



# Product Manual

## LCD Compact EX (CC-02)



### Original Instruction

Version 221124

Copyright © 2022 HYENA INC. All Right Reserved.



# Table of Contents

## Introduction

### Product Features

Product Description .....	1
Parts Description .....	1
Product Dimension .....	2
Cable Pin Definition .....	2

### Technical Data

Function.....	3
Characteristic.....	3
Mounting Parameter .....	3
Connection.....	3
Indicator Information .....	4
Certification.....	4

### Mounting

Tool List .....	5
Accessory List.....	5
Mounting Instructions.....	5

### Operation

Operation Instructions.....	6
Error Code List.....	8

### Safety Instructions

Important Notice .....	9
Moving and Storage Instructions .....	9
Maintenance .....	9
Product Label.....	9
Disposal.....	9

## Introduction

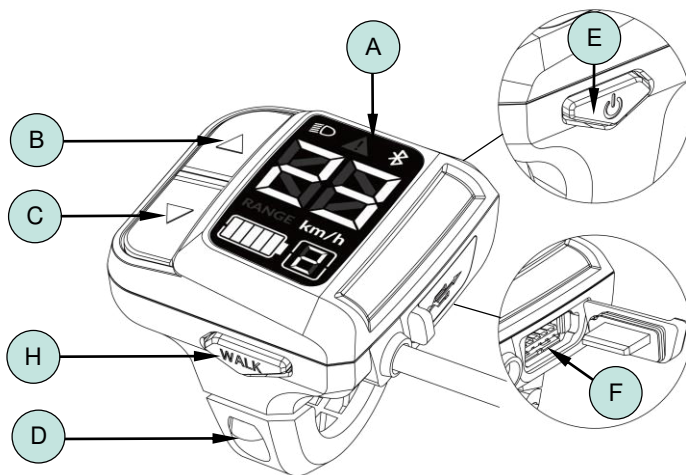
This manual is intended primarily for the trained technician to install, disassemble, or maintain the Hyena e-bike system only. Please read all the safety warnings and instructions carefully. Failure to follow the warnings and instructions may result in death or severe injuries. Save this manual for future reference.

## Product Features

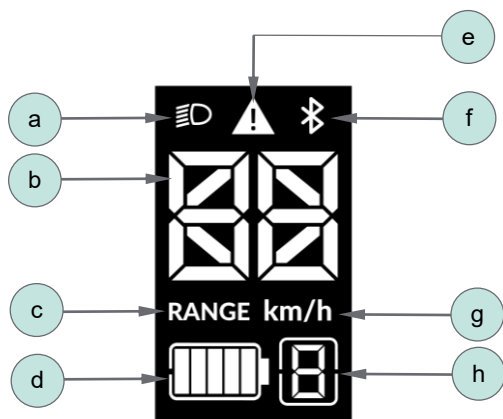
### Product Description

The Hyena LCD Compact EX (CC-02) e-bike handlebar HMI features all in one function: compact size with complete info and precise digital information, large ergonomic buttons. In addition, support the Apps and service tool connection via Bluetooth.

### Parts Description



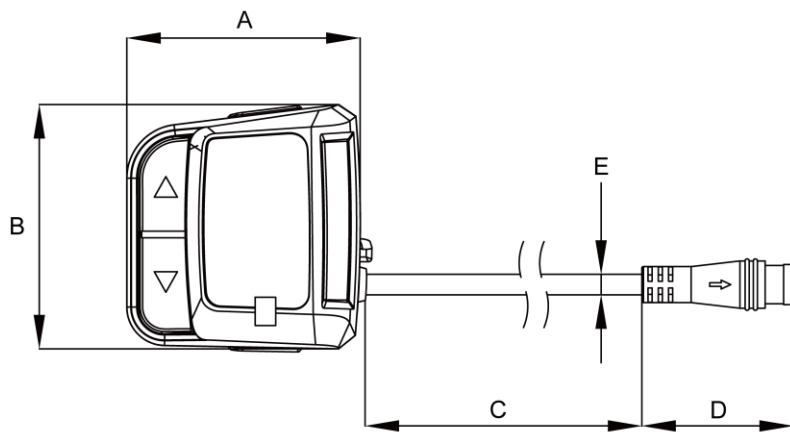
Item	Description
A	Display screen
B	UP & Increase support level button
C	DOWN & Decrease support level button
D	Fastening screw
E	Power on/off button
F	USB connection port (for diagnostic)
G	Cable
H	Walk-assist button



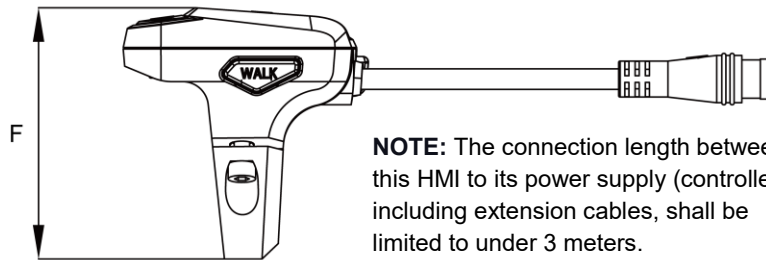
### DISPLAY ELEMENT

Item	Description
a	Light indicator
b	Speed/range
c	Display information type
d	Battery capacity indicator
e	Error indicator
f	Bluetooth indicator
g	Unit indicator
h	Support level

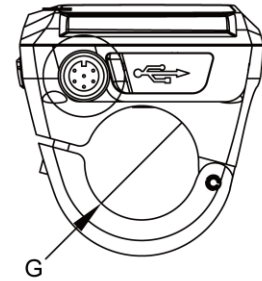
## Product Dimension



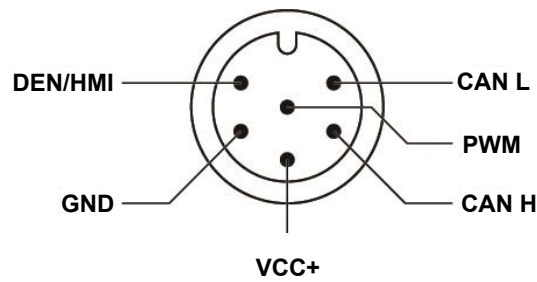
Item	Dimension (mm)
A	45.7
B	47.7
C	570 or 720
D	29.5
E	Φ4.0
F	49.0
G	Φ22.2



**NOTE:** The connection length between this HMI to its power supply (controller), including extension cables, shall be limited to under 3 meters.



## Cable Pin Definition



## Technical Data

Function		
Number of button	4	Power/Up/Down/Walk
Turn on/off system	Power button	
Switch motor support level	Up/Down button	
Switch information	Short press walk-assist button	Current speed & Range
Turn on/off light	Long press Up button	
Walk-assist	Refer to page 7	
USB charging	Max. 5V/1A	USB 2.0 TYPE A
Connection	Bluetooth / USB 3.0 / Hyena 6P	
Battery wake up function	Yes	HMI/DEN

Characteristic		
Protocol	CAN	Support Hyena CAN
Rated voltage	12Vdc	
Operating voltage	10 to 14Vdc	
Rated current	0.6A	
Quiescent current	<1mA	Measure condition a. System off b. Battery, HMI, Display, Controller, Motor and Sensor are connected well. c. Remove all smart parts.
Operating temperature	-10°C to +40°C @80%RH	
Storage temperature	-20°C to +70°C @80%RH	
Waterproof level	IPX5	

Mounting Parameter		
Dimension (mm)	L47.7, W45.7, H48.9 mm	
Mounting position	Left handle bar	
Clamp diameter	22.2 mm	
Cable length	570/ 720 mm	40010C20A: 570mm 40010C22F: 720mm
Standard connector	Hyena 6P male	CM-WP408-06M
Compatible of brake	BL-T4000 / BL-M6000 BL-MT201 / BL-MT401	SHIMANO
Compatible of shifter	Do not recommend	

Connection		
Bluetooth connection	Bluetooth 4.2 BLE	Support to HRA (Hyena Rider Assistant) rider app & HST (Hyena Service Tool)
USB connection	USB 3.0 TYPE A	Support to HST

## Indicator Information

<b>Current speed</b>	0 to 99	Unit in 1 km/hour
<b>Range</b>	0 to 99	Unit in 1 km (Battery with Hyena CAN required)
<b>Riding support level</b>	0 to 4	
<b>Battery status</b>	5 segments	
<b>Light on indicator</b>	Head light icon	
<b>Bluetooth status</b>	Bluetooth icon	
<b>Error alert</b>	Warning icon & Number	Refer to error code table

## Certification

<b>EN 15194:2017</b>	Yes	
<b>CE</b>	Yes	
<b>BQB</b>	Yes	Bluetooth
<b>RoHS 2.0</b>	Yes	

## Mounting

### Tool List

Hexagon key M3

Disc hex bolts

### Accessory List

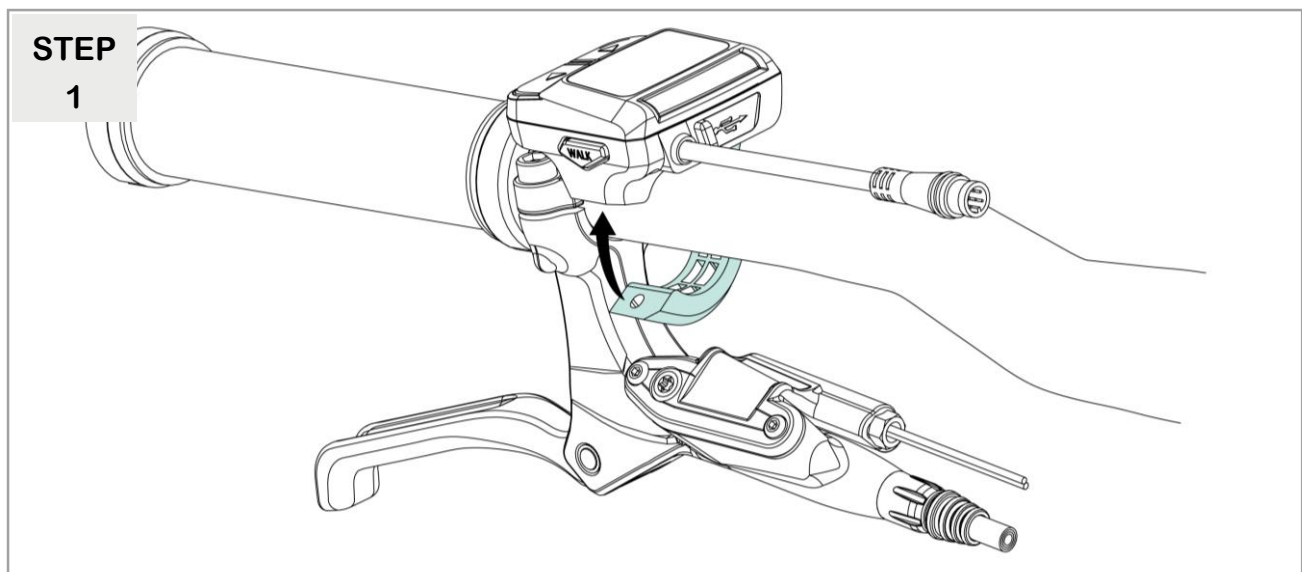
Hex socket head screw

M3x0.5Px10mm

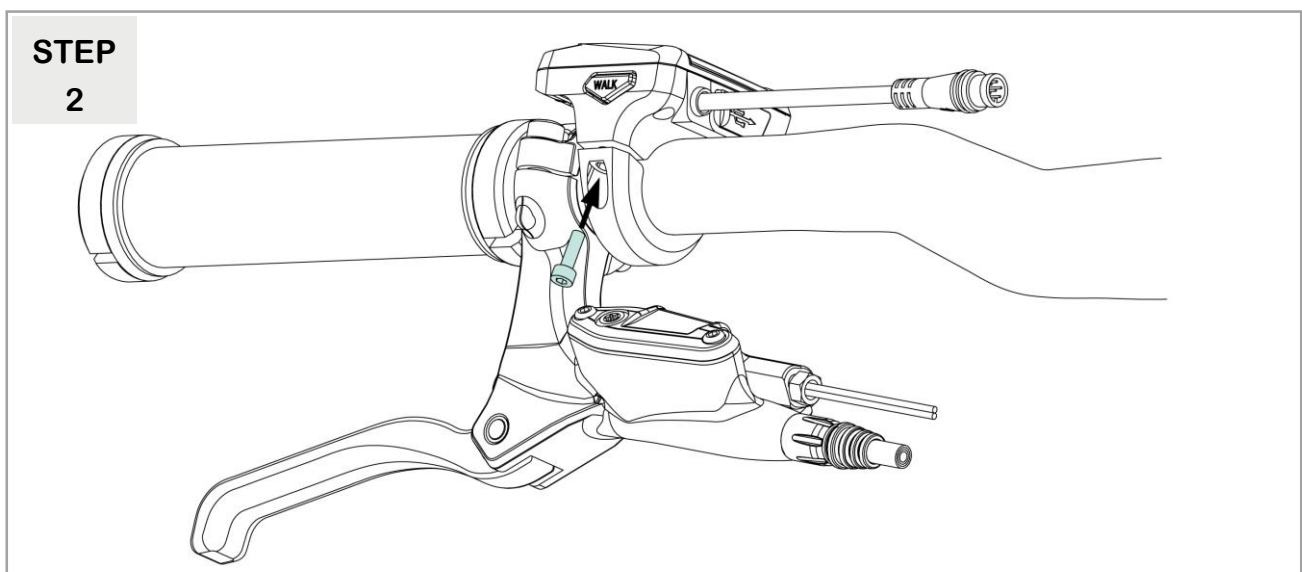
1 pc

### Mounting Instructions

- Use the proper tools during the installation or removal process.
- Fasten the hex bolt with 1.0 Nm torque value.
- Carefully install is necessary, do not strike it with any tool such as a hammer or wrenches.



Mount the HMI hook on the handlebar.



Mount and fasten the hex socket head screw with torque to 0.25 Nm (2.5 kgf/cm).

## Operation

**Caution!** The e-bike system can only be activated when the following requirements are met:

- A sufficiently charged battery is attached.
- The e-system is appropriately connected.

### Operation Instructions

#### Turn on/off the e-bike system

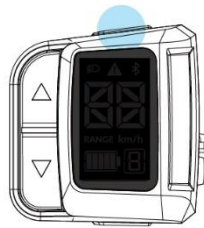
Long press the **power button** to turn it on/off.

Long press (> 2 secs)



ON

Long press (> 2 secs)



OFF

#### Switch between speed mode/range mode

Short press the **power button** to switch information.

Short press (<0.5 secs)  
Power Button to Switch

Speed Mode



0 km/h



15 km/h



25 km/h

Range Mode



90 km



25 km



In mode 0  
Range mode will shows 「---」

## NOTE

Always switch off the e-Bike system when parking the e-Bike or before removing the battery.

### Support level adjusting

Short press the **UP/ DOWN button** to adjust the support level while you pedal.

- Default on Off mode
- None circulation



No Assistive(Off Mode)

Short press  
(<0.5 secs)



Mode 1



Mode 2



Mode 3

## NOTE

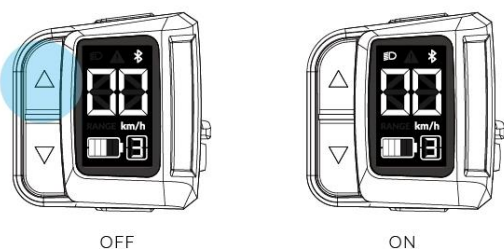
- The system is activated as soon as you start pedaling.
- The e-bike drive output only supports a speed below 25/45 km/h, as soon as you have reached 25/45 km/h, the e-system suspends the motor support, then automatically reactivates when your speed is below 25/45 km/h.



### Turn on/off light

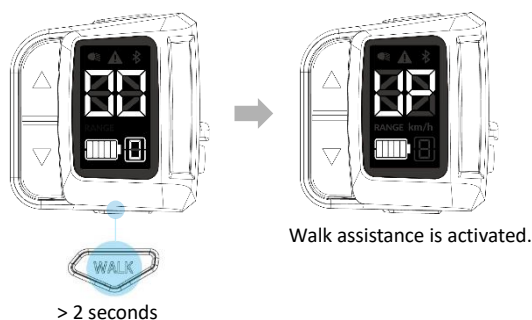
Long press **UP button** to turn on/off light when e-bike equipped with front/rear lights.

>2 secs



### Walk assistance

Long press and hold the **WALK assist button** to activate the walk assist mode.



Press and hold the **UP button** to start the walk assist. As long as you are holding the up button, your e-bike will be propelled forward at a slow speed.



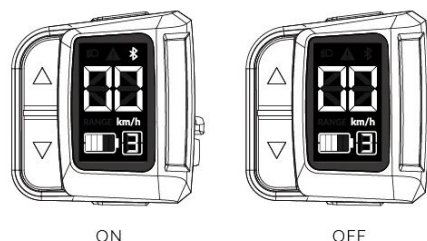
Release the **UP button** to stop pushing your e-bike. Suppose no buttons are pressed within 5 seconds in the walk assist mode. In that case, system will return to general mode automatically for safety. Or if the **DOWN/WALK assist button** is pressed in the walk assist mode, the system will also return to the general mode.

### NOTE

The walk assistance function must only be used when pushing the e-bike. Make sure you are ready and stand steady before activating the walk assistance. Do NOT activate the walk assistance when you ride on the e-bike or if the wheels are not in contact with the ground.

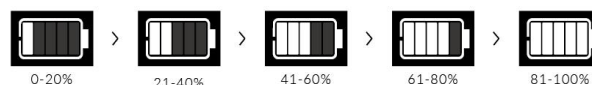
### Bluetooth connection

Bluetooth indicator shows when connected.



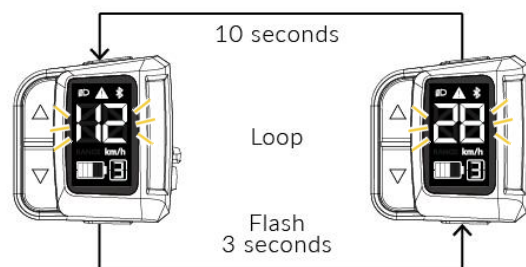
### Battery indicator

The icon shows the battery capacity.



### Error alert

The error code shows on the middle screen when a system error is detected. Refer to the error code list for details.



The alert icon stays on display when the number indicator returns to the general riding info. All the HMI function remains the same.

### Suspend the error alert

Press any button to suspend the error code flashing; the alert icon will stay on until the system error is solved.

## Error Code List

Code	Category	Error Description	Code	Category	Error Description
16	Torque sensor	Torque sensor voltage too high	68	Battery	Charging temperature error
17	Torque sensor	Torque sensor voltage too low	69	Battery	Battery cell overvoltage
20	Front TPMS	Front tire pressure too high	70	Battery	Battery cell undervoltage
21	Front TPMS	Front tire pressure too high	71	Battery	Battery overcharge
22	Front TPMS	Front TPMS battery capacity low	72	Battery	Battery short circuit
23	Front TPMS	Front TPMS temperature too high	73	Battery	Battery overdischarge
24	IoT Box	Satellite positioning error	74	Battery	Discharging temperature error
25	IoT Box	SIM card error	75	Battery	Battery cell balancing error
26	IoT Box	Database error	80	Controller	Controller overheat
27	IoT Box	Fail to connect server	81	Controller	Battery communication error
32	Motor	Motor hall all voltage too high	82	Controller	Locked rotor (pedal assist)
33	Motor	Motor hall all voltage too low	83	Controller	Locked rotor (walk assist)
34	Motor	Motor signal error (U)	84	Controller	Controller communication error
35	Motor	Motor signal error (V)	85	Controller	Controller FET error (U)
36	Motor	Motor signal error (W)	86	Controller	Controller FET error (U)
37	Motor	Motor malfunction (U)	87	Controller	Controller FET error (V)
38	Motor	Motor malfunction (V)	88	Controller	Controller FET error (V)
39	Motor	Motor malfunction (W)	89	Controller	Controller FET error (W)
40	Motor	Motor overheat	90	Controller	Controller FET error (W)
44	Rear TPMS	Rear tire pressure too high	91	Controller	Controller FET circuit error
45	Rear TPMS	Rear tire pressure too low	92	Controller	Controller FET overcurrent (FW)
46	Rear TPMS	Rear TPMS battery capacity low	93	Controller	Controller FET overcurrent (HW)
47	Rear TPMS	Rear TPMS temperature too high	94	Controller	Controller protection unit error
48	Speed sensor	Speed sensor error	95	Throttle	Locked rotor (Throttle)
49	Speed sensor	Cadence sensor error	96	Throttle	Throttle overvoltage
50	Chain	Drivetrain error	97	Throttle	Throttle undervoltage
55	Rear brake light	Brake light malfunction	98	HMI	Button communication fail
56	Horn	Horn malfunction	99	HMI	HMI button communication error
59	Turn Lights	Turn signal error (RR)	100	HMI	Display panel malfunction
60	Turn Lights	Turn signal error (RL)	101	HMI	USB charge port error
61	Turn Lights	Turn signal error (FR)	112	Front light	Front light malfunction
62	Turn Lights	Turn signal error (FL)	113	Maintenance	Maintenance notification
64	Battery	Battery overvoltage	114	Bluetooth	Bluetooth error
65	Battery	Battery undervoltage	115	Brake sensor	Brake sensor error
66	Battery	Low capacity	116	Rear light	Rear light malfunction
67	Battery	Empty capacity	117	Light	Light short circuit

## Safety Instructions

### Instructions Pertaining To A Risk Of Fire, Electric Shock, Or Injury To Persons

**WARNING!** When using the **LCD Compact EX (CC-02)** e-bike HMI, basic precautions should always be followed, including the following:

- Read all the instructions before using the product.
- Close supervision is necessary to reduce the risk of injury when using the product near children.
- Do NOT put fingers or hands into the product.
- Do NOT use this product if the flexible power cord or output cable is frayed, has broken insulation, or any other signs of damage.
- All the component leads shall use original Hyena components.
- This product is not intended to be used at ambient temperatures above 40°C (104°F) or less at ambient temperatures of -10°C (14°F).
- Do NOT immerse the product or any e-system component in water.
- Do NOT place the product or any e-system component near fire or heat.
- Always turn off the e-bike system and remove the battery before installing, disassembling, or modifying any components on the e-bike.
- The connection length between this HMI to its power supply (controller), including extension cables, shall be limited to under 3 meters.

#### Important Notice

- This product manual is intended primarily for the trained technician to install, disassemble or maintain the e-bike.
- Users not professionally trained for bicycle assembly should not attempt to install, disassemble or modify the components themselves.
- All Hyena e-system manuals and technical documents are accessible online at “[www.hyena-ebike.com](http://www.hyena-ebike.com)”.
- The term “battery” is used in these instructions to mean all original Hyena e-bike batteries.
- Read and observe the safety warnings and directions contained in all the Hyena e-bike system operating instructions and in the operating instructions of your e-bike.

#### Moving and Storage Instructions

- Please keep the product and all e-system components in their original package and keep tools or other metal objects away from them during storage and moving.
- If you did not keep the original packaging, they can be packed in strong cartons with proper packing materials such as bubble wrap or soft cloth, and label the cartons “Fragile”.
- Do NOT store the product at ambient temperatures above 70°C (158°F) or less at ambient temperatures of -20°C (-4°F).

- Cover the product to prevent sunlight damage if you keep it stored at any place for more than a week.
- Store the product on a fireproof surface without contact with water, heat, or sand.
- Do NOT place any heavy item on the product or any e-system component.
- Do NOT place the product or any e-system component in the car trunk for more than one day.
- Do NOT load or move the product in the rain whenever possible, and make sure it has no moisture or mildew before loading it.
- Do NOT drop the product from more than 30 cm (11.81 inches) in height.

#### Maintenance

- Do NOT clean the product or any e-system component with detergent or organic solvent. Only clean the product with a water-dampened soft cloth.
- Do NOT clean the product or any e-system component with pressured water.

#### Product Label

- On the product label at the bottom of the HMI, you can find the product number and QR code.



#### Disposal

- In accordance with Directive 2012/19/EU, electronic devices that are no longer usable and defective/drain batteries must be collected separately and recycled in an environmentally friendly manner.



This symbol is only valid within the European Union. Follow local regulations when disposing of used batteries. If you are not sure, consult the place of purchase or a bicycle dealer

- The e-system drive unit, including the motor, controller, battery, speed sensor, torque sensor, HMI, accessories, and packaging, should be disposed of in an environmentally correct manner.
- Do NOT dispose of e-bikes and their components with household waste.

**SAVE THESE INSTRUCTIONS**

**Hyena Inc.**

*Tel: +886 4 23598810*

*Fax: +886 4 23598610*

*[www.hyena-ebike.com](http://www.hyena-ebike.com)*

*Address: No.25, Jingke N. Rd., Nantun Dist., Taichung City 408, Taiwan (R.O.C.)*