Store Electronic Systems

Electronic Shelf Labels

Installer Manual
Radio installation
37020
- Multi-mode -

TABLE OF CONTENTS

CONNECTION TO THE TRANSMITTER

1 - LIST OF TOOLS REQUIRED

Make sure the correct tools are available before starting the installation.

List of required tools:

- 1 Torx T20 bit screwdriver
- 1 3mm flat screwdriver (for slotted screw)
- 1 cross-head screwdriver
- 1 4mm wire strippers tool
- 1 ratchet crimping tool
- 5 yellow insulated crim-type pin terminals (10AWG)
- 1 good quality ohmmeter or multi-meter
- 1 oscilloscope
- 1 current probe (TEKTRONIX P6021)
- 1 calibration unit
- a dozen cable ties

These tools are essential!

Example:

Multi-meter, Scope and Current probe

CONNECTION TO THE TRANSMITTER

2 - PRELIMINARY CHECKS

The checks to perform on the transmitter are very simple and quick, and this is why they are mandatory.

Using the Torx screwdriver, unscrew and remove the 4 screws closing the upper cover.

The **main check** will consist of examining if some foreigner component are inside of the internal part of the transmitter and more if nothing is moving inside.

Each antenna connector output will be individually tested to check that there is no continuity with the earth of the equipment.

Using the cross-head screwdriver, unscrew all the terminals of the terminal block with two complete turns.

Connect the power cord in the power inlet; turn on the main power switch.
At this stage you can observe that a lot of LEDs are blinking and at the end the blue **CPU LED** have to be lit. That mean the transmitter is ok.
If the **CPU LED** not lit, that means the transmitter needs to be sent to SES maintenance dept.

The transmitter is ready for connection.

It is now necessary to prepare the antenna cables.

CONNECTION TO THE TRANSMITTER

3 - IDENTIFICATION & MARKING

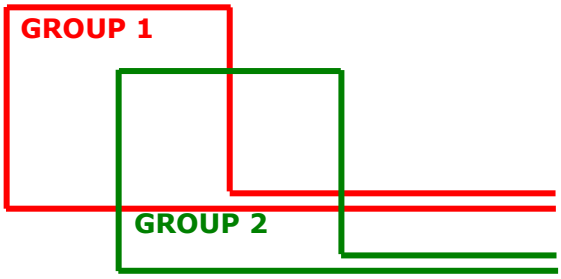
The **toggling principle** requires the use of two groups of antennae, G1 and G2.

This principle is based on the fact that data will be sent successively **on one group, then on the second one**.

In fact, accepting that a metallic obstacle located on the path between the antenna wire and the labels can disturb the data transmission, it is easy to understand that using a second antenna network, offset from the first, the problem caused by this obstacle can be resolved.

This hypothesis has been shown to be true and **is used today for optimal operation**.

By referring to the diagram below, connection of the antennae in switching mode appears most simple.



The antenna cables routed to the transmission system are marked with rings as follows, using colored tape and the final connection will be made to the terminal block as indicated in the following diagram.

Group **1** output (hot point) = (red) = **TERMINAL 1**

Group **1** return = (blue) = **TERMINAL 2**

Group **2** output (hot point) = (red) = **TERMINAL 3**

Group **2** return = (blue) = **TERMINAL 4**

A simple method enables any errors to be avoided; just take the antennae wires and connect the pairs.

In other words:
- Group **1** between **1 and 2**
- Group **2** between **3 and 4**

We recommend the use of colored marker rings according to the international **color code, which** enables permanent, effective and easy to understand marking.

1 (brown **2** red **3** orange **4** yellow)

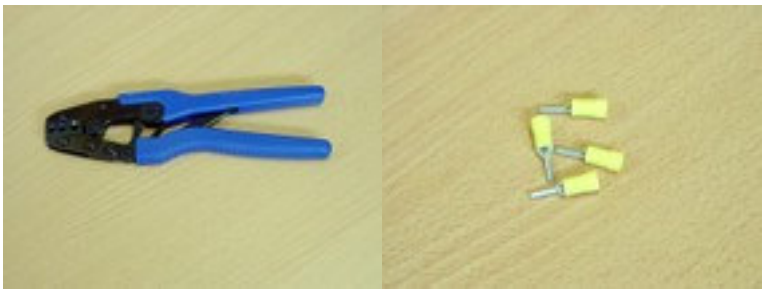
CONNECTION TO THE TRANSMITTER

4 - CRIMPING

" **Stripping"** must be performed **with care**, observing the following points:
- Only strip **8 mm** of sheath;
- **Do not score** the cable strands;
- Remove the sheath by "unscrewing" the conductor by a **counter**-**clockwise** rotation (twisting direction of the conductor wires);
- Be very careful when stripping that the strands **remain in the twisted position**, otherwise fitting the terminal will be difficult.

Place the marker rings on the cable, put the terminal completely in and crimp with the ratchet pliers, which are **the only tools to guarantee correct crimping** as the pliers will only release once they have been totally closed.

For safety reasons, it is imperative to use adequate terminals (provided with the device) properly crimped to ensure security and reliability of the system.

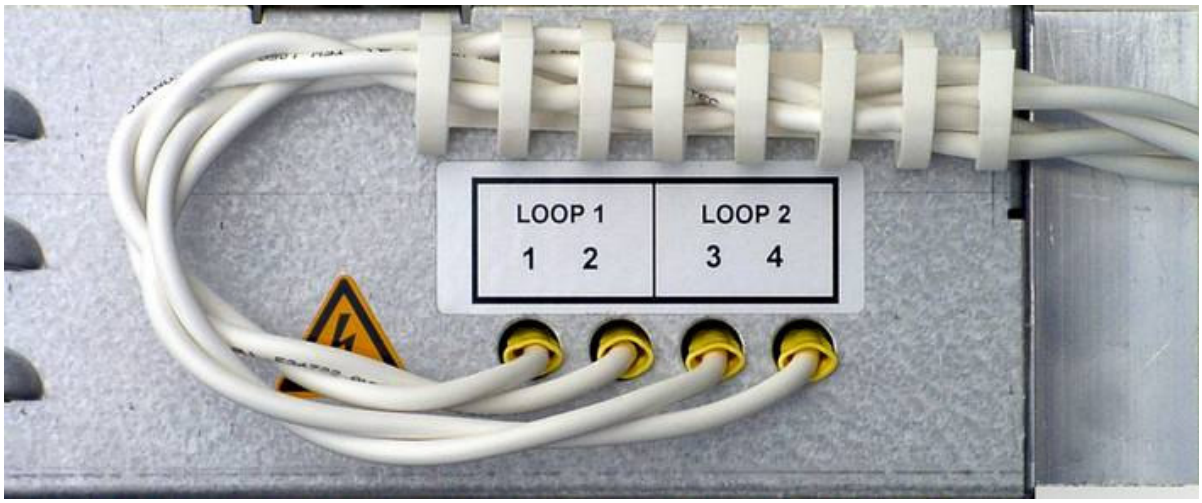


Ratchet crimping tool Insulated crim-type pin terminals

Do not forget that **each loop antenna cables must be twisted** two by two to avoid radiation that could disturb equipment located close to the strand.

Once crimped, each cable will be connected to the terminal block. Use the cross-head screwdriver, which will enable **firm tightening** !

The cables will be curved so that the wire guide can rout them.



Now the transmission system is ready for the last phase: **the calibration**.

CALIBRATION

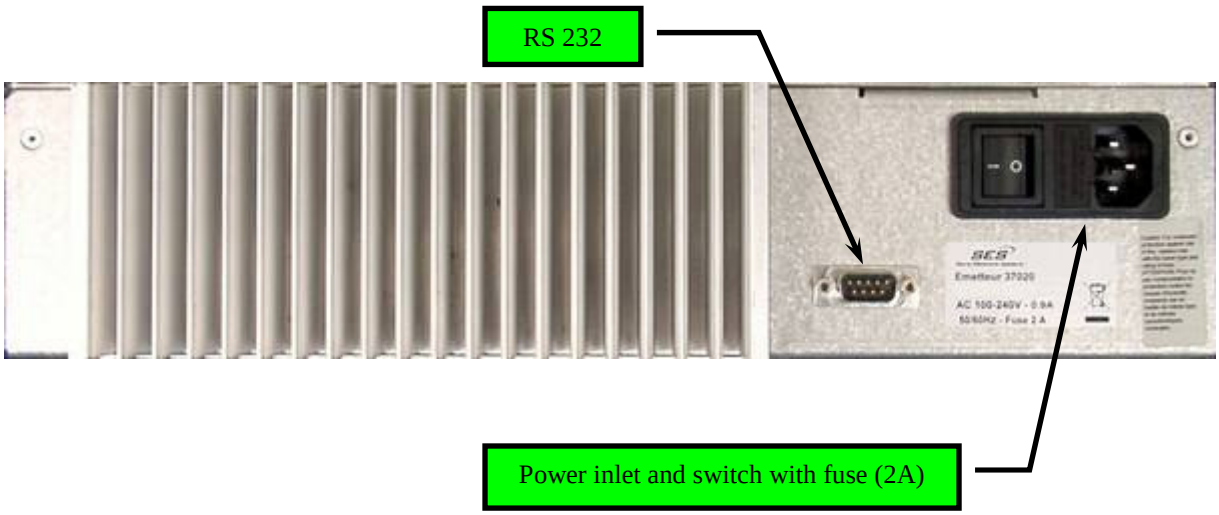
1 - TRANSMITTER

a) PRESENTATION OF THE FRONT PANEL:

The front panel of the transmitter is fitted with:

1) A "**Loop status**" zone, with:
   - Two green LEDs indicating the active group, "**Loop 1**" and "**Loop 2**";
   - Two rows of three red fault indicating LEDs "**High**", "**Leak**" and "**Low**";
   - An acknowledge button "**Ack**".
2) A "**Control**" zone, with:
   - A "**Vu**" selector push button with three positions: "**I**", "**Φ**" and "**U**";
   - Two orange LEDs "**ΦC**" and " **ΦL**", indicating the phase;
   - A green "**OK**" LED indicating that the transmitter is functional;
3) A "**Status**" zone with two "**State**" and "**CPU**" LEDs;
4) A "**Tuning**" zone with seven orange tuning LEDs.

b) PRESENTATION OF THE BACK PANEL:



CALIBRATION

2 – GENERAL INFORMATION

Before going into the detail of this operation, it is necessary to understand its purpose.

Most electronic devices for amplifying a signal operate with a fixed or relatively constant load.

A Hi-fi amplifier delivers its signal on a 8Ω load: the loud speaker. This load is identical, regardless of brand or power of the loud speakers.

On the other hand, as a CB transmitter operates with antennae, which may be different, it is necessary to make adjustments so that the assembly operates correctly.

For our transmission system, this adjustment is called **calibration**.

The calibration is very important, as our transmitters operate in stores with different surface areas and with unequal antennae.
Furthermore, all the metal objects close to our antennae, which are very long and are found throughout the store, have a very high capacitive and inductive influence on the antennae values.

It is therefore necessary to adjust the amplifier to adapt to these differences.

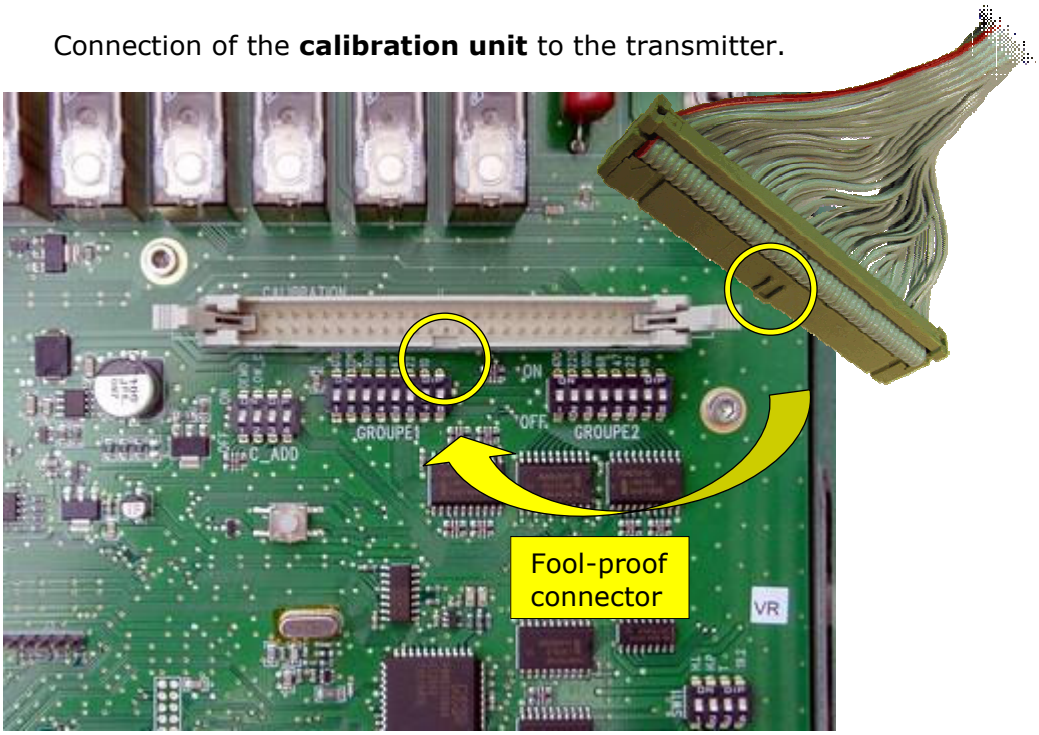
If you power on the transmitter and send a data transmission order, you will not obtain an output current.

This proves the importance of this operation.

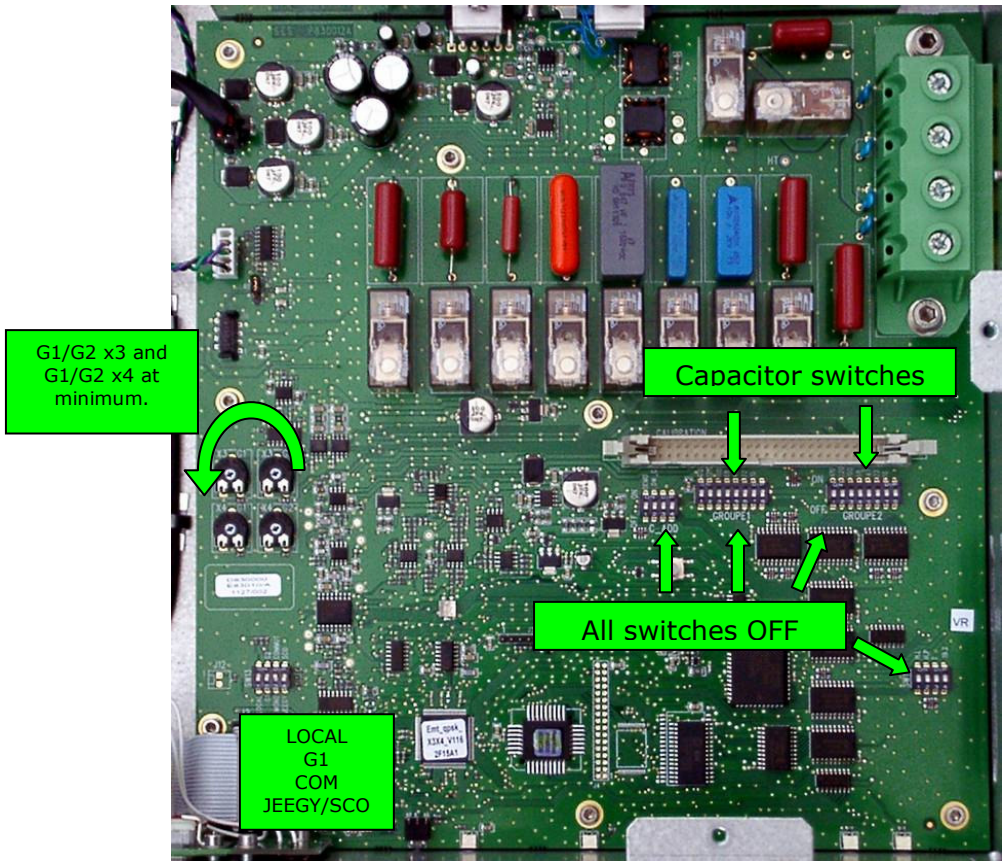
The transmission quality depends on it!

Calibration is carried out by adding capacitors in the tuning circuit. This operation is performed using a calibration unit, the purpose of which is to select and validate the capacitor values corresponding to correct operation.

Connection of the **calibration unit** to the transmitter.



Use this operation to check that the **configuration switches** are positioned correctly.



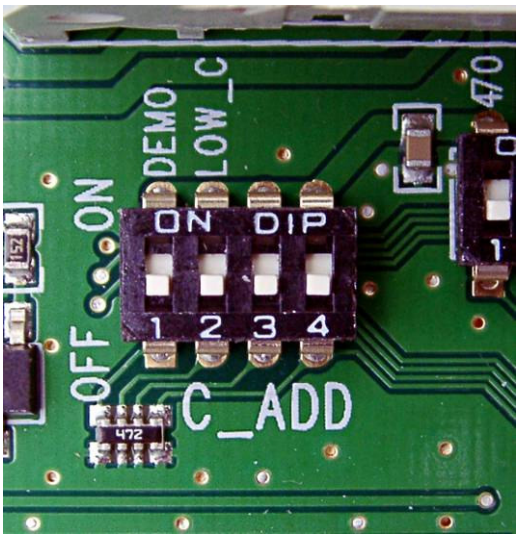
CALIBRATION

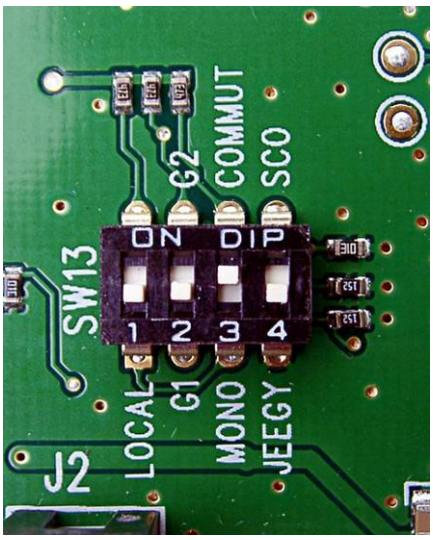
3 - FOREWORD

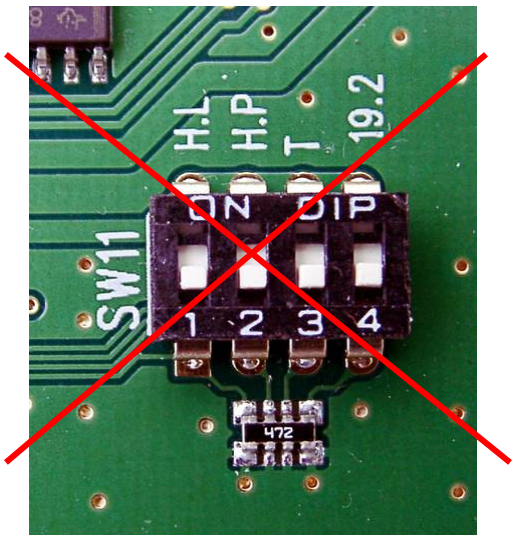
Please note that certain elements accessible inside the transmitter are supplied with potentially hazardous voltages.

We recommend that extreme care be observed to prevent an accident from occurring. Use plastic tools

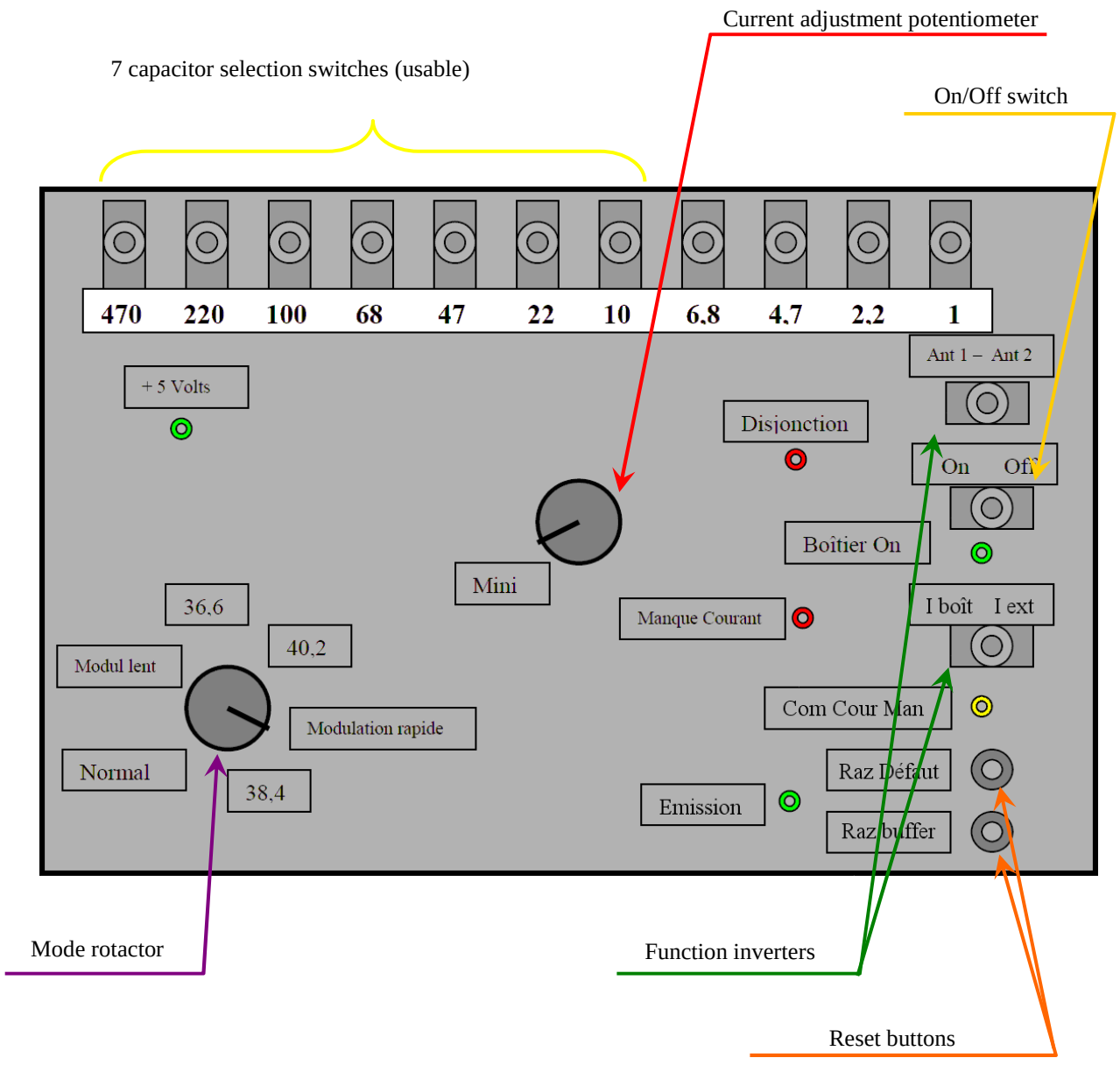
Before you do anything, make sure that the switches of the additional capacitors are **in OFF position** and that the configuration switches are in **LOCAL/G1/COMMUT/JEEGY or SCO position.**







Factory setting,
switches **in OFF position**.



LEDs:

- +5 Volts supplied, Transmission, Unit On
- Manual current control
- Disjunction, No current

CALIBRATION

5 - PROCEDURE

After discovering the calibration unit, we can start!

1) Powering

Make sure you have a **measurement sheet** (attached at the end of the chapter).
Connect the calibration unit to the transmitter and set it to the initial configuration:
1) On / Off switch switched to **Off**,
2) Ant 1 / Ant 2 switch on **Ant 1,**
3) I boît / I ext switch on **I Boît.**,
4) Current potentiometer on **I minimum**,
5) Rotactor on **38.4 KHz**,
6) All capacitor switches **validated** (up),
7) **Power the transmitter** (rear face).

2) Coarse tuning

On the front panel of the transmitter, in the "**Control**" zone, position the selector on **Φ**.
Inside the transmitter, check that **C_ADD/DEMO** is **Off** (Demo mode is used to perform transmissions with small, 4m long max., antennae (1m² maximum surface area)).
Also check that **C_ADD/LOW_C** is **Off**.
Switch **On** the calibration unit by toggling the **On/Off** switch.
Press **RAZ Buffer** (Buffer reset) to initialize the transmitter with the calibration unit.
The transmission system is now operating.

The calibration procedure will be performed by the calibration unit and can be monitored on the Vu-meter and by whether or not the "**Control**" zone LEDs are lit.

Slowly increase the current until the indicator on the Vu-meter stabilizes in a position slightly to the right.

Only the **ΦC** LED must lit.

If **ΦC** and **ΦL** LEDs lit together at this moment, just increase a few the current to turn off one of the two LEDs.

If the **ΦL** LED lit:

- move the **DEMO** switch to **On** (the antenna is very small);
- activate all capacitors of the **transmitter**;
- position the selector on **I**;
- try to increase the current.

  If you can increase it, go directly to chapter: **5.4) Current adjustment**, otherwise check the antenna.

Starting with the largest value, **470nF**, deselect the capacitors one by one.
For each value, if the Vu-meter indicator changes direction, select again the last capacitor adjusted.
When the lowest value capacitor has been tested, record the values in the table on the measurement sheet.
Perform the same assessment for group 2

	470	220	100	68	47	22	10
G1							
G2							

Add the validated capacitors for each group.
If the lowest value is less that **150nF**, switch **On C_LOW** and start the coarse tuning again.

CALIBRATION

5 - PROCEDURE

Note:

- LEDs **ΦC** and **ΦL** are reversed when the Vu-meter **Φ** indicator changes direction.
- If the two LEDs **ΦC** and **ΦL** are lit at the same time, this means that the adjustment is close to optimal. Do not try to seek this situation.

Warning, this could be made by a "disjunction"

- Always make sure that the "**High**" LED of the transmitter remains out. If this LED lights, this means that the current is too strong. This may indicate a disjunction. A "**disjunction**" LED indicates this state on the calibration unit. In this case, slightly reduce the current.
- In the same manner, ensure that the "**Low**" LED remains out. A "**Manque courant**" (Low current) LED on the calibration unit indicates a too low current. In this case, slightly increase the current.
- To turn off the "**High**"/"**Low**" LED indicators, press the "**Ack**" (Acknowledgement) or "**Raz défauts**" (Fault reset) button on the calibration unit.

3) Fine tuning

The previous operations were designed to give the transmitter an approximated tuning on the center frequency. However, the values that you are going to select do not permit with certainty that the output current will be equivalent for the frequency modulated.

To reach this goal, it is necessary to **balance the currents** as follows:

- Set the selector to **I** on the transmitter;
- On the control unit:
  1) Leave the capacitor switches in their positions;
  2) Mode selector on **Lower Frequency** (36.6 or 34.2 kHz);
  3) Using the potentiometer, bring the Vu-meter needle to **4**;
  4) Set the selector to **Highest Frequency** (40.2 or 37.8 kHz) and observe the movement on the Vu-meter.

CAUTION: throughout the adjustment procedure, in the **36,6 kHz** position, the **ΦL** LED must be lit and in the **40,2 kHz** position the **ΦC** LED must be lit. **Otherwise**, repeat the capacitor selection as the operation was not correct.

Now, find the larger of the two values. This is done by switching several times between the two frequencies. You thus have an idea of the current unbalance between the two frequencies.

Position on the frequency of the larger of the two values and adjust the current to **7** using the potentiometer. In the case where the calibration unit potentiometer is already adjusted to maximum, switch to **Iext** and adjust the current using the adjustable **X4G1** (or **X4G2** for group 2) in **JEEGY** mode or **X3G1** (or **X3G2** for group 2) in **SCO** mode

Check the value for the other frequency.

CALIBRATION

5 - PROCEDURE

Using the capacitor switches, starting with the smallest value (10nF), bring the needle to the average of the current readout for each frequency.
If the variation is not large enough, go to the next capacitor switch.

It is important to switch between the two frequencies for each operation on the capacitor switches in order to see the resulting effect. Therefore, carry out this operation with one hand on the mode rotactor and the other hand on the capacitor switches.

If the current is rather low for the two frequencies, you can always increase the stronger of the two up to **7-8**.

It may occur that the strongest current becomes the weakest (and vice versa). This is because you have exceeded the correct value. This is where you bring the capacitor combinations into play.

For example: you have just checked the 220nF switch and you notice that the value is too high, by de-validating the 220 and validating the 100, the 68 and the 47, you will obtain 215. If this value is still too high, de-validate the 47, validate the 22 and the 10, you will then obtain 200nF and so on.

- Refine this adjustment until the difference between the two frequencies is less than one graduation,
- Then set the mode selector on the slow position "**Modulation lente**" and observe the movement of the needle. This must be very slight.

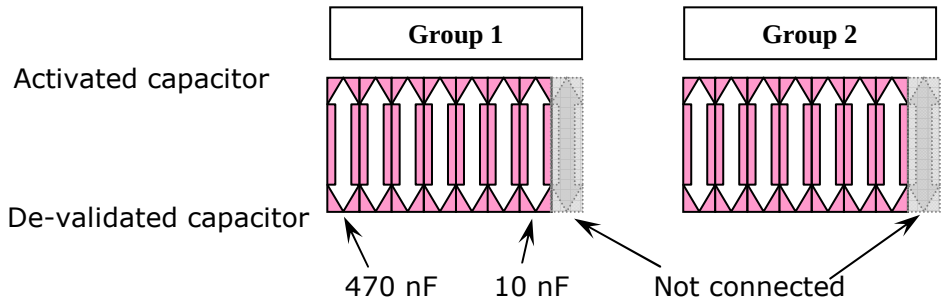
To ensure optimum adjustment, change the switch positions to the smallest combinations possible. If the indicator does not move, you can be sure of the best adjustment.

You must see alternating movement between the two **ΦC** and **ΦL** LEDs.

If this does not occur, repeat the current balancing procedure from the beginning.

The values that you obtain must be recorded on the **measurement sheet**, as well as those of the group 1 dip-switches of the transmitter.

Repeat the operation for group 2.



4) Current adjustment

Now that the second stage is completed and the current is balanced on both frequencies, the output level in the antennas remains to be set.

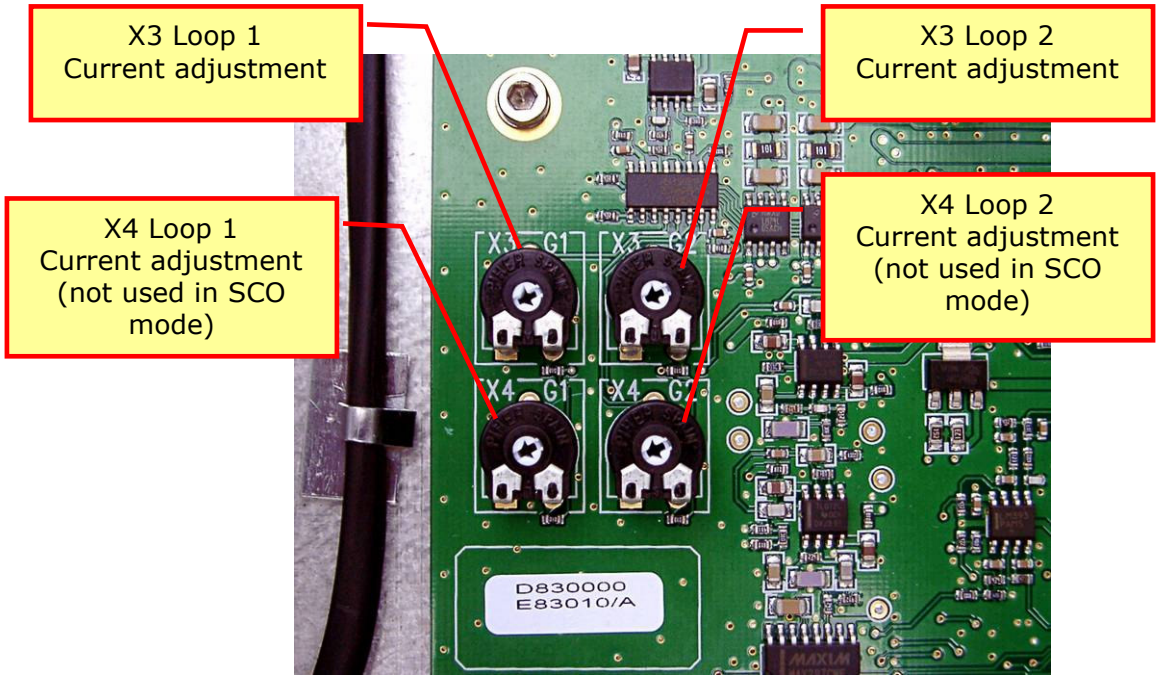
This point deserves **special attention**. In fact, the current adjustment that you're going to make depends solely on you! Set up the oscilloscope and the current probe.

Our system must comply with current standards. The standards specify a **maximum permissible electromagnetic field** that is reached when a current of 2 Amperes, peak-to-peak, circulates in our antennaes.
The adjustment will therefore be carried out so that the 2 Amperes Peak-to-Peak (0.7 Arms) is not exceeded.

The correct adjustment procedure is as follows:

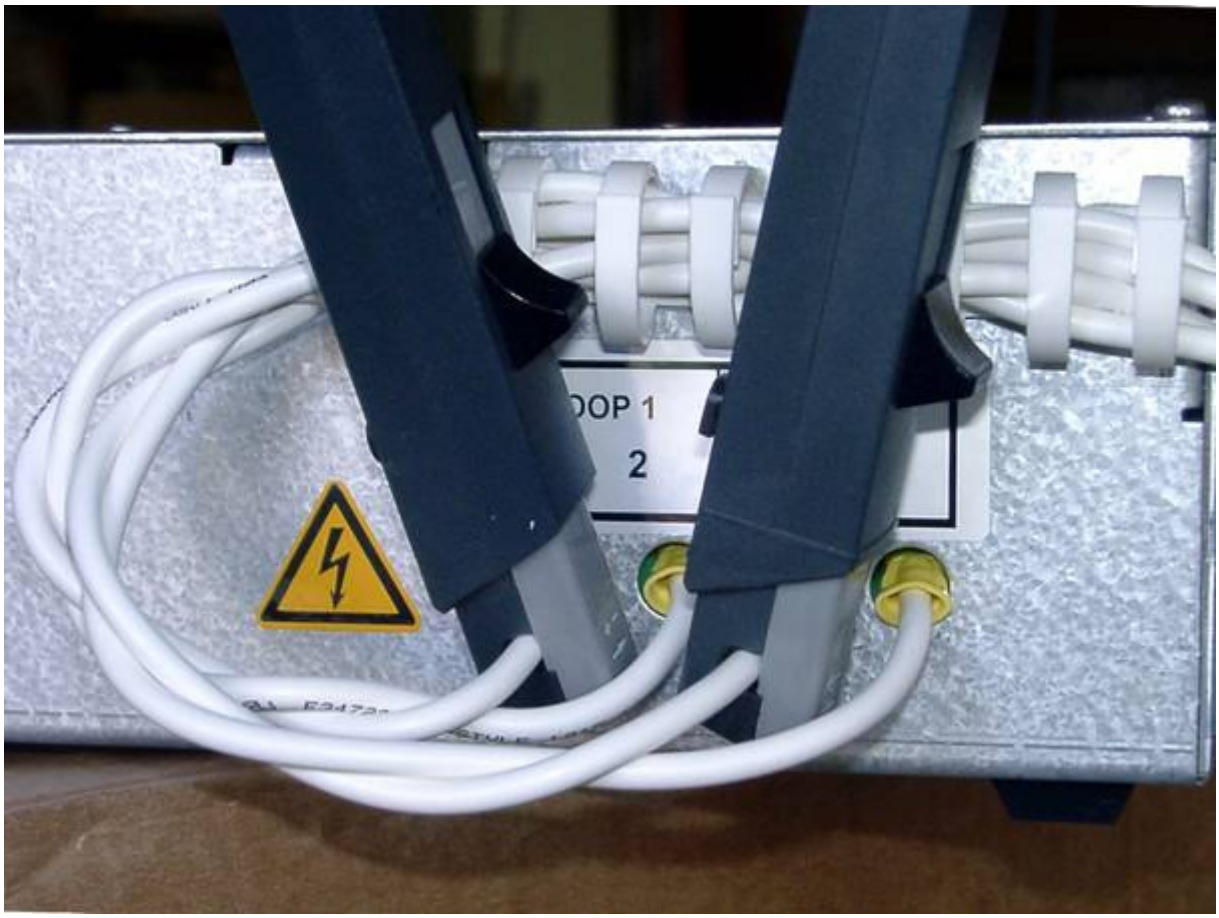
1) Turn off the transmitter;
2) Disconnect the calibration unit;
3) Turn on the transmitter.

Adjustment points



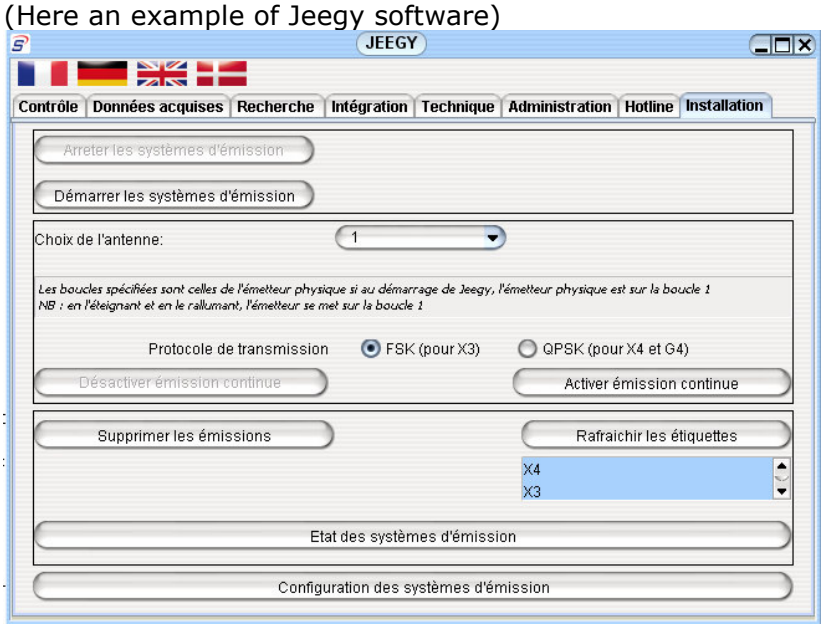
4.1. Antenna current measurement for the two groups

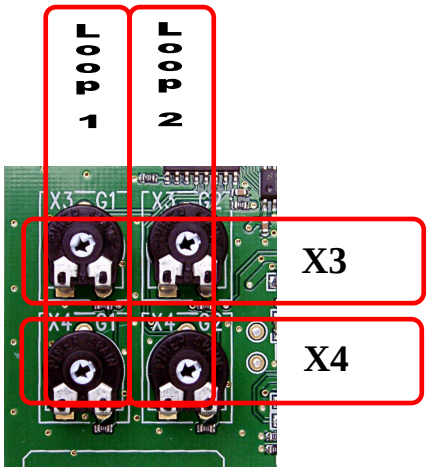
Output current adjustment to **0.7 A rms.** maximum (**2A peak to peak** maximum)



4.2. Current adjustment for each "Loop" and each protocol with JEEGY management system:

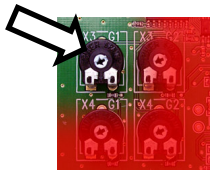
(Here an example of Jeegy software)



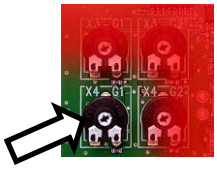


In the next phase, the measurement is systematically performed on antenna of each group (LOOP) and the current will be adjusted on the antenna with the highest value.

- Go to the "Installation" tab;
- Stop the transmission system;

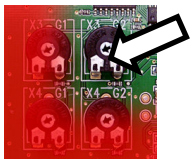


- Select Loop 1 in JEEGY;
- Select the FSK transmission protocol;
- Activate continuous transmission;
- Set the X3 Loop 1 potentiometer to obtain 2 Amp p-p on the antenna;
- Deactivate continuous transmission;

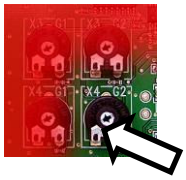


- Select the QPSk transmission protocol;
- Activate continuous transmission;
- Set the X4 Loop 1 potentiometer to obtain 2 Amp p-p on the antenna;
- Deactivate continuous transmission;

Repeat the same procedure for the second Loop.



- Select Loop 2 in JEEGY;
- Select the FSK transmission protocol;
- Activate continuous transmission;
- Set the X3 Loop 2 potentiometer to obtain 2 Amp p-p on the antenna;
- Deactivate continuous transmission;



- Select the QPSk transmission protocol;
- Activate continuous transmission;
- Set the X4 Loop 2 potentiometer to obtain 2 Amp p-p on the antenna;
- Deactivate continuous transmission.

4.3. Current adjustment for each "Loop" with SCO management system:

The transmitter is ready to operate. However, we are going to perform one last check.

Connect the information system to the transmitter and, from the Manager, launch the following commands from the Buffer menu.

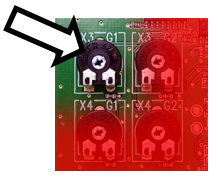
1) Click "**Lecture status**" (Read status)
   Answer : "La mémoire du buffer est vide" ("The buffer memory is empty")

2) Click "**Confirmer**"

3) Select "**Emission continue**" ("Continuous transmission")
   Answer : "N'oubliez pas d'éteindre et de rallumer le buffer avant de le réutiliser." ("Don't forget to switch off and re-start the buffer before using it again.")

4) Click "**Confirmer**"
   - The transmitter start to transmit: the "**State**" LED must lit in orange;
     the "**CPU**" LED must lit in blue;
     the "**Loop 1**" LED must lit;
   - The "**Accord**" LEDs indicate the capacitor values corresponding to the first antenna group.

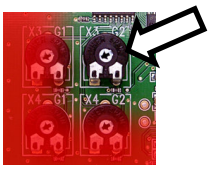
5) Set the **X3 Loop 1** potentiometer to obtain 2 Amp p-p on the antenna.
   - The **ΦC** and **ΦL** LEDs must rapidly flash alternately (perhaps not in "**DEMO**" mode) and the "**Ok**" LED must lit after the acknowledgment of the **Low** current fault.



6) Select "**Emission continue**" ("Continuous transmission")
   Answer : "N'oubliez pas d'éteindre et de rallumer le buffer avant de le réutiliser." ("Don't forget to switch off and re-start the buffer before using it again.")

7) Click "**Confirmer**"
   - The transmitter transmits on the other group
   - The "**State**", "**CPU**" and "**Loop 2**" LEDs must lit;
   - The "**Accord**" LEDs indicate the capacitor values corresponding to the second antenna group.

8) Set the **X3 Loop 2** potentiometer to obtain 2 Amp p-p on the antenna.
   - The **ΦC** and **ΦL** LEDs must rapidly flash alternately (perhaps not in "**DEMO**" mode) and the "**Ok**" LED must lit after the acknowledgment of the **Low** current fault.



9) Click "**Lecture status**" ("Read status")
   Answer : "La mémoire du buffer est vide" ("The buffer memory is empty")

10) Click "**Confirmer**"

Transmission stops, the "**State**", "**ΦC**" and "**ΦL**" LEDs go out.

The transmitter is ready!

CALIBRATION

6 – MEASUREMENT SHEET

Store name:.....

Town:.....

Department:..... Telephone:.....

Country:..... Fax:.....

Transmitter type:..... Serial no.:..... Transmitter no.:.....

Operator / Installer:.....

Antenna value, Ohms: Group 1:..... Ω Group 2:..... Ω

Coarse capacitor tuning value:

	470	220	100	68	47	22	10
G1							
G2							

Sum calculation for each group: Gr1:..... nF Gr2:..... nF

Active modes:

	Yes	No
DEMO	☐	☐
LOW_C	☐	☐

Definitive capacitor tuning values:

	470	220	100	68	47	22	10
G1							
G2							

Loop current value
(peak-to-peak value read from oscilloscope, **2A peak-to-peak max.**):

		Vu-meter value	Current value
	G1	4	
	G2	4	
Final adjustments	G1		
	G2		

Remarks:

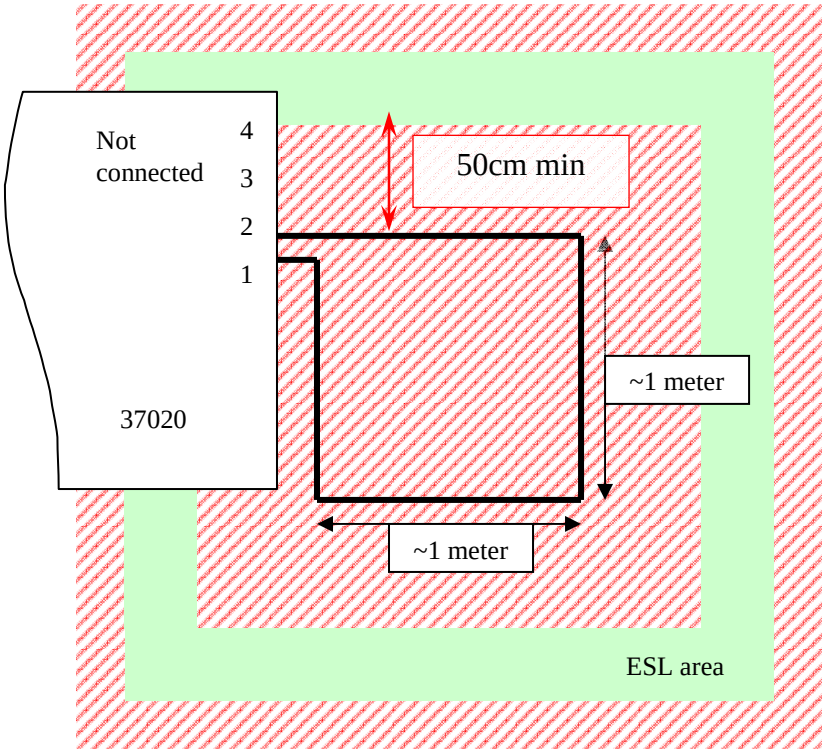
.....

.....

.....

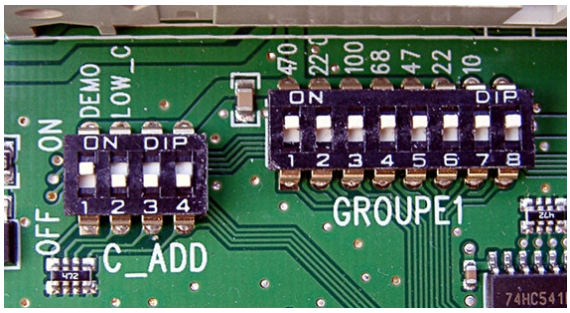
Note: Marking the antenna wires with numbered rings is mandatory and must be carried out for all transmitters.

"DEMO" MODE

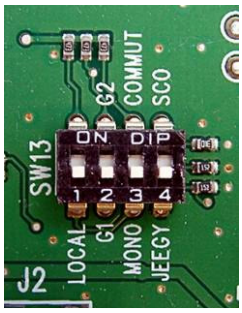


- Connect an approximately **1m²** antenna to the **loop1** terminal (between 1 & 2) on an horizontal non metallic surface.

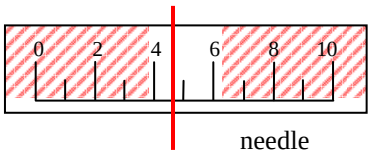
Active all capacitors of the **GROUPE1** and turn on the **DEMO** mode on **C_ADD**.

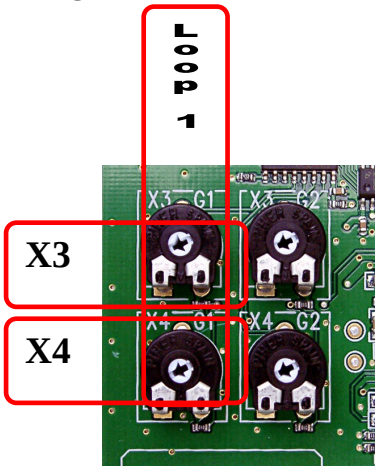


Configure **SW13** :
LOCAL / **G1** / **MONO** / **JEEGY** or **SCO**



- Configure **JEEGY (**or **SCO) management system** for a **G1 single loop transmitter**;
- Select **FSK(X3)** or **QPSK(X4)** protocol and perform a **Continuous transmission**;
- Tune the current with the **adequate X3 or X4 trimmer** around **5** on the Vu meter for the **Loop1**.





Note: **QPSK(X4)** protocol is not available in **SCO** mode.

Store name: **Operator:** **Date:**

1. Checking the connections:

- **Stop** the transmission system
- **Turn off** the **transmitter**
- Check **the locking** of the output terminal block screw and the **crimping of the cable lugs**
- **Measurement of continuity** between the case and earthing point of the store: Value = ___
- **Measurement of continuity** between the case and earth of the store (beam, conduit, radiator, etc.): Value = ___
- **Identify** the antennaes correctly and then disconnect them
- **Retighten the terminal block screws**

1.1. Measurement on the terminal block, **transmitter** off and antennaes disconnected:
(Report the measured **readings** and **measurement units**)

insulation **1** & **2**		insulation **1** & **case**		continuity **2** & **case**		insulation **3** & **4**		insulation **3** & **case**		insulation **4** & **case**	

1.2. Measurement on the antennas

(Report the measured **readings** and **measurement units**)

- **Resistivity** of the antennaes**:**

Ant **1**		Ant **2**	

- Insulation between :

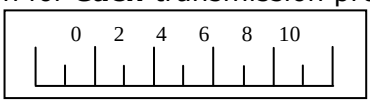
A**1** & A**2**		A**1** & **case**		A**2** & **case**	

Replace antennae, **turn on** the transmitter and do a **new calibration**.

2. Start a continuous emission for **each** transmission protocol (**QPSK** not used in **SCO** mode)

FSK

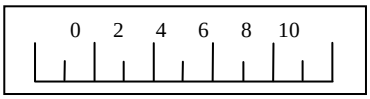
Loop 1 (1) (2)



Stability Min : ___ Max : ___

☐ High ☐
☐ Leak ☐ ΦL ☐ OK ☐ ΦC ☐ **CPU** ☐ **Blinking LED**☐
☐ Low ☐ **State** : Green ☐ Yellow ☐ Red ☐
Tuning : 470☐ 220☐ 100☐ 68☐ 47☐ 22☐ 10☐
Scope reading:
Output : 1 ____ 2 ____ 3 ____ 4 ____

Loop 2 (1) (2)

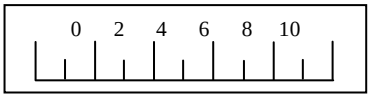


Stability Min : ___ Max : ___

☐ High ☐
☐ Leak ☐ ΦL ☐ OK ☐ ΦC ☐ **Add C :** Demo☐ Low_C☐
☐ Low ☐ **State** : Green ☐ Yellow ☐ Red ☐
Tuning : 470☐ 220☐ 100☐ 68☐ 47☐ 22☐ 10☐
Scope reading:
Output : 1 ____ 2 ____ 3 ____ 4 ____

QPSK

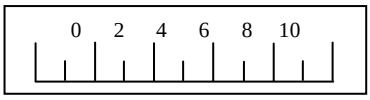
Loop 1 (1) (2)



Stability Min : ___ Max : ___

☐ High ☐
☐ Leak ☐ ΦL ☐ OK ☐ ΦC ☐
☐ Low ☐ **State** : Green ☐ Yellow ☐ Red ☐
Tuning : 470☐ 220☐ 100☐ 68☐ 47☐ 22☐ 10☐

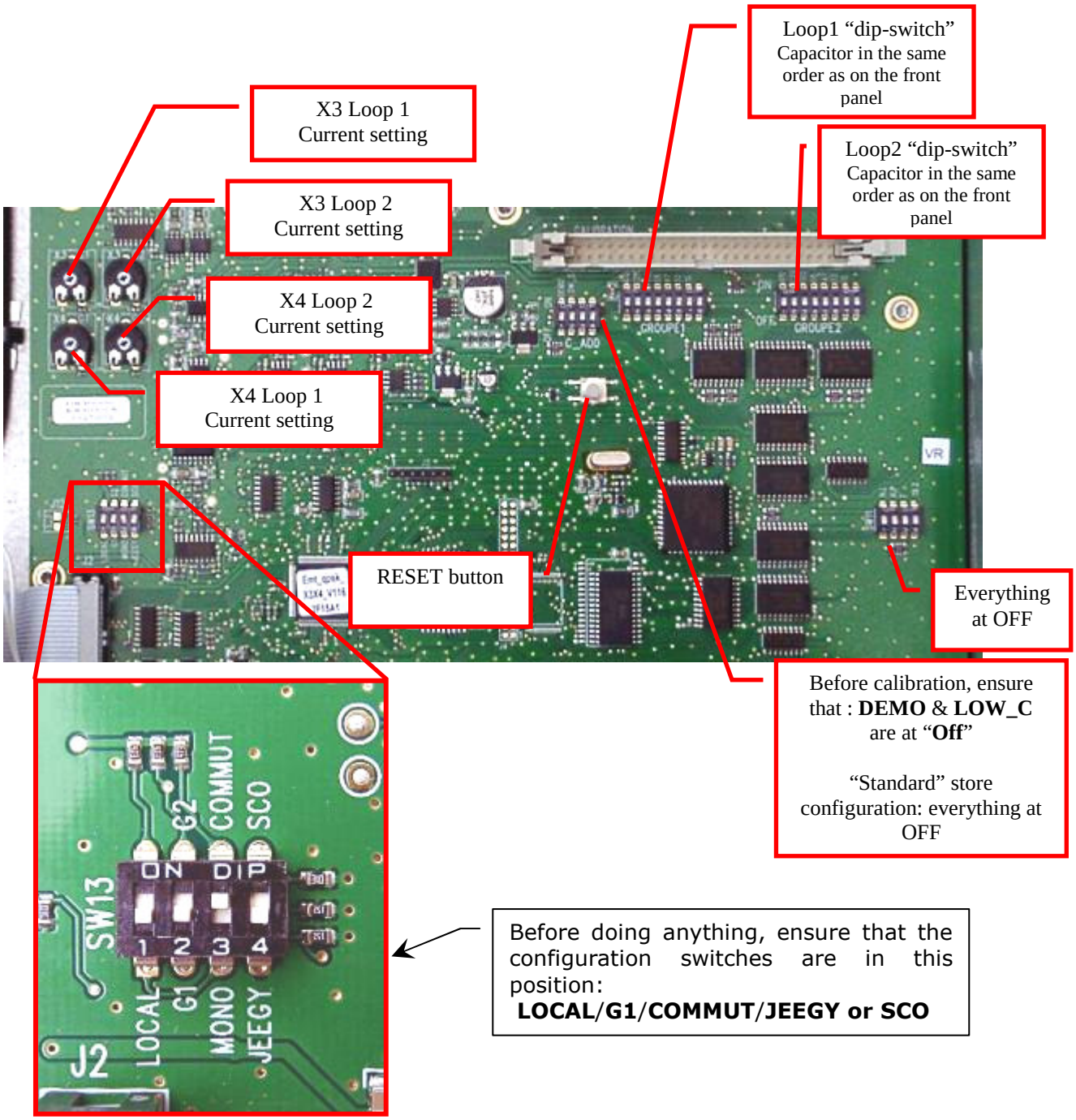
Loop 2 (1) (2)



Stability Min : ___ Max : ___

☐ High ☐
☐ Leak ☐ ΦL ☐ OK ☐ ΦC ☐
☐ Low ☐ **State** : Green ☐ Yellow ☐ Red ☐
Tuning : 470☐ 220☐ 100☐ 68☐ 47☐ 22☐ 10☐

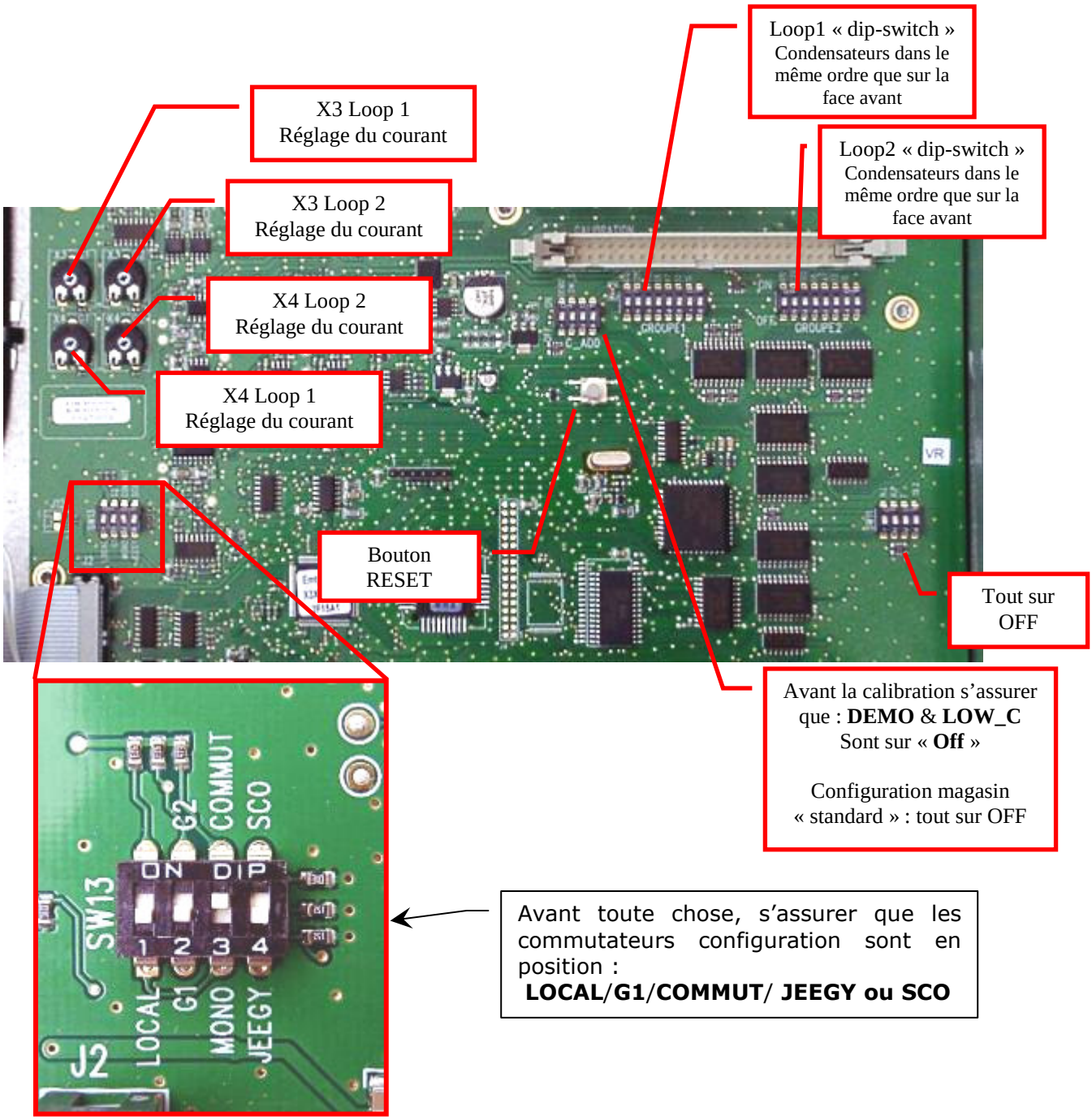
Multimode transmitter 37020: Setting points



Calibration:

- **C_ADD** everything at "**Off**" ("**DEMO**" & "**LOW_C**")
- calibrate normally (as for 37120) on both loops
- if the smaller matching value is < 150nF, place **LOW_C** at "**On**" and then restart the calibration.
- End the Calibration (current adjustment, etc., etc., as for 37120)
- For demonstrations (loop area < 10m²) set "**DEMO**" to "**On**" , as well as all Capacitors (**470nF**, **220nF**, etc.) to "**On**" and then adjust the currents

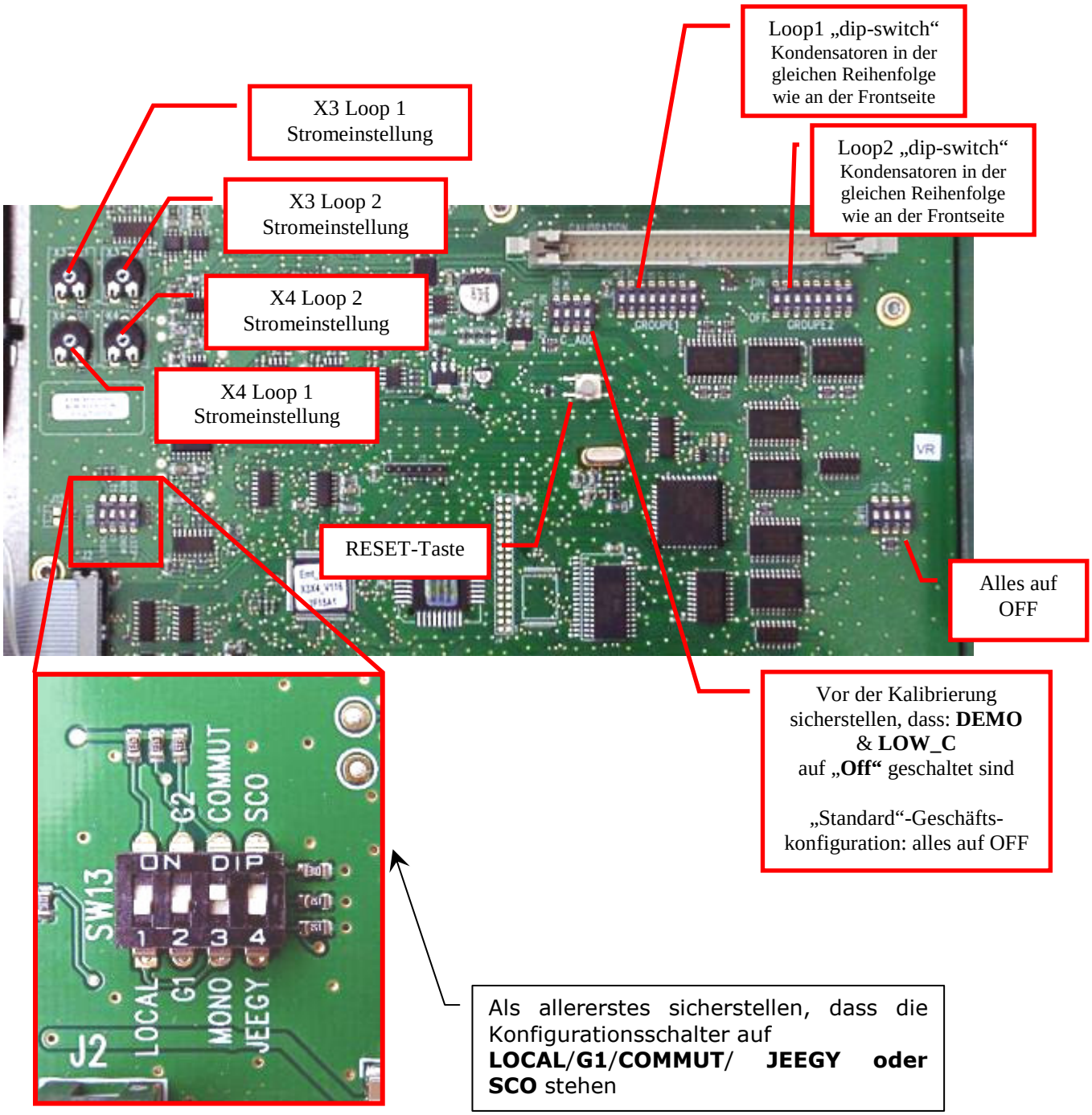
Emetteur 37020 multimode : Points de réglage



Calibration :

- **C_ADD** tout sur « **Off** » (« **DEMO** » & « **LOW_C** »)
- calibrer normalement (idem 37120) sur les deux boucles
- si la plus petite valeur d'accord est inférieure à 150nF mettre **LOW_C** sur « **On** » puis recommencer la calibration.
- Terminer la Calibration (ajustement des courants, etc., etc., idem 37120)
- Pour les démonstrations (surface de boucle inférieure a 10m²) mettre « **DEMO** » sur « **On** » ainsi que tous les condensateurs (**470nF**, **220nF**…) sur « **On** » puis ajuster les courants

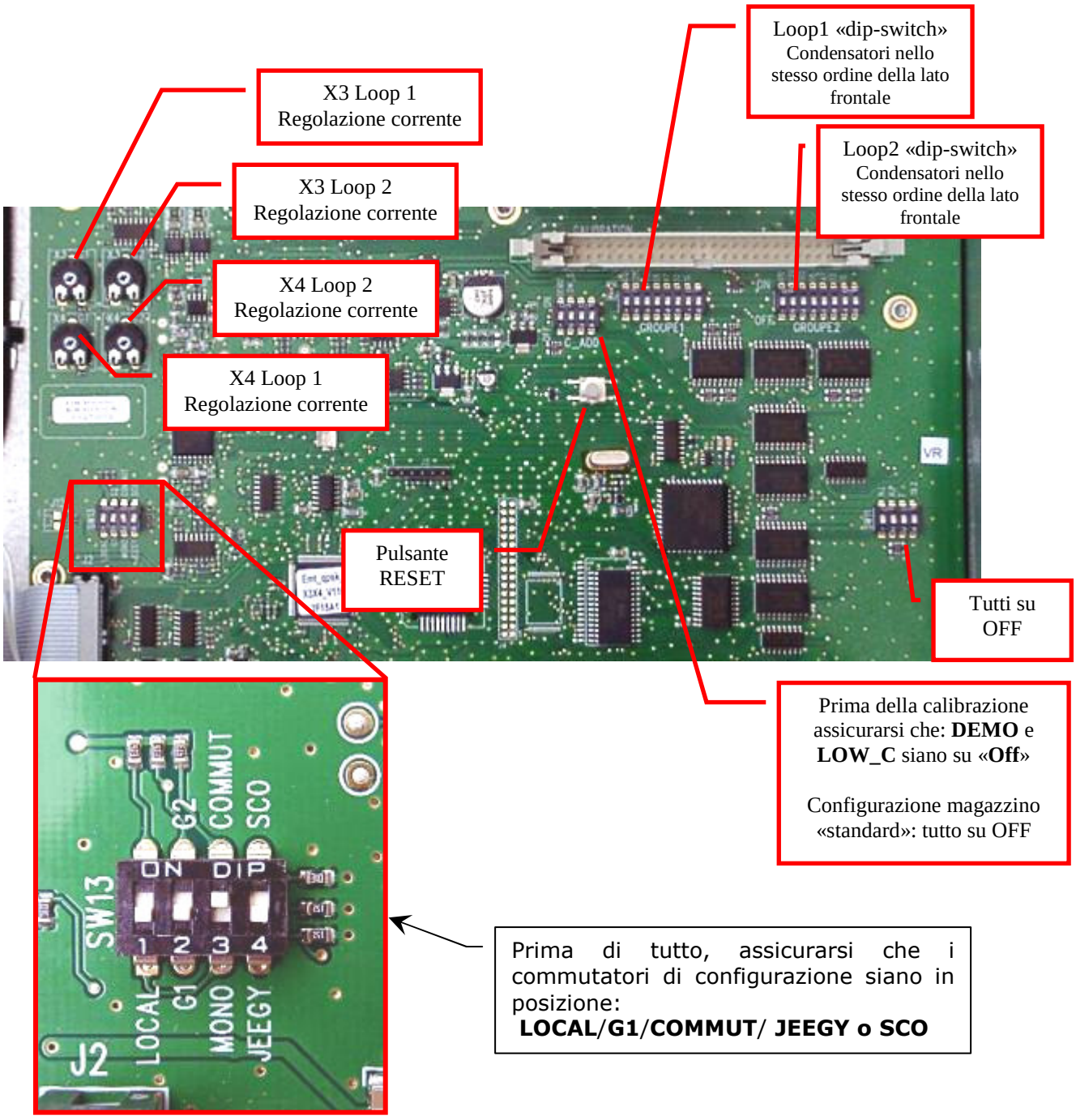
Multimode Sender 37020: Einstellungspunkte



Kalibrierung :

- **C_ADD** alle auf „**Off“** („**DEMO“** & „**LOW_C“**)
- Normal (idem 37120) an den beiden Stromkreisen kalibrieren
- Wenn der kleinste Übereinstimmungswert kleiner als 150nF ist, **LOW_C** auf „**On“** stellen und die Kalibrierung neu beginnen.
- Die Kalibrierung beenden (Einstellung der Ströme usw., usw., idem 37120)
- Für die Demonstrationen (Fläche des Stromkreises kleiner 10m²) „**DEMO“** auf **„On“** sowie alle Kondensatoren (**470nF**, **220nF**…) auf „**On“** schalten und dann die Ströme einstellen.

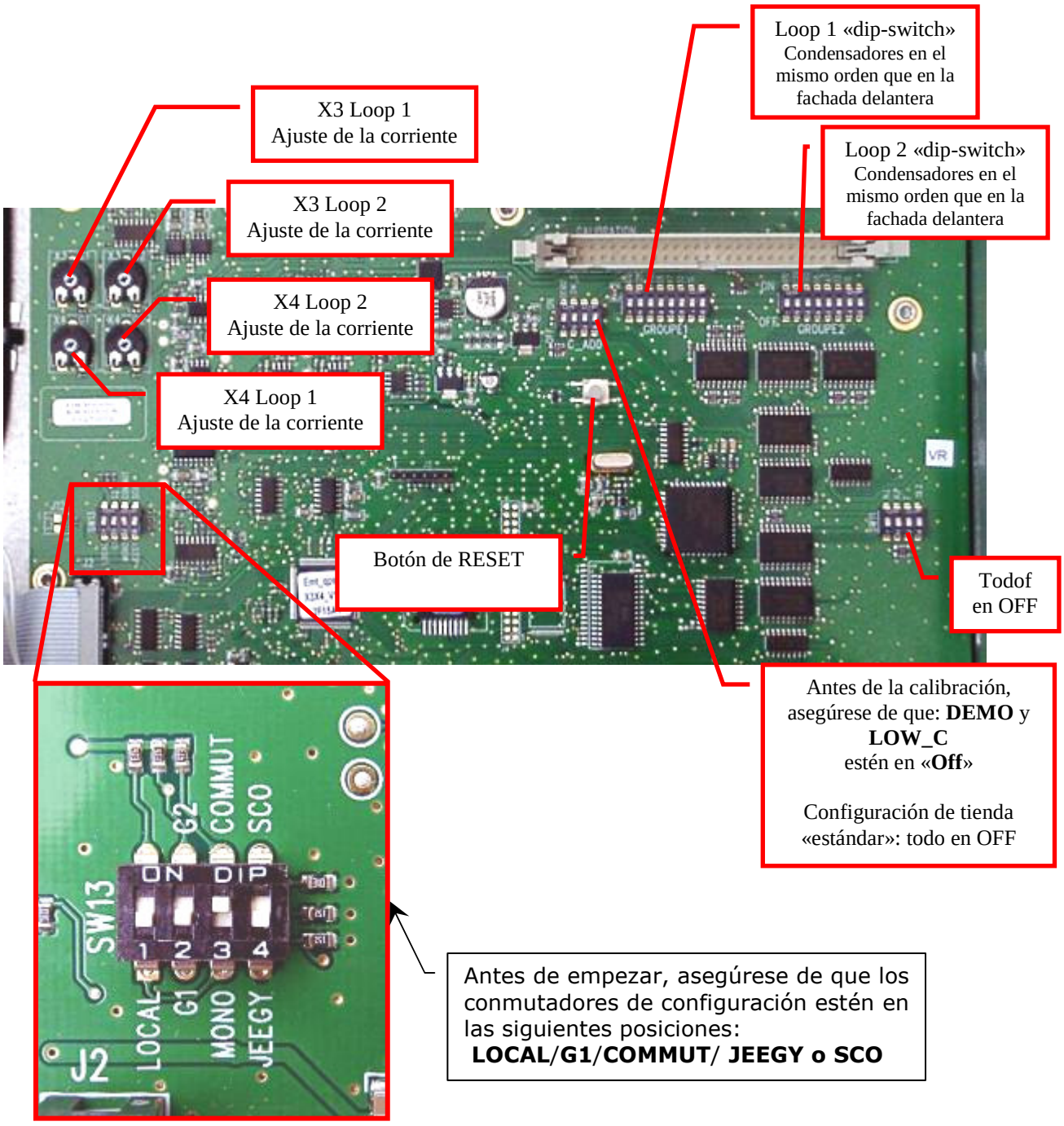
Trasmettitore 37020 multifunzione: punti di regolazione



Calibrazione:

- **C_ADD** tutto su «**Off**» («**DEMO**» e «**LOW_C**»)
- calibrare normalmente (idem 37120) sui due circuiti chiusi
- se il valore minimo di sintonizzazione è inferiore a 150nF, mettere **LOW_C** su «**On**», poi ricominciare la calibrazione.
- Terminare la calibrazione (regolazione della corrente, ecc., idem 37120)
- Per le dimostrazioni (superficie del circuito chiuso inferiore a 10 m^2) mettere «**DEMO**» su «**On**» e tutti i condensatori (**470nF**, **220nF**…) su «**On**», poi regolare la corrente

Transmisor 37020 multimodo: Puntos de ajuste



Calibración:

- **C_ADD** todo en «**Off**» («**DEMO**» y «**LOW_C**»)
- Calibrar normalmente (ídem 37120) en los dos bucles
- Si el valor de acuerdo más pequeño es inferior a 150nF, poner **LOW_C** en «**On**» y luego volver a empezar con la calibración.
- Terminar la calibración (ajuste de las corrientes, etc., etc., ídem 37120)
- Para las demostraciones (superficie de bucle inferior a 10m²), poner «**DEMO**» en «**On**», así como todos los condensadores (**470nF**, **220nF**…) en «**On**», y luego ajustar las corrientes.

FCC 15.21

Revised as of April 30, 2012

§ 15.21 Information to user.

The users manual or instruction manual for an intentional or unintentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. In cases where the manual is provided only in a form ther than paper, such as on a computer disk or over the Internet, the information required by this section may be included in the manual in that alternative form, provided the user can reasonably be expected to have the capability to access information in that form.

[54 FR 17714 , Apr. 25, 1989, as amended at 68 FR 68545 , Dec. 9, 2003]

RECORD OF CHANGES

Documents	Revision index	Date of modification	Author(s)
Document original issue			CAUMONT
Entire document	1.0	15th Sept 2011	CAUMONT / LEGRAS / SCHLOSSER
"DEMO" mode	1.1	Nov. 2011	CAUMONT / LEGRAS / SCHLOSSER
"SCO" management system	1.2	Jan. 2012	CAUMONT / LEGRAS / SCHLOSSER
STARTUP user guide	1.25	14th Feb. 2012	CAUMONT / LEGRAS / SCHLOSSER
Include Startup User Guide (GB), (F), (D), (I), (E)	1,3	21th Feb. 2012	CAUMONT / LEGRAS / SCHLOSSER
Include Fcc Information to user	1,36	May 2, 2012	LEGRAS