# UPDATING LIST

| Version | Date | Modifications | Writer | Checker | Approver |
|---------|------|---------------|--------|---------|----------|
| 0 | 2007-19-02 | Creation | V.G. | S.M. | P.G. |
| 1 | 2007-23-08 | New board dimensions | V.G. | S.M. | P.G. |
| A | 2008-25-04 | Sticker changes | V.G. | S.M. | P.G. |

## SUMMARY

# 1   Subject

The purpose of this document is to specify the functions and characteristics of the electronic product "transmitter HYPERMASTER HM CAMPUS", for the electronic voting system RF HM CAMPUS.
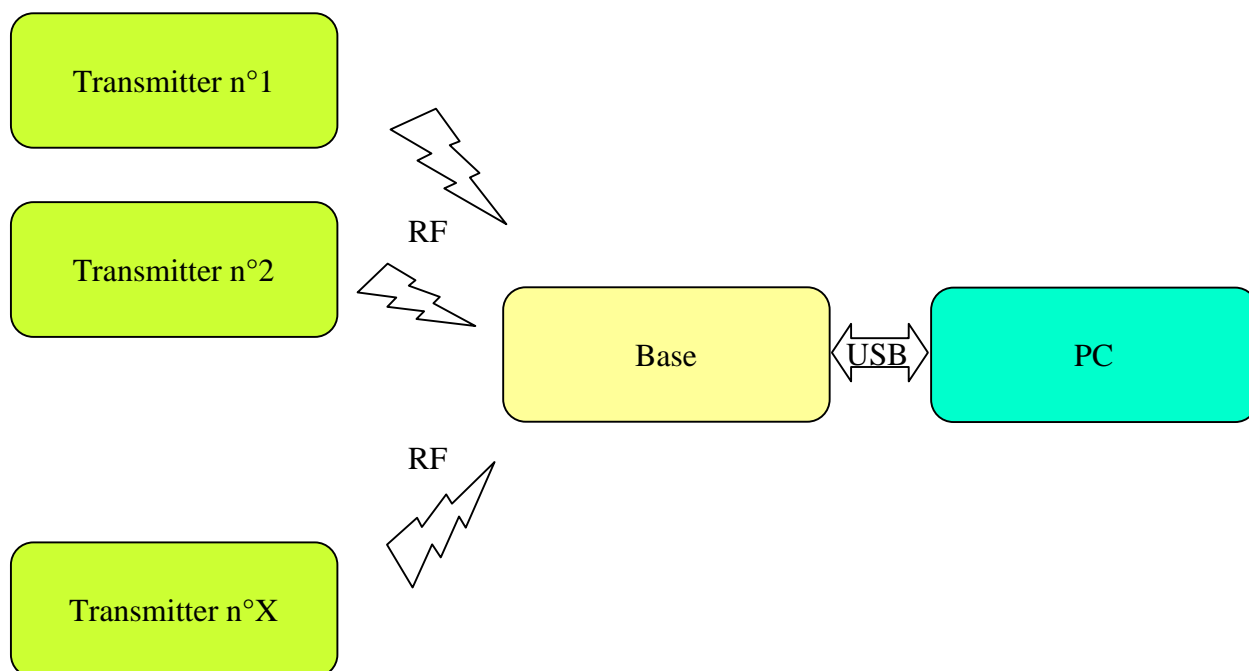
# 2   Glossary

CRC : Cyclic Redundancy Check,
RF : Radio Frequency,
TBD : To Be Define,
TBC : To Be Confirme.

# 3   Applicable Standart

FCC Part 15.

# 4 Transmitter HM CAMPUS introduction



The transmitter is composed of :

*Requirement n°1.* a 12 keys keyboard with :
- 10 voting keys,
- 1 garbage key,
- 1 synchronization / separator key.

*Requirement n°2.* one bi-color led (red and light).

*Requirement n°3.* this product is able to communicate on the 2,4 GHz frequency band (from 2400 Mhz to 2482 MHz).

# 5 Keyboard features

## 5.1 Voting keys and garbage key

*Requirement n°4.* the user can press up to 10 keys for voting.

*Requirement n°5.* on each key release, the transmitter seeks to transmit the user input to the base every second at a rate of six attempts at most.

*Requirement n°6.* on each attempt, the led lights up in orange during 200 ms, or in green during one second if an acknowledge is received.

*Requirement n°7.* when an acknowlege is received, the transmitter enters in sleep mode.

*Requirement n°8.* if no acknowledge, the red led lights up during one second then the transmitter enters in sleep mode.

*Requirement n°9.* when the transmitter is waiting for an acknowlege, other user inputs are unaware.

*Requirement n°10.* a press on the garbage key can cancel the previous user inputs.

## 5.2 Synchronization / separator key feature

*Requirement n°11.* a short press (less than 2 seconds), on the synchronization key sends the separator code.

*Requirement n°12.* a long press (more than 2 seconds), on the synchronization key permits to the user for changing the communication channel (from 01 to 82).

*Requirement n°13.* during the synchronization, the led is flashing in red and in green every 200 ms. On every user input, the led lights up in green during 400 ms.

*Requirement n°14.* when the new channel number is entered, the led lights up in orange during one second, and the user has to validate its choice by pressing the synchronsation key again. When this key is pressed, the led lights up in green during one second, then the transmitter enters in sleep mode.

*Requirement n°15.* if the new channel is not in the range from 01 to 82, the led lights up in red during one second instead of green.

*Requirement n°16.* the communication channel is stored in a non volatile memory, even if the cells are removed.

## 5.3 Power feature

*Requirement n°17.* the product works with two CR2032 cells.

*Requirement n°18.* there is no supply voltage monitoring.

## 5.4 Radio feature

*Requirement n°19.* the product can communicate up to 60 m in overall directions.

*Requirement n°20.* the radio baudrate is 250 Kbits/s.

*Requirement n°21.* the default channel is 41.

*Requirement n°22.* a 16 bits CRC is used for checking the frame integrity.

*Requirement n°23.* radio communication must be complient with the following document : AS 290 012 000 752.

## 5.5 Other features

*Requirement n°24.* the transmitter has got an unique serial number of 5 digits.

*Requirement n°25.* an aluminium sticker is placed on the back :
- dimensions : 29x33 mm,
- bar code,
- serial number (5 digits),
- product reference,
- ROHS logo,
- CE label,
- FCC label,
- Web site address.

*Requirement n°26.* « HyperMaster Technologies » must be written on the PCB.

### 5.6 Mechanical features

*Requirement n°27.* PCB dimensions : 45 x 95 mm.
*Requirement n°28.* the electronic board is placed into a housing from a supply customer.

## 6 Temperature features

*Requirement n°29.* use temperature : 0°C / +50°C.
*Requirement n°30.* storage temperature : 0°C / +70°C.