

# DOMYOS CONSOLE 3 - TECHNICAL SPECS -



PROJECT NAME	MODEL CODE	ITEM CODE
DOMYOS CONSOLE 3 - B ENERGY	8363074	2067995
DOMYOS CONSOLE 3 - B ENERGY CN	8369237	2112862
DOMYOS CONSOLE 3 BLACK	8368168	2101226
DOMYOS CONSOLE 3 BLACK CN	8369246	2112890
DOMYOS CONSOLE 3 BLACK R	8368167	2101224
DOMYOS CONSOLE 3 BLACK R CN	8369244	2112888

## REVISION HISTORY

2020-07-27	1. Add CMIIT_FCC_IC sticker 2. Add FCC Statement 3. Add IC Statement	7	Leo LV
2019-08-22	Add CMIIT ID Sticker	6	Leo LV
2018-02-15	DTC 2018 Firmware version is 1.7	5	Guillaume DIVRECHY
2017-05-16	DTC 2017	4	Guillaume DIVRECHY
2016-03-07	Adding : - new Console3 codes (page 01) - remote control cable spec and testing method (page 07) - PMMA artwork for China versions (page 06) - Traceability sticker codes (page 10) - Bluetooth codes and equipment codes and testing method (page 13) - Toggle-switch selector position (page 05)	3	Guillaume DIVRECHY
2015-12-28	Modifications in yellow	2	Guillaume

2015-12-07	ORIGINAL DOCUMENT	1	DIVRECHY Guillaume DIVRECHY
DATE	DESCRIPTION	REVISION	AUTHOR

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# 1. PRODUCT PROFILE

## 1.1. Introducing

Technical requirements of Domyos middle of range Console: **DOMYOS CONSOLE 3**

This console is connected thanks to Bluetooth Low energy protocol.

This console can connect an APP with Android and Ios devices as to provide a new user experience.



Console3 main features :

- 5 Led modules :
  - RPM information (pedalling cadence)
  - KCAL information (calories burnt)
  - SPEED + TIME + DISTANCE + HR informations (pushing keys under Led module will display the associated value)

Heart-logo is changing color according to heart-rate zone.

**Heart rate value < 60% Fcmax = Blue**

**Heart rate value = 60% Fcmax ~ 69%Fcmax = Green**

**Heart rate value = 70% Fcmax ~ 79%Fcmax = Yellow**

**Heart rate value = 80% Fcmax ~ 89%Fcmax = Orange**

**Heart rate value  $\geq$  90% Fcmax = Red**

Bluetooth logo controlled ON or OFF by bluetooth through APP

- Workout profile (5x7 dots matrix)
- Resistance level (from 1 to 15)
- 9 touch-keys (capacitive membrane). **Keys are in white colors.**
- One heart-rate receiver
- One hand-pulse receiver (only for DOMYOS CONSOLE 3 - B ENERGY)
- One chest-belt provided with the Console 3
- Two remote control cables (only for CONSOLE 3 "R" versions)

## 2. Standards of CONSOLE 3

- 2.1. 2011/65/UE Directive “RoHs 2”
- 2.2. REACH directive
- 2.3. R&TTE directive
- 2.4. Temperature cycling test.

Low temperature :  $(- 10 \pm 2)^{\circ}\text{C}$  during 10 min  
High temperature :  $(+60 \pm 2)^{\circ}\text{C}$  during 10 min  
Cycles : 50 Times

- 2.5. Temperature storage test.

+60°C during 24 hours consecutive

- 2.6. ESD test.

Air:  $\pm 12\text{KV}$   
Contact:  $\pm 7\text{KV}$

Reports are inside PACE

## 3. USER-keyflow and Machine-Keyflow

User-keyflow is the main keyflow used by end-customer.



CONSOLE 3 -  
Keyflow.pdf

### DECATHLON CONTROL

Test can be done using a bike or jig simulator proposed by CY.

Functional test of the user-interface of the console :

- 1) Displays are working and information values are changing during a training session. (Kcal, distance, time, rpm, BPM (*when active*), resistance level)
- 2) Heart-logo is changing color from blue – green – yellow – orange – red – according to heart-rate value.
- 3) Each touch-key is activate during a finger touch contact < 1second
- 4) Servo-motor is turning when increase or decrease a resistance level (0 to 15)

### ACCEPTANCE CRITERIA

Main functions are ok

Machine-keyflow is a ghost menu for maintenance. This menu can check :

1. The firmware version of the console

2. The hardware version of the console
3. Console total time of use
4. Console total km of use
5. Console serial number (see traceability paragraph)

Machine-keyflow has also a unit-choice menu where end-user can change from Km to Miles.



MachineMenu\_CONS  
OLE3\_V2.pdf

### DECATHLON CONTROL

**Firmware version is 1.7 (enter inside maintenance ghost menu)**

**By default, console unit is Km (use console with bike of bike-simulator jig)**

**Toggle-switch selector on the rear-casing is on VM**

**Toggle-switch selector on the rear casing is on VE (for "R" console version only)**

### ACCEPTANCE CRITERIA

**Firmware and Hardware version are ok  
Unit is Km**

## 4. Electronic hardware

### 4.1. Electronic schematic



Console 3

Schematic\_DTC.pdf



Hand

pulse\_Schematic.pdf



Heart rate

receiver\_Schematic.p

#### NEW SCHEMATIC DTC 2018 :



Console 3\_DTC  
Schematic\_20180102

### 4.2. PCBA



Console 3  
PCBA\_DTC.pdf



Hand  
pulse\_PCBA.pdf



Heart rate  
receiver\_PCBA.pdf

#### NEW PCBA DTC 2018 :



Console 3\_DTC  
PCBA\_20180102.pdf

### 4.3. Bill of Material



Console 3  
BOM\_DTC.xls

### 4.4. Main EE components



AT42QT1040.pdf



BM70BLE01FC2.pdf



HT1632C.pdf



PIC24FJ128GA106.p  
df



ULN2804.pdf

### 4.5. Hand-pulse cables (only for Bike E-energy console reference)



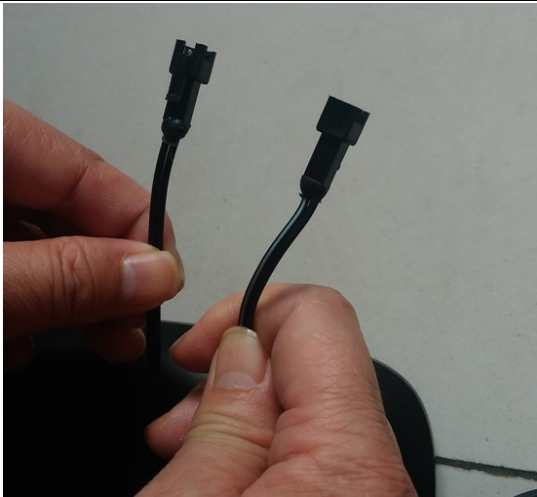
Handpulse cable  
connector.pdf



2P handpulse  
cable.pdf

#### DECATHLON CONTROL

Check the connector gender is male.



### ACCEPTANCE CRITERIA

**Cables are correct.**

### DECATHLON CONTROL

**Using CY hand-pulse sensor kit. For information hand-pulse monitoring is less accurate than chest-belt monitoring.**

#### **Without tablet and smartphone put on the console tablet holder :**

Testing method as end-user case :

- a) put your hands on hand-pulse sensors jig
- b) waiting 30 seconds to get a stabilized value
- c) after these first 30 seconds, check if value fluctuation is under +/- 10bpm during 30 more seconds.

(hand-pulse technology is not precise, just for marketing)

#### **With tablet and smartphone put on the console tablet holder :**

Testing method as end-user case :

- a) put your hands on hand-pulse sensors jig
- b) waiting 30 seconds to get a stabilized value
- c) after these first 30 seconds, check if value fluctuation is under +/- 10bpm during 30 more seconds.

(hand-pulse technology is not precise, just for marketing)

Test has to be done placing the tablet on its different 4 faces.

### ACCEPTANCE CRITERIA

**Heart-rate is ok with hand-pulse sensors**

## **4.6. Remote-control cables (only for CONSOLE 3 BLACK R reference)**



Remote control  
cable\_2pin female jar (up resistance level)



Remote control  
cable\_2pin male jack (down resistance level)

### **DECATHLON CONTROL**

Check the gender of each connector is correct.

Functional test, increasing and decreasing the resistance level.

### **ACCEPTANCE CRITERIA**

Gender is correct, function is ok.



## 5. Mechanical hardware

### 5.1. 2D drawings of consoles parts and assembly



### 5.2. Datasheet of the plastic parts



### 5.3. Glues datasheet (for PMMA and Rubber-pad)



### 5.4. Elastic strap (for the tablet holder hook system) 2D drawing



### 5.5. PMMA artwork and cosmetic



### 5.6. Protection film artwork



## DECATHLON CONTROL

### **Cosmetic** :

- 1) Few scratches on protection film surface
- 2) Protection film has no fold, no tear
- 3) No scratches on PMMA surface
- 4) No trace of glue on the edges of rubber and PMMA
- 5) No trace of incruusted dust on plastic casing
- 6) PMMA print is correct and clean (no drip, print is uniform, compliant with artwork)

### **Assembly** :

- 1) Casing is correctly clipped all around (<1mm of air gap between front and rear plastic casing)
- 2) PMMA stickness is correct (example of 4 hours temperature 70°C test)
- 3) Rubber stickness is adjusted on all edges (<1mm of air gap between rubber edge and plastic casing)
- 4) Rubber stickness is correct (example of 4 hours temperature 70°C test)
- 5) Elastic strap is correctly fixed, the plastic hook can cover a IPAD 10" when in landscape  
The maximum lenght is 420mm (+/-5mm) after streching with a maximum pulling-force of 3,1Kg



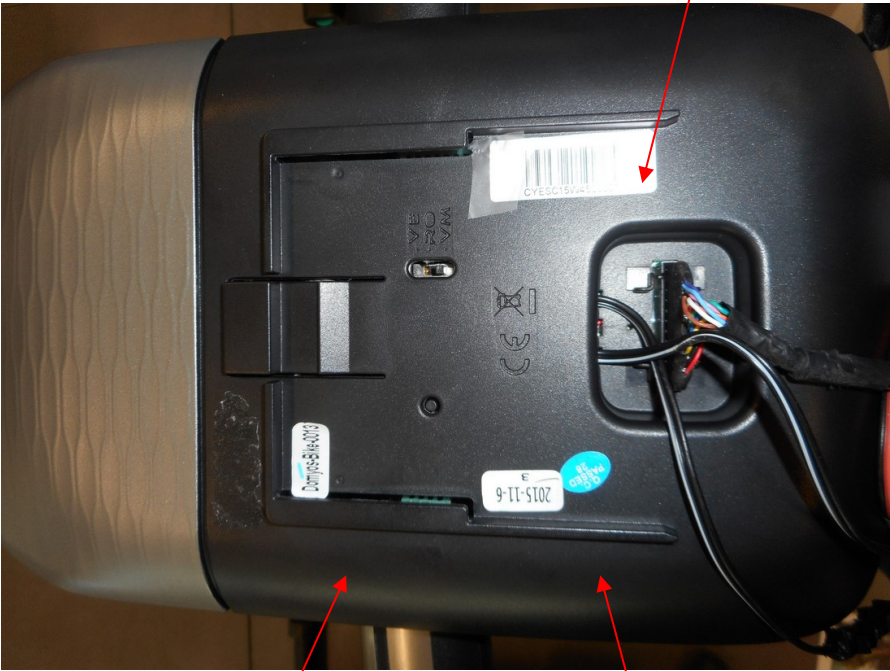
## ACCEPTANCE CRITERIA

This control is very subjective, trust on QPL high requirement to validate or not.

## 6. Traceability

**Traceability sticker : console serial number**

Format: CYBEECYWwwxxxxx  
 example : CYBEEC15W1700013 (the 13th console produced in week 17/2015) (CY = chang-yow, BEE = bike e-energy, C = console)



ID of the console for Bluetooth connection      internal CY production sticker

Traceability format :

Console	Traceability
<b>DOMYOS CONSOLE 3 BLACK</b>	CY <b>BKE</b> CYWwwxxxxx // <b>BKE = BK</b> (Bike) + <b>E</b> (Europe)
<b>DOMYOS CONSOLE 3 BLACK CN</b>	CY <b>BKCC</b> YWwwxxxxx // <b>BKC = BK</b> (Bike) + <b>C</b> (China)
<b>DOMYOS CONSOLE 3 BLACK R</b>	CY <b>ELE</b> CYWwwxxxxx // <b>ELE = EL</b> (Elliptical) + <b>E</b> (Europe)
<b>DOMYOS CONSOLE 3 BLACK R CN</b>	CY <b>ELCC</b> YWwwxxxxx // <b>ELC = EL</b> (Elliptical) + <b>C</b> (China)
<b>DOMYOS CONSOLE 3 - B ENERGY</b>	CY <b>BEE</b> CYWwwxxxxx (specific for one bike only)
<b>DOMYOS CONSOLE 3 - B ENERGY CN</b>	CY <b>BEECC</b> YWwwxxxxx (specific for one bike only) <b>C</b> (china)

### DECATHLON CONTROL

Stickers are all here and stuck in the right position

**Important: For Chinese Version, CMIIT ID sticker has to be pasted near Bluetooth Name Sticker**

**CMIIT ID check in this [LINK](#)**

Console serial number inside firmware must be compliant with serial number on traceability sticker (checking with Machine Keyflow menu)

### ACCEPTANCE CRITERIA

Stickers are ok, traceability is ok

## 7. Chest-belt

### 7.1. Datasheet



Chest belt  
specification.pdf

#### DECATHLON CONTROL

##### **Using CY heart-rate simulator jig.**

##### **Without tablet and smartphone put on the console tablet holder :**

Accuracy required is +/- 5 BPM value when signal is stabilized between the belt and the console.  
Fluctuation is +/- 3 BPM.

Chest-belt horizontal, facing the front of Console 3 with a distance of 60cm.

##### **With tablet and smartphone put on the console tablet holder :**

Accuracy required is +/- 5 BPM value when signal is stabilized between the belt and the console.  
Fluctuation is +/- 3 BPM.

Chest-belt horizontal, facing the front of Console 3 with a distance of 60cm. Test has to be done placing the tablet on its different 4 faces.

#### ACCEPTANCE CRITERIA

**Heart-rate is ok with chest-belt**

## 8. Bluetooth specification

### 8.1. Technical specification under this [\[LINK\]](#)

#### DECATHLON CONTROL

Connect the Console 3 with CY testing APP with Android tablet AND Ios tablet.  
Activating one or two functions to check if bluetooth is working. Not necessary to check all the functions.

#### ACCEPTANCE CRITERIA

Bluetooth connection with Ios and Android are ok

**Important : CY APP is using the same bluetooth SDK as inside the end-user APP. The SDK is the bluetooth link between APP and Console. CY APP is reliable to control on production.**

Console	Bluetooth code	EquipmentModel
<b>DOMYOS CONSOLE 3 BLACK</b>	Domyos-Bike-xxxx	8368168
<b>DOMYOS CONSOLE 3 BLACK CN</b>	Domyos-Bike-xxxx	8369246
<b>DOMYOS CONSOLE 3 - B ENERGY</b>	Domyos-Bike-xxxx	8363074
<b>DOMYOS CONSOLE 3 - B ENERGY CN</b>	Domyos-Bike-xxxx	8369237
<b>DOMYOS CONSOLE 3 BLACK R</b>	Domyos-EL-xxxx	8368167
<b>DOMYOS CONSOLE 3 BLACK R CN</b>	Domyos-EL-xxxx	8369244

#### DECATHLON CONTROL

Check the bluetooth code written on sticker corresponds to the console bluetooth code pairing.

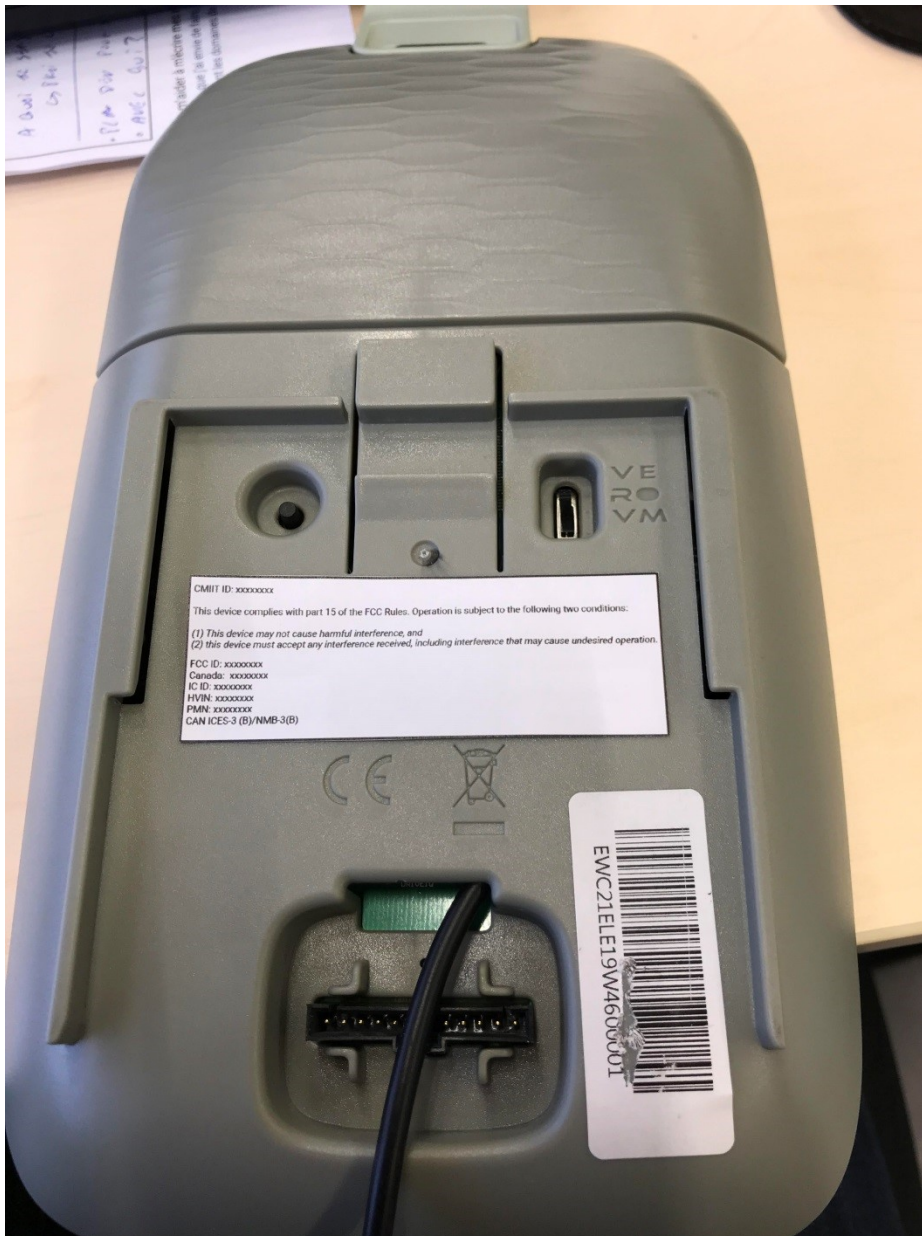
Check the EquipmentModel bluetooth code is correct (using CY testing App)

#### ACCEPTANCE CRITERIA

OK / not OK

**Important : CY APP is using the same bluetooth SDK as inside the end-user APP. The SDK is the bluetooth link between APP and Console. CY APP is reliable to control on production.**

## 9. CMIIT\_FCC\_IC Label



**CMIIT ID check in this [LINK](#)**

**CMIIT\_FCC\_IC Label Documents**

**CMIIT ID: 2016DP5352**

### 9.1. FCC Statement

FCC 15.21 Information to user

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

FCC 15.105 Information to the user (Class B)

Note: 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 or more 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.

This equipment complies with radio frequency exposure limits set forth by the FCC for an uncontrolled environment. This device must not be co-located or operating in conjunction with any other antenna or transmitter.

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.

## 9.2. IC Statement

IC RSS-Gen 8.4 User Manual Notice for Licence-Exempt Radio Apparatus

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

- (1) This device may not cause interference; and
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

- (1) L'appareil ne doit pas produire de brouillage;
- (2) L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

This equipment complies with radio frequency exposure limits set forth by the Innovation, Science and Economic Development Canada for an uncontrolled environment.

This device must not be co-located or operating in conjunction with any other antenna or transmitter.

Cet équipement est conforme aux limites d'exposition aux radiofréquences définies par la Innovation, Sciences et Développement économique Canada pour un environnement non contrôlé.

Ce dispositif ne doit pas être utilisé à proximité d'une autre antenne ou d'un autre émetteur.