transportation, and other industries.

### 1.3 Appearance Description



## 1.4 Lights notification

Mode	Red	Green	Blue
Play mode		Constant light	
Upload picture			Flash
Engineering mode		Slow flash	
Switch pictures		Flash	
Press and hold the power button to shut down	Flash for 11 times		
Play mode under low battery	Slow flash	Constant light	
Engineering mode under Low battery	Slow flash	Slow flash	
Press and hold the power button to power on	Constant light for 5 seconds		

## 2 Basic operations

### 2.1 Power on

- i. Plug in type-C power cord to ACeP13 device and it will power on immediately. The LED indicator is shown as "RED".
- ii. Press and hold the power button for 3 seconds to power on ACeP13 device and make sure the LED red indicator is constant flash. If the power key is released, the LED red indicator will disappear. It means that the ACeP13 device is failed to power-on. If the power key is released, the LED red indicator remains constantly on, indicating a successful power-on.

### 2.2 Shutdown

Press and hold the power button for 1 second to turn off ACeP13 device and make sure that the LED red light flashes. The system of ACeP13 device will be shut down after 11 flashes.

### 2.3 Restart the system

Sometimes for certain functions to take effect, the system needs to be restarted. The easiest way is to use the power button to perform the shutdown task and then perform a power-on task again. If the system does not shut down or restart as mentioned above, please press and hold the power button for 10 seconds to force the system to restart. This method may be cause irreversible damage to the system, so do not use this method to restart the system if not necessary.


Another method to restart the system by performing the adb command from the PC side.

```
adb reboot
```

### 2.4 Use the AAS service

AAS (ACeP Activation System) service that users can connect to the AAS web interface by scanning the barcode of ACeP13 via their mobile phone. AAS web interface can provide some features such as Wi-Fi setting, time zones setting, uploading pictures, modifying playback intervals, and more.

### 2.4.1 Turn on Wi-Fi hotspot

If Can't find "ACeP13\_xxxx" in the Wi-Fi connection list, you can turn on Wi-Fi hotspot using by the function key .

### 2.4.2 Connect to AASddd

The Internet sharing function will be activated within 10 minutes after ACeP13 is turned on. During this period, the QR code can be used to connect to ACeP13. Once the connection is established, the Internet sharing function will continue to connect. If the network sharing function is automatically turned off because it has been powered on for more than 10 minutes without being connected, please press the function key to restart the network sharing function.

If there is no QR code prepared in advance, it can be set in the Wi-Fi connection list of the mobile phone. You can find "ACeP13\_xxxx" in the Wi-Fi connection list, click "Connect" and enter the password "00000000" to connect.

Check whether the mobile phone is successfully connected to ACeP13. You can find it in the Wi-Fi connection list of your mobile phone. If you can find the message "ACeP13\_xxxx is connected, no Internet" appears, you can confirm that you have successfully connected to ACeP13 (where xxxx is 4). Digits)

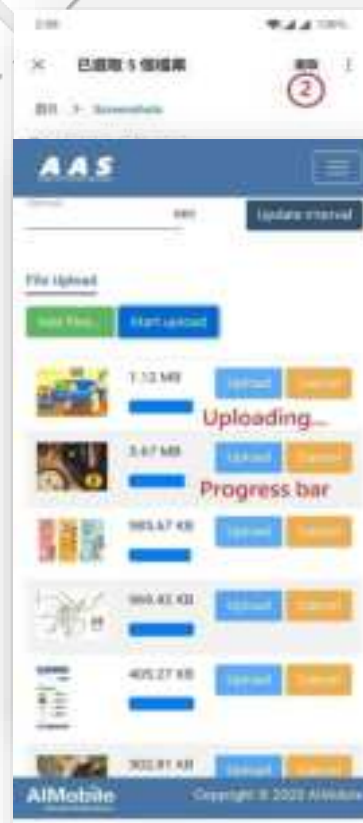
After the connection is successful, use the QR code below to log in to the ACeP13 AAS service. A hyperlink (<http://192.168.43.13:8080/>) should appear in the scan result, please click this hyperlink to log in to the AAS system.



When the AAS system login successfully, the following screen will appear on mobile phone



### 2.4.3 Upload the picture file



Note:

1. When new picture file is uploaded, old picture file in ACeP13 device will be cleared. Only new picture file is present in ACeP13 device.
2. Picture file name does not support Chinese and other non-standard English numbers and symbols, and blank can be used.
3. Format of picture file supports bmp, png, jpg and jpeg with a resolution of 1600 x 1200 size. Any other resolution is automatically scaled to 1600 x 1200 size.

#### 2.4.4 Set the playback interval





## 2.4.5 Wi-Fi settings



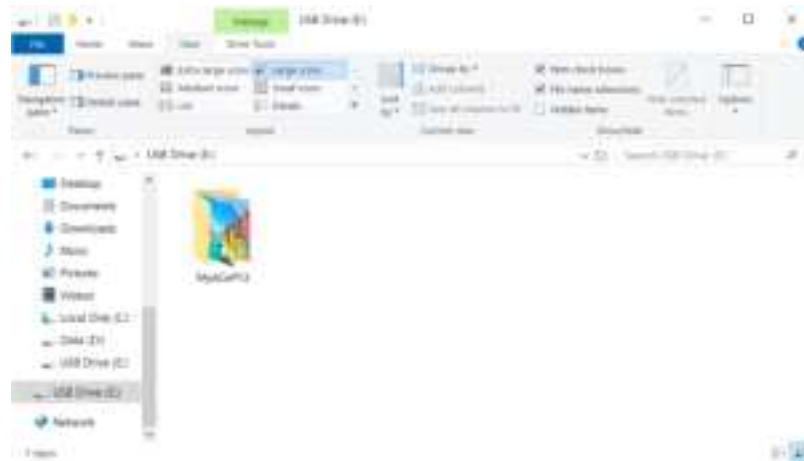
## 2.4.6 Set the time zone



## 2.5 Manual upload the picture file.

If there is not QR code provided or mobile phone on hand, the picture file can be uploaded by using USB flash disk.

- i. Prepare USB flash disk to create the **MyACeP13** in the top directory. Place the picture files in this directory and upload them to ACeP13 device.



- ii. Connect ACeP13 device with USB flash disk via USB Cable.



- iii. ACeP13 automatically copies new picture files under the **MyACeP13** directory to the library of ACeP13 device and starts looping through new picture files in the next time series. The LED light of ACeP13 device flashes blue during the picture files are uploading.

Note:

1. When new picture file is uploaded, old picture file in ACeP13 device will be cleared. Only new picture file is present in ACeP13 device.
2. Picture file name does not support Chinese and other non-standard English numbers and symbols, and blank can be used.
3. Format of picture file supports bmp, png, jpg and jpeg with a resolution of 1600 x 1200 size.

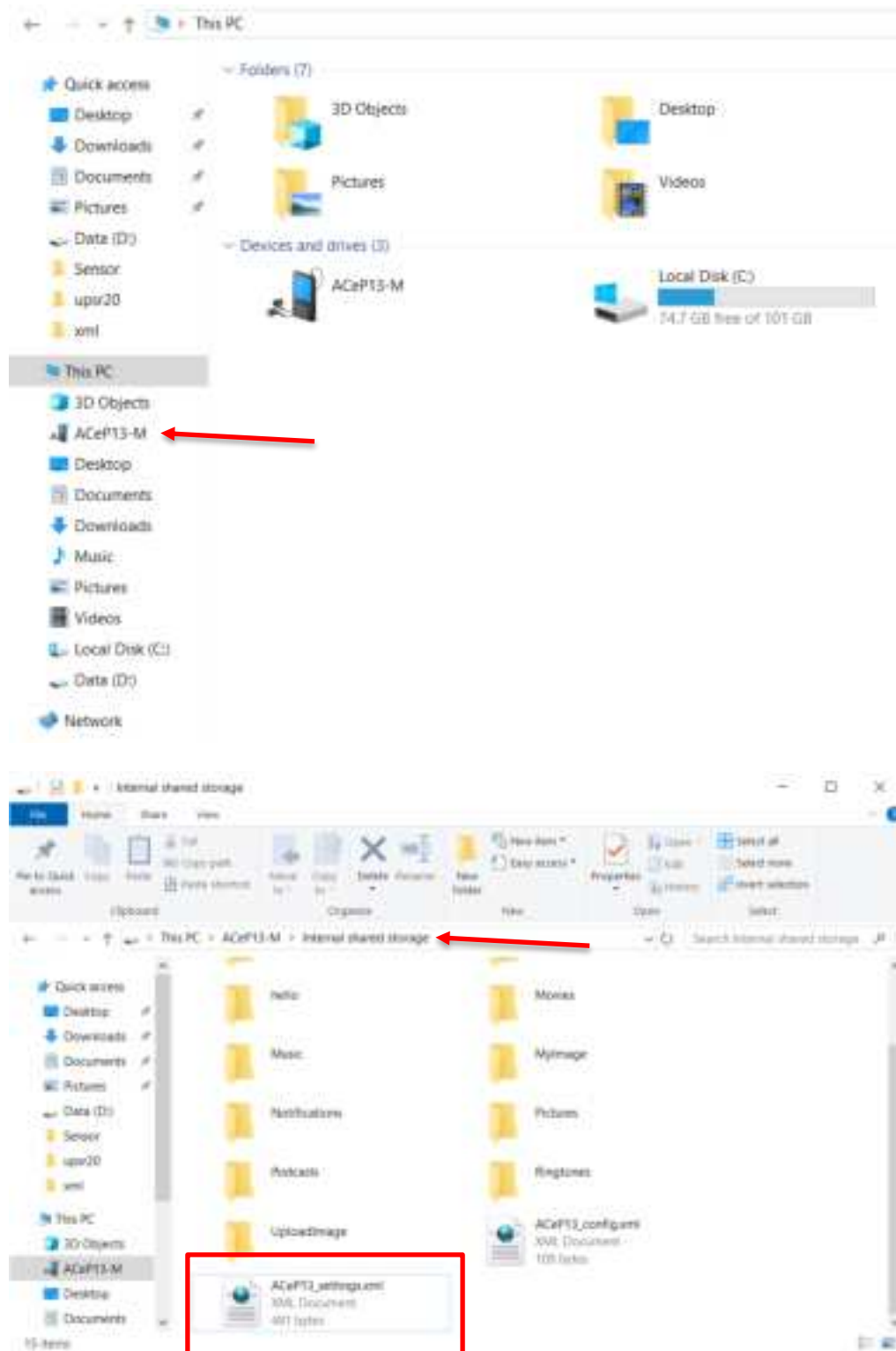
Any other resolution is automatically scaled to 1600 x 1200 size.



## 2.6 Manual WIFI settings

If there is not the QR code available or mobile phone cannot be used, you also can edit your files to set up Wi-Fi.

- i. Connect ACeP13 device with PC via USB Type-C Cable.
- ii. Open the file manager from your PC and find the ACeP13 disk drive.



- iii. Drag the **file ACeP13\_settings.xml** to the directory of ACeP13 device and restart it. The content of ACeP13\_settings.xml are as follows:

```
<?xml version="1.0" ?>
<config_value>
  <wifi_ap>
    <!-- SSID and password are case sensitive -->
    <SSID>WIFI-AP-NAME</SSID>
    <Password>WIFI-AP-PASSWORD</Password>
  </wifi_ap>

  <bluetooth>
    <!-- Enable or Disable, they're case insensitive -->
    <Enabled>Enable</Enabled>
  </bluetooth>

  <timezone>
    <!-- Value: AREA/CITY, case insensitive,
    e.g. Asia/Taipei, America/Denver or Europe/Berlin -->
    <Location>Asia/Taipei</Location>
  </timezone>
</config_value>
```

Where **WIFI-AP-NAME** is the SSID of the wireless network, **WIFI-AP-PASSWORD** is the password of the wireless network. This file is loaded into the system after power-on and it will be used to determine which wireless network is connected. **WIFI-AP-NAME** and **WIFI-AP-PASSWORD** can be modified only, but the location and name of the file cannot be changed.

If this WiFi AP can connect to a wireless network, ACeP13 device attempts to ask NTP on the network for time and updates it to the UTC Greenwich time zone.

## 2.7 Manual time zone Settings

There is the field in the A CeP13\_settings.xml that can pre-fill the time zone. For example, the Taipei standard time zone is Asia/Taipei, the Denver time zone in the United States is America/Denver, and the European Berlin time zone is Europe/Berlin. For the detailed time zone fill-in format, please refer to the following URL:

<https://gist.github.com/arpit/1035596>

Once the time zone has been filled in, the system must be restarted before it will take effect.



```
<?xml version="1.0" ?>
<config_value>
  <wifi_ap>
    <!-- SSID and password are case sensitive -->
    <SSID>WIFI-AP-NAME</SSID>
    <Password>WIFI-AP-PASSWORD</Password>
  </wifi_ap>

  <bluetooth>
    <!-- Enable or Disable, they're case insensitive -->
    <Enabled>Enable</Enabled>
  </bluetooth>

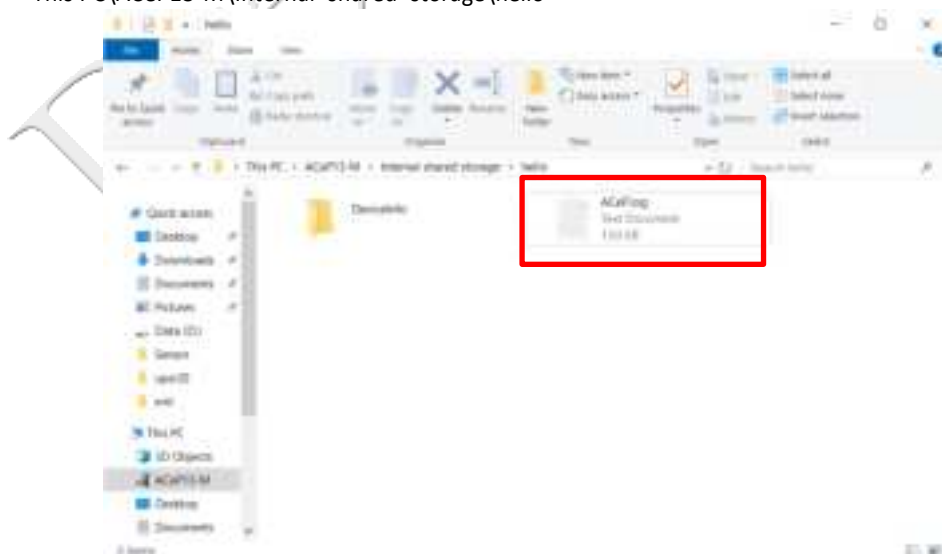
  <timezone>
    <!-- Value: AREA/CITY, case insensitive,
    e.g. Asia/Taipei, America/Denver or Europe/Berlin -->
    <Location>Asia/Taipei</Location>
  </timezone>
</config_value>
```

## 2.8 Log file

There are two procedures that the convert and show of the drawings is easy to get the problem in the ACeP13 device-side program. To detect errors for the follow-up problems, each step will be recorded in the log file as the following directory path.

The directory path that the user gets through MTP is:


This PC\ACeP13-M\Internal shared storage\hello



In this directory, there are two Log files: ImgProc.log and ACeP.log found. Please provide these two files to AIM SW developer if they cannot be shown smoothly from the display of ACeP13 device.

### 3 Switch mode


There are two modes of ACeP13 device: playback mode and engineering mode. They can be

switched by using the function key .

- Play Mode: Mainly used in presentation, electronic album situations. Pictures are automatically played looping at time intervals set in sequence. If end user updates new picture through the AAS system, the original picture will be emptied and new picture begins to play from next sequence. The play order is automatically alphabetical by file name and does not support Chinese file name.
- Engineering mode: Provide system information that shown on the screen of ACeP13 device to AIM SW developer for confirming the instant status of system. The status of system information displayed in the engineering mode will be not updated. The first line of the screen shows the last update time and date of system.

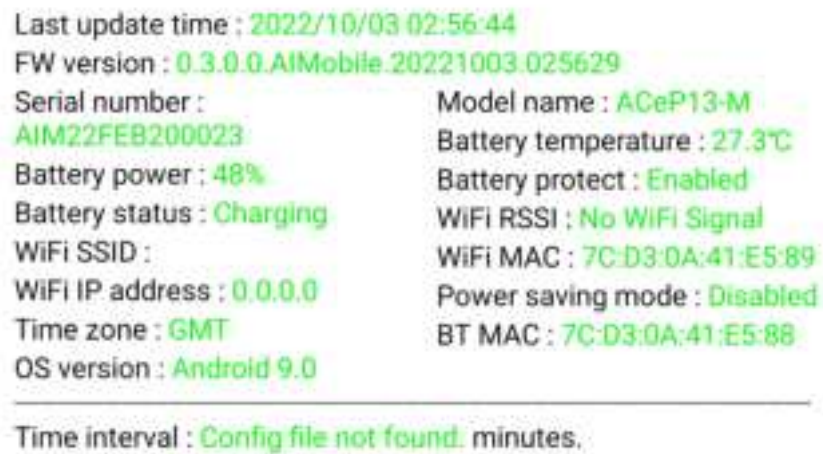
The system information in the engineering mode will be not updated regularly.

Therefore, the latest system information will be shown on the screen of ACeP13 device

after end user only switches the engineering mode by using the function key .

In low battery power situation, for every 1% reduction or 1% increase in power Electricity. The screen will be automatically updated to remind the user that the battery is running low. In addition, the engineering mode screen will be updated when the status of battery charging is changed, such as unplugging or plugging in a charging cable. The purpose is to avoid the occurrence of an abnormal condition that there is not any current inflow after plugging in USB cable.

The system information in the engineering mode is described below:



Last update time : 2022/10/03 02:56:44  
 FW version : 0.3.0.0.AIMobile.20221003.025629  
 Serial number : AIM22FEB200023  
 Model name : ACeP13-M  
 Battery temperature : 27.3℃  
 Battery power : 48%  
 Battery protect : Enabled  
 Battery status : Charging  
 WiFi RSSI : No WiFi Signal  
 WiFi SSID :  
 WiFi MAC : 7C:D3:0A:41:E5:89  
 WiFi IP address : 0.0.0.0  
 Power saving mode : Disabled  
 Time zone : GMT  
 BT MAC : 7C:D3:0A:41:E5:88  
 OS version : Android 9.0  
 Time interval : Config file not found. minutes.

#### LAST UPDATE TIME

This system information will provide the user with all necessary information such as network signal, IP, battery temperature, remaining charge, and so on.

#### SERIAL NUMBER

The unique identification number of ACeP13 device, which is equivalent to the name of the ACeP13 device used to identify the device.

#### BATTERY POWER

Battery Remaining charge.

#### BATTERY TEMPERATURE

Battery temperature.

#### BATTERY STATUS

Battery charge/discharge status.

---

#### BATTERY PROTECT

This is the status of battery protection mode. If the status of battery power is full for long periods of time, it will lead to reduced battery life and easy to expansion damage. Therefore, If the external power supply is used to AceP13 device for long periods of time, battery protection mode is recommended to turn on and the battery capacity can only be charged up to 50%.

---

#### WIFI SSID

The name of the base station to which WiFi is connected.

---

#### WIFI RSSI

WiFi signal strength.

---

#### WIFI IP ADDRESS

The IP obtained from the WiFi AP, or IP Address for device networking.

---

#### MODEL NAME

The device name is ACeP13.

---

#### OS VERSION

The operating system version is currently Android 9.0.

---

#### SDK VERSION

Android system version is currently SDK:28

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#### BT MAC ADDRESS

MAC Address for BT, the ACeP13 device is not named BT device name, so MAC Address for BT is displayed during searching an external BT, which allows you to establish the BT connection to the device.

---

#### TIME\_ZONE

Time zone setting, the time zone shown here is the time zone currently in use by the system.

---

#### FW VERSION

ACeP13 system version.

---

#### TIME INTERVAL

This is time interval among the pictures of the config file played in play mode. The unit is seconds.







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## 4 Supported picture format

ACeP13 device supports these picture formats in four: png file, jpg file, bmp file and jpeg file.

Each graph must match the size of 1600x 1200 pixel and be rendered horizontally (Landscape). If you have a portrait picture, please go to 90 degrees, and then upload to ACeP13 device.

Example:

The original picture	The picture you see from the picture browser	Transfer to ACeP13 to see the picture
Landscape		
Portrait		
Turn Portrait into landscape		

## 5 Battery protection mode

If the status of battery power is full for long periods of time, it will lead to reduced battery life and easy to expansion damage. To protect the battery and extend battery life, the ACeP13 device turns on battery protection mode by default and charging up to 50%±5%. Stop charging the battery with external current above 55% and recharge again when discharged to 45%. If battery protection mode is turned off, the battery capacity can be charged to 100%, which is suitable for use in situations where you are travelling out.

ACeP13 battery protection mode is off by default.

### 5.1 Turn off battery protection mode

The ACeP13 device connects to the PC via USB cable and turns on USB error detection. Restart the system after performing the commands below. battery protection mode will be turn off.

```
adb root
```

```
adb shell "echo 6 > /oema/bms/pbpm"
```

```
adb reboot
```

### 5.2 Turn on battery protection mode

If the external power supply is used to AceP13 device for long periods of time, battery protection mode is recommended to turn on.

Connect the ACeP13 to the PC via USB cable and turn on USB error detection. Restart the system after performing the commands below. battery protection mode will be turn on.

```
adb root
```

```
adb shell "echo 1 > /oema/bms/pbpm"
```

```
adb reboot
```

## 6 FCC Statement

### Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

### FCC Caution:

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

### IMPORTANT NOTE:

#### Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. Country Code selection feature to be disabled for products marketed to the US/CANADA