InnovAction

"Tecnology meets Creativity"

# POP 30

# FM Transmitter

## 30W

*Cost-Effective, High Performances & Fully Customizable*

# User Manual (V. 2.1.b)

**The information contained in this manual refers to InnovAction POP30 FM Exciter**

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Member of CISQ Federation RINA ISO 14001 Certified Environmental System

# Contents

# Section*One* ❶

## Introduction & General Information

### *Preface*

Congratulations for your purchase of our Exciter.

Our goal is to bring you the most accurately crafted equipment to exceed current specifications and world-class quality standards. Our products are designed to withstand severe environment conditions.

Your new **InnovAction** Exciter is manufactured using the most advanced production processes available today and the highest quality materials to ensure years of trouble-free service.
**BEFORE USING THE EXCITER, PLEASE READ MANUAL CAREFULLY. PARTICULAR ATTENTION MUST BE PAID TO GROUND CONNECTIONS AND OTHER MAINS SECURITY RULES.**

Thank you

### *About InnovAction*

**InnovAction** is devoted to the development and refinement of the newest technologies which can satisfy the ever-increasing needs of the Broadcast industry.

Our innovative engineering staff has designed our new Exciter after a ten-year experience in the research and development of equipment.

We are located in Southern Italy where an exceptionally mild climate and a long-established culinary tradition offer a high quality of life. We are at the approximate latitude of Los Angeles, CA. but right in the middle of the Mediterranean Sea.

The high level of technology in the Broadcast industry has placed Italy among the most advanced countries in the world and is no second to Italy's claim to fame for fashion or food. No coincidence that our offices are found in Calabria, the historical region of "Magna Grecia", where Pythagora founded his philosophical school of mathematics. Do you recall Pythagora, father of modern mathematics and his theorem: $a^2$(cathetus) + $b^2$(cathetus) = $c^2$(Hypotenuse)? **Or his most famous line: "all things are numbers"… Nothing is casual!**

Ancient traditions, crystal-clear sea waters and lush tree-covered hills here meet with the sophisticated technologies of the Arcavacata University, located 50 miles from **InnovAction** premises. This privileged position allows us to choose fresh resources from recently qualified engineers with an eye for state-of-the art.

Equipment developed and manufactured by **InnovAction** has undergone extensive computer simulation, followed a rigorous R&D method and often results from cooperation with Research Institutes or Universities.

**InnovAction is committed to meet your broadcast requirements by providing the most advanced, reliable and cost-effective equipment available in the market today**

**Welcome INTO an idea!**

## ***About This** Manual*

A step-by step guide to simple installation and setup of POP30 Exciter, the manual contains the following sections:

1. **Introduction & General Information:** current section
2. **General Description:** key features, technical specifications and mechanical layouts
3. **Installation & Use:** how to install, set up and test Exciter
4. **Software Description:** how to read and set main parameters
5. **Software Updating:** how to update last version of software
6. **Service & Maintenance:** repair and maintenance, outlines, component location, parts lists and other technical information

***Important Note On Dangerous Voltage***

# Hazardous Voltage


**WARNING:**
**Voltage within equipment is high enough to endanger life!**

**External or internal covers are NOT to be removed, except by authorized personnel**

***Important Note - Serial Number***

Serial Number can be read directly on front panel display. Press the encoder knob and turn it to select the slide showing **"ABOUT"**. This section contains serial number, firmware version and other general and useful information.

*Some product versions might show serial number on rear panel label*

***Disclaimer***

**If you find any inaccuracies, please kindly inform us**

**InnovAction** is not liable for any typing or technical errors and it reserves the right to make changes to product and/or manuals without prior notice

## *Warranty*

**InnovAction** product is guaranteed against defects in materials and workmanship for a period of TWO YEARS from date of shipment. The standard warranty may be extended beyond the two-year period. A record of warranty extensions is listed on sales orders of each product purchased. Standard warranty conditions apply to extended warranty period.

During warranty **InnovAction Srl** will repair or replace product proved to be faulty with previous authorization. The warranty validation only applies if product is returned to **InnovAction Srl** after release of Return of Merchandise Authorization and provided that maintenance procedures have been followed as listed in the manual. Warranty does not cover repairs resulting from product carelessness, incorrect or improper use.
NO OTHER WARRANTY APPLY

**INNOVACTION IS NOT LIABLE FOR DAMAGES RESULTING FROM PRODUCT MISUSE INNOVACTION DOES NOT GUARANTEE ERROR-FREE EQUIPMENT, UNINTERRUPTED OPERATION, FIRMWARE OR FIRMWARE BUGS**.

If your equipment needs repair call **InnovAction Srl** promptly and ask for customer service department. It is important to contact **InnovAction** immediately since many problems may be quickly solved over the phone or by e-mail. Please have your Serial Number ready before you contact **InnovAction** and clearly explain the nature of your problem. Once we acknowledge your equipment requires service we will send you an electronic form to be filled in with your name, address, phone number, e-mail and containing an accurate description of problem or failure. **InnovAction** will issue an **RMA** number.
Send the unit with prepaid shipment to indicated maintenance lab and place equipment in the original box or a suitable container to protect it from damage. **InnovAction Srl** will not be held responsible for damage incurred during shipment. Please ensure RMA number is clearly marked onto shipping container. Our standard terms are to fix or repair equipment within **five working days**. If equipment requires parts ordering or more than five working days, **InnovAction**'s service technician will contact you. We also provide service for equipment if warranty has expired. Follow the same instructions described above, but tick in the

☑ "not in warranty" box. Warranty is valid on condition that proper maintenance procedures have been complied with, as listed in the manual. Damage caused by product misuse is NOT covered by warranty.

## *Other General Information*


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**Manual Version:** POP30-2G -2V1b
**Firmware Version:**
**Product Definition:** POP-30
**Edition Date:**
**File Name:** POP30-2G -2V1b-Eng.doc

**CHK____**

***Basic CPR technique***

## Basic CPR (Cardiopulmonary resuscitation) technique

### For adults


1: Call your local emergency number


2: Tilt head, lift chin, check breathing


3: Pinch nose shut and give two breaths


4: Check pulse


5: If there is no pulse, position hands in the center of chest


6: Place one hand over other and push down two inches on the chest 15 times

7: If there is no pulse, continue with two breaths and 15 pumps for one minute and recheck pulse – if no pulse – continue until arrives

## ***Manual Revision Record***

This record page is intended for recording revisions to your **User & Service Manual** for POP30-2G Exciter**.** Revisions can only be published by **InnovAction Srl** or its authorized representatives. We recommend that only authorized or appointed personnel make changes, or insert revised pages and ensure that obsolete pages are withdrawn and, either disposed of immediately, or marked as superseded and placed in a superseded document file.

| Rev. No | Date Entered | Reason | Signature Entering Change |
|---|---|---|---|
| **1** | | First Edition | |
| **2** | 07/2010 | Change Display Front Panel | 0110 fr |
| **2.1** | 11/2010 | Changed the back panel. Interlock on/off, Preemphasis an Audio Impedance settable from the outside | 0210fr |
| **2.1.a** | 01/2011 | Back panel. New graphics | 0111fr |
| **2.1.b** | 07/2011 | Formatted text according to new rules | 0211fr |
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## ***Symbols***

This section contains a list of most commonly used symbols.

It is important to become familiar with symbols to understand the information contained in the manual. Additionally, some graphical signs are used to draw further or extra attention to specific operations.

This manual is divided into two main sections: use of equipment and maintenance. The two sections are separated by one blue page. The operator who has experience in using the equipment must not try to perform any maintenance operation.

Any incorrect operation may cause damage to electronics and be also potentially dangerous for operator's safety.

This symbol means: "Notice"

This symbol means: "Read carefully before operating"

This symbol means: "Please contact Manufacturer"


This symbol means: "Information relevant to the Software"

This symbol means: "Maintenance Procedure"

This symbol means: "DANGER!"


This symbol means: "Danger - High Voltage"

This symbol means: "European Union Accepted"

# Section *Two* ❷

## General Description

### ***KEY FEATURES***

Equipment is designed using the latest technologies and techniques available for Hardware and Software and includes the following key features.

- High Performance At Low Cost
- Nominal RF Power 30w
- Very Low Signal Noise Typ. 80 Db
- High Stereo Performance Typ. 60 Db
- Extremely Low Distortion: THD, IMD & TIM Typ. 0,05%
- Completely Broadband
- High Spectral Purity > -100 dbc Spurious, > - 70 dbc Harmonics
- Easy to handle: self-explaining monitoring and setting of all important parameters
- Remote control for telemetry dB9 connectors available on rear panel
- Modular construction specifically designed to minimize spare parts set
- Built-in RF true wattmeter
- Output provided: RF, RF monitor
- AC mains 90-260VAC extend range
- ETSI - CCIR & FCC Compliant
- Very Compact Cabinet 1 Unit Rack 19”
- All functions controlled by a knob encoder and a two-row, sixteen character LCD display. Intuitive parameters configuration
- Interlock, Reflected PWR, Forward PWR

### ***OPTIONS***

- RDS/RBDS Coder Programmable whit PC
- Stereo Coder
- FCC LPFM Code Station
- OIRT and JPN Version

## TECHNICAL SPECIFICATIONS

| GENERAL | |
|---|---|
| **Power Output** | 30W |
| **RF Output Impedance** | 50Ω |
| **RF Output Connector** | "N" Type |
| **Monitor RF** | -54 dBc - BNC connector |
| **Frequency Range** | 87.5 – 108 MHz |
| **VSWR** | 1.5:1 Maximum |
| **Frequency control** | Synthesizer µprocessor controlled |
| **Lock-in time** | Typically 4 secs |
| **Modulation mode** | Mono, Stereo, Multiplex, AUX |
| **Off-lock attenuation** | > -80 dB |
| **RF harmonics** | Exceeds ETSI, EBU/CCIR/FCC requirements |
| **RF spurious** | Exceeds ETSI, EBU/CCIR/FCC requirements |
| **Pre-emphasis** | Flat/50/75 µs selectable from back panel |

| MONAURAL OPERATION | |
|---|---|
| **Audio frequency response** | ±0.15 dB 20 Hz to 15 kHz (+0/-2%) |
| **Audio input Level** | -3 to +9 dBm |
| **Audio input impedance** | 600 ohm balanced, 10 KOhm unbalanced |
| **Input Connector** | XLR female ([6] fig. 2) |
| **Audio frequency response** | ±0.1 dB, 30 Hz to 15 KHz |
| **Total Harmonic distortion + noise** | 0.05% @ 400 Hz |
| **Intermodulation Distortion** | 0.05%, 1 KHz/1.3 KHz, 1:1 ratio |
| **Transient Intermodulation Distortion** | 0,05%, 2.96 KHz square wave and 14 KHz sine wave. |
| **FM S/N Ratio** | -82 dB RMS detector, -80 dB below ±75 KHz deviation, 50 µs de-emphasis, weighted. |
| **Distortion** | 0.05%, 2.96 KHz squere wave and 14 KHz sine wave |
| **Pilot frequency** | 19 KHz ± 1 Hz |
| **Phase Pilot** | ± 2° adjustable |
| **Output Pilot** | 1 Vpp., BNC female |
| **Audio filter Attenuation** | ≥ -45 dB @ 19 KHz, > -40 dB 20 KHz to 100 KHz. |
| **Modes** | Stereo, Mono L+R, Mono L, Mono R. |

| MPX OPERATION (External coder) | |
|---|---|
| **Input Connector** | BNC female ([5] fig. 2) |
| **Composite input impedance** | 1,2 KOhm unbalanced |
| **Composite input level** | +6 to +12 dBm |
| **Composite amplitude response** | ±0.2 dB 30 Hz to 100 kHz |
| **THD+N on encoded channels** | 30 Hz to 15 kHz < 0.05% @ 400 Hz |
| **IMD** | Measured with a 1 KHz and 1.3 KHz tones; 1:1ratio at FM 75 kHz D2<-75 dB D3<-80 dB Typ. D2<-80dB D3< -85 dB |
| **TIM (DIM30)** | Measured with a 2.96 kHz square wave and a 14 kHz sine wave |
| **FM S/N Ratio** | -83 dB RMS detector, -80 dB below ±75 KHz dev.50 µs de-emphasis, weighted. |

## STEREO OPERATION (Optional)

| STEREO OPERATION | |
|---|---|
| **Audio frequency response** | ±0.25 dB da 30 Hz to 15 kHz |
| **Audio input Level** | -3 to +9 dBm |
| **Audio input impedance** | 600 ohm balanced, 10 Kohm unbalanced |
| **Input Connector** | Two XLR female L & R ([9]-[10] fig. 2) |
| **Stereo Separation** | 30÷80 Hz ≥ -50 dB, 80Hz÷15 KHz ≥ -60 dB (Typ. 65 dB).) |
| **Total Harmonic distortion + noise** | 0.05% @ 400 Hz |
| **Intermodulation Distortion** | 0.05%, 1 KHz/1.3 KHz, 1:1 ratio |
| **Transient Intermodulation Distortion** | 0,05%, 2.96 KHz square wave and 14 KHz sine wave. |
| **FM S/N Ratio** | -75 dB RMS detector, -71 dB below ±75 KHz deviation, 50 µs deephasis, weighted. |
| **Stereo Separation** | 30÷80 Hz ≥ -50 dB, 80Hz÷15 KHz ≥ -60 dB (Typ. 65 dB). |
| **Pilot frequency** | 19 KHz ± 1 Hz |
| **Phase Pilot** | ± 2° adjustable |
| **Output Pilot** | 1 Vpp., BNC female |
| **Audio filter Attenuation** | ≥ -45 dB @ 19 KHz, > -40 dB 20 KHz to 100 KHz. |
| **Modes** | Stereo |

| ELECTRICAL | |
|---|---|
| **1. AC Input power** | 90 - 260 VAC ;50/60 HZ Single phase |
| **2. AC Power consumption** | 70 VA @ 30W |
| **3. Power Factor** | Cos Φ> 0.92 |
| **4. Cooling** | Forced air |

| ENVIRONMENTAL | |
|---|---|
| **1. Operating temperature** | -10° C to + 50° C |
| **2. Guaranteed performance temperature** | 0° C to + 40° C |
| **3. Max operating altitude** | 3,000 mt. |
| **4. Relative humidity range** | 0 to 90% |

| PHYSICAL DIMENSION | |
|---|---|
| **1. Mounting** | Standard 19” chassis 1 U Rack |
| **2. Size** | 485 mm (W) x 405 mm (D) x 44 mm (H) |
| **3. Weight** | ~ 4.0 Kg |

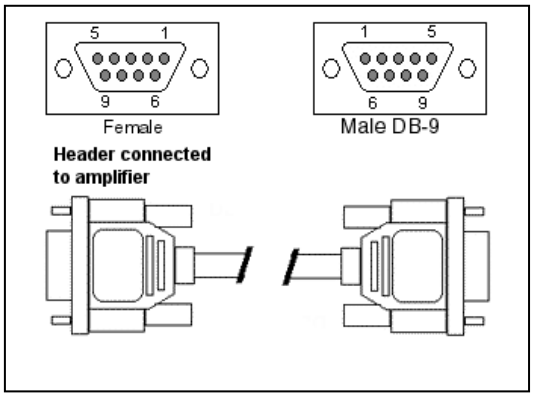
## OPTIONS

| OPTIONS | CODE |
|---|---|
| **1. RDS/RBDS Coder Programmable with PC** | **SDZ00100** |
| **2. Stereo Coder** | **SDI03100** |
| **3. FCC LPFM Code Station** | |
| **4. OIRT and JPN Version** | |

## AUXILIARY CONNECTIONS

| AUXILIARY TELEMETRY DB9 (REAR PANEL) | | | | | |
|---|---|---|---|---|---|
| **Pin** | **Description** | **Acronyms** | **Type** | **I/O** | **Value @ / Impedance** |
| **1** | GROUND – | **GND** | Gnd | - | |
| **2** | Current reading – reads power Amp current | **IPA** | Analog value | ➡ | 3.0V/3A |
| **3** | Voltage reading – reads voltage supplied to power Amp | **VPA** | Analog value | ➡ | 3.0V/30V |
| **4** | Interlock Input – if not continuously connected to or open from ground depending on selection: N.O or N.C causes 'Wait' | **Interlock In** | Control (TC) | ⬅ | Interlock CMD: L/H= Inhibit |
| **5** | Interlock Out | **Interlock Out** | Signal (TS) | ➡ | GND= Interlocked |
| **6** | TP | | | | |
| **7** | 12V0 | **12 Volt** | Power | ➡ | |
| **8** | GROUND – | **GND** | Gnd | - | |
| **9** | Forward Output Power – reads Forward RF Output power | **OUT-FWD-MEAS** | Analog value | ➡ | 3.0V/30W |
| Symbols: ➡ Output ⬅ Input | | | | | |
| **Input Connector** | | DB9 female ([7] fig. 2) | | | |

Pinout DB9 Connector



***MECHANICAL LAYOUT***

## POP30 2G Front View

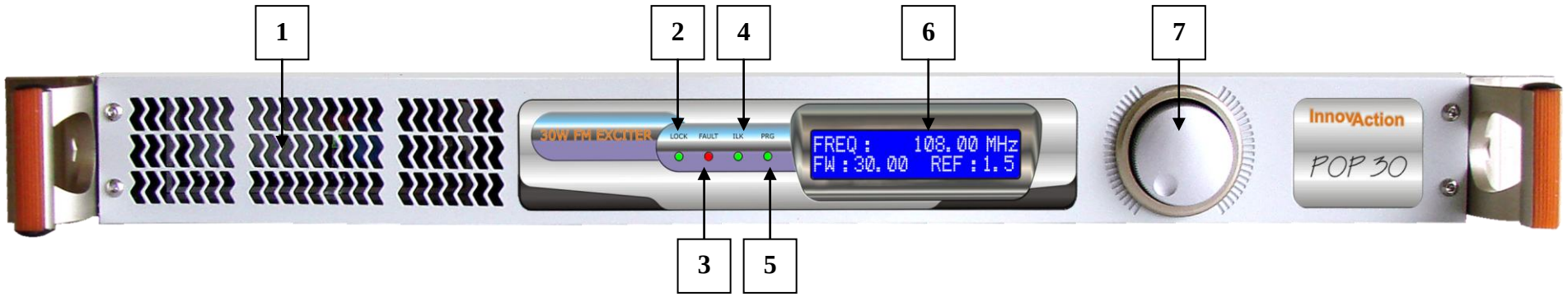



Fig 1

| | | | |
|---|---|---|---|
| **1** | **Air Grid Input Inlet** | **5** | **Prg Led** |
| **2** | **Lock Led** | **6** | **Two- row, sixteen-character LCD Display** |
| **3** | **Fault Led** | **7** | **Rotary Encoder** |
| **4** | **InterLock Led** | | |

# POP30 2G Rear View

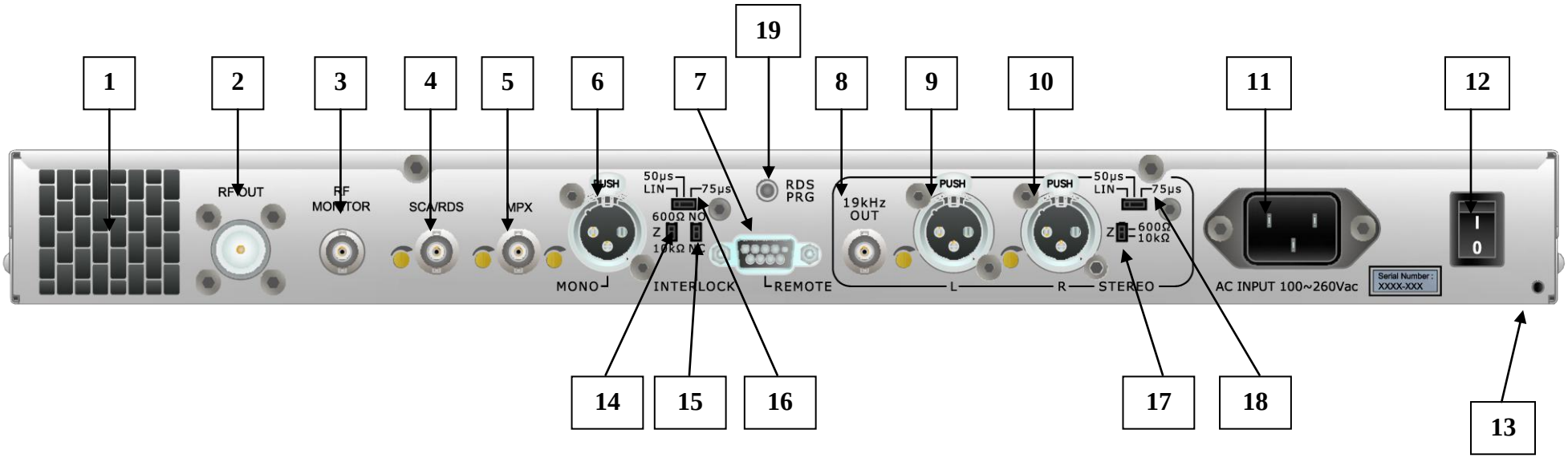



Fig.2

**1 - Air Grid Input Outlet**
**2 - N Female Connector - RF Output**
**3 - BNC Female Connector – RF Monitor**
**4 - BNC Female Connector - AUX**
**5 - BNC Female Connector – MPX**
**6 - XLR Female Connector – Mono**
**7 - DB9 Connector - Remote control**
**8 - BNC Female Connector – 19 KHz Out**
**9 - XLR Female Connector – L Channel**
**10 - XLR Female Connector – R Channel**
**11 - VDE 3p 10A Mains Socket**
**12 - ON/OFF Switch**
**13 - Heart Connection**
**14 - Audio Mono impedance**
**15 - Interlock**
**16 - Mono Preemphasis**
**17 - Audio Stereo impedenze**
**18 - Stereo Preemphasis**
**19 - RDS Program (Optional)**

# Section *Three* ❸

## INSTALLATION & USE

### ***DELIVERY***

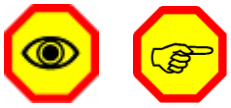
Please carefully check InnovAction delivery box for any punctures or other evidence of damage. If any, please notify InnovAction as soon as possible.

When unit is delivered as STAND ALONE equipment the following items are included:

- Exciter
- Mains cable - in some countries cable is supplied with one connector only. Customers must use matching connector to adapt to local standard mains socket

The above content could not be included in equipment delivered to Customers already integrated in a system.

### ***OPERATING RECOMMENDATIONS***



**To prevent failure please strictly follow** these **IMPORTANT** recommendations

Ensure that both front and rear part of equipment are properly ventilated. To prevent high temperature inside equipment you must provide adequate ventilation to rack cabinet where equipment is installed (temperature should not exceed 45 °C degrees)

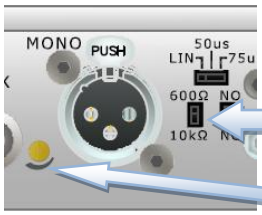
**PLEASE NOTE**: **Exciter cannot** operate without top cover
The air-cooling system is designed to work in a closed box. Serious OVERHEATING will occur if Exciter operates without top cover

## ***PRELIMINARY SETTINGS***

All manual setting are on the rear panel

### MONO CHANNEL

**Input Impedance Setting and ADJ input Level**



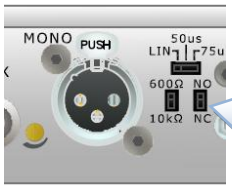

Set switch to on 600 or 10K to get the desired input impedance

Trimmer for ADJ AF Input

**Preemphasis Mono Channel Setting**


Set switch to on Lin-50uS or 75uS to get the desired Preemphasis

**INTERLOCK SETTING**

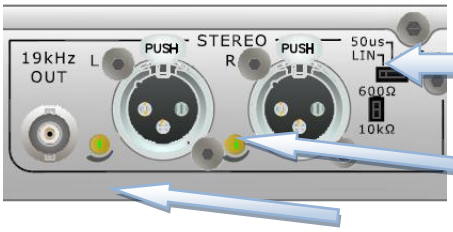



Set switch to N.O or N.C
Gli apparati di default vengono settati NO

### STEREO CHANNEL OPTIONAL

**Input Impedance**

Set switch to on 600 or 10K to get the desired input impedance




Trimmer for ADJ AF Input.Left & Right channel.

**Preemphasis Stereo Channel Setting**


Set switch to on Lin-50uS or 75uS to get the desired Preemphasis

## ***DESCRIPTION OF THE ENCODER KNOB***

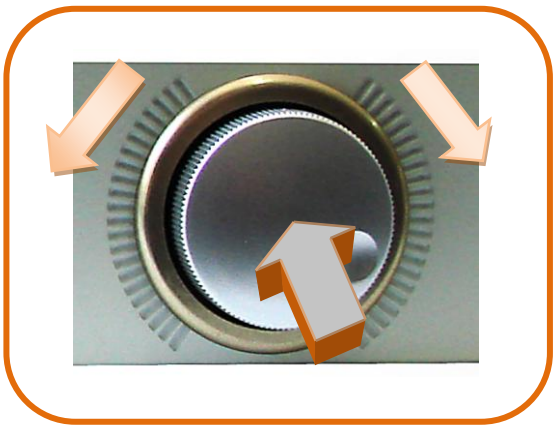
The **encoder knob** located on front panel is the main access to control Exciter in conjunction with display readings. It rotates clockwise or anticlockwise and can be pushed. The overall procedure to browse through the different menus is very intuitive.

The LCD display shows **two rows with sixteen characters** and a number of different menus.

In all cases when turning the encoder knob and the indication "**Push to Program**" appears on display it is possible to modify parameters. This simple message "Push to Program" is the basic way to select and store.

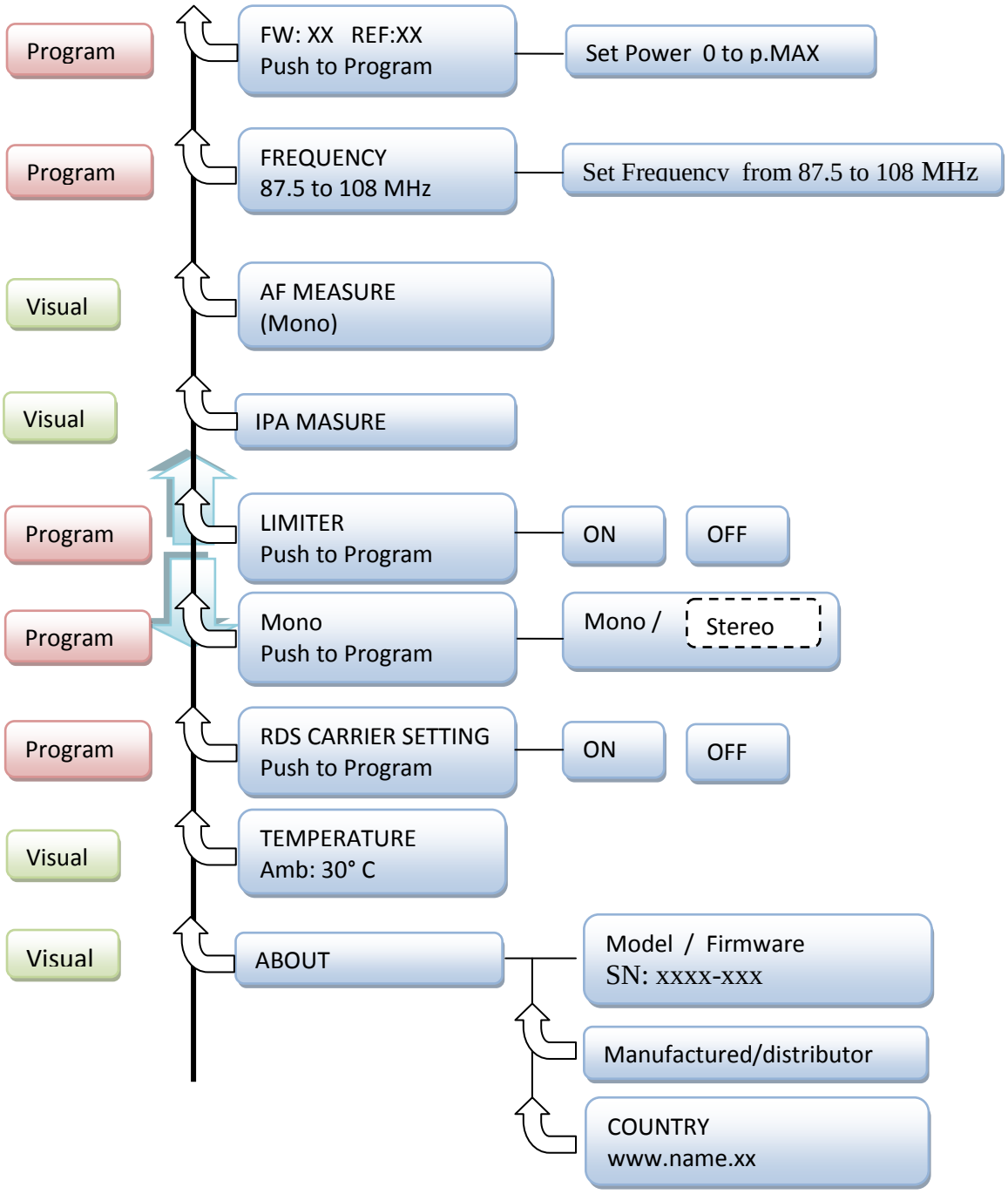
A description of all available menus displayed on the LCD is reported in the following sections.
It is important to remember that:

**By rotating the knob:** you scroll the sub-menus, increase or decrease a given value
**By pushing/pressing:** you select parameters to modify; you store values and confirm selection

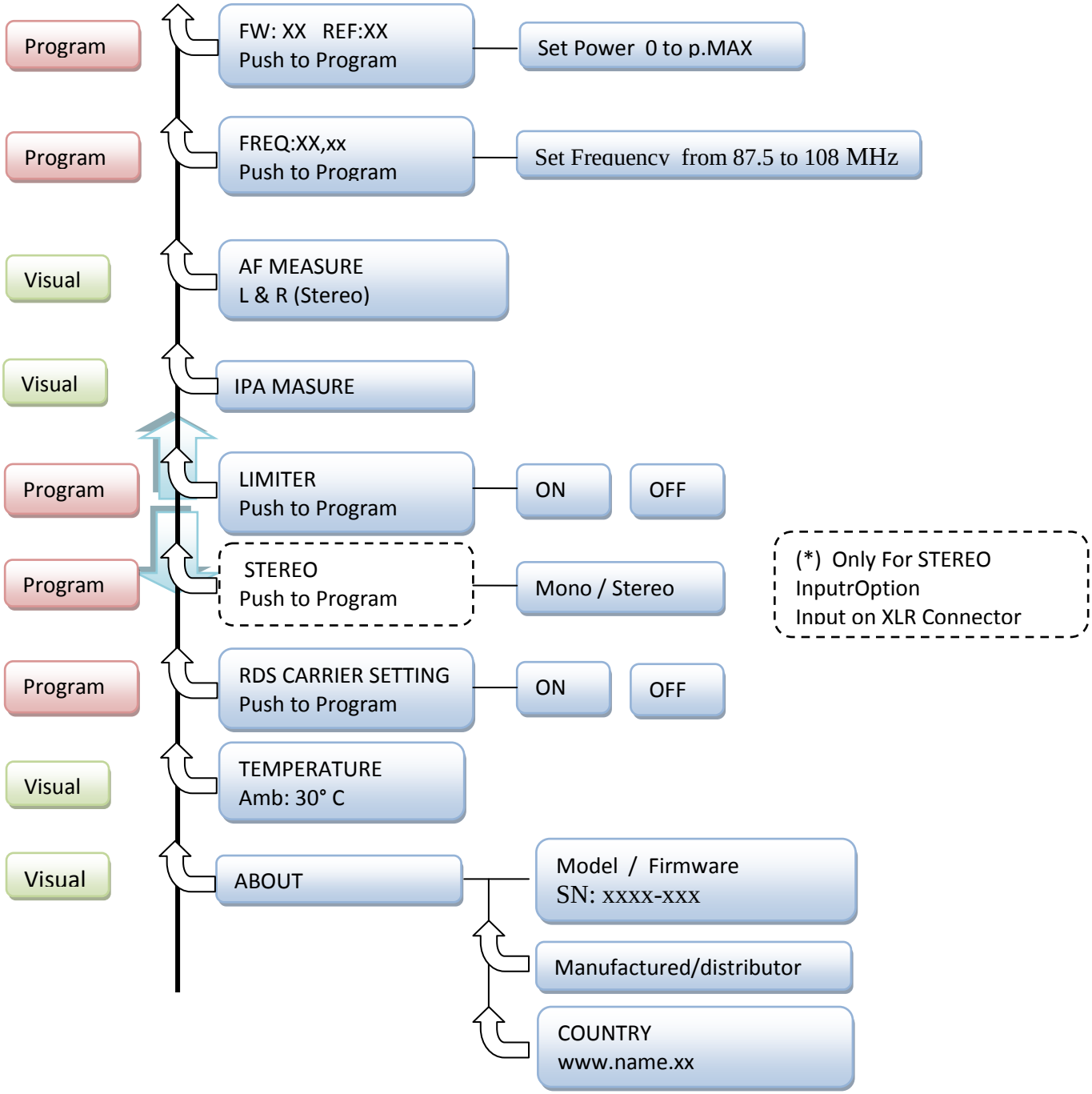


## ***Flow chart Encoder Knob POP 2G***

| Software release | V. xxx | date |
|---|---|---|



## ***STERO Flow chart Encoder Knob POP 2G***

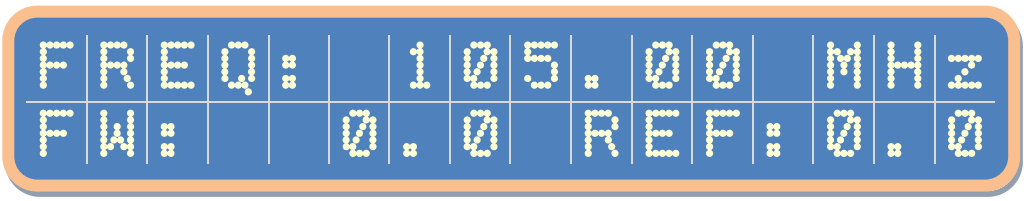


# Section *Four* ❹

## SOFTWARE DESCRIPTION

### *SWITCH ON*

Connect the POP30 Exciter to a min 50W dummy load and switch ON by pressing switch located on the rear panel or press the rack switch if Exciter is integrated in a system. The first slide on display reads




### *SOFTWARE DESCRIPTION*

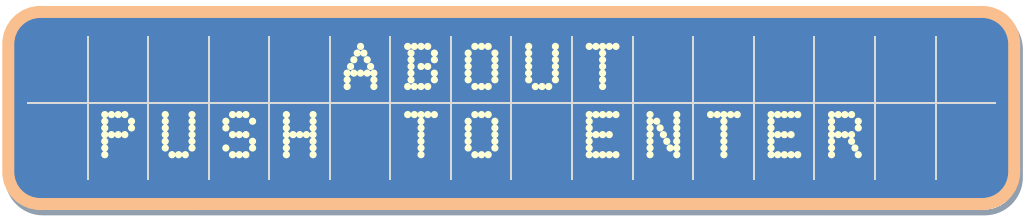
Software is designed to allow readings / settings of several important parameters of the Exciter. It is possible to visualize parameters and other stored data without making changes while Exciter is operating normally. To ensure optimum reading the LCD is placed in the central section of the front panel, it contains two rows holding sixteen characters and visualizes the information listed below by simply rotating the encoder.

### *PARAMETER READING SLIDES*

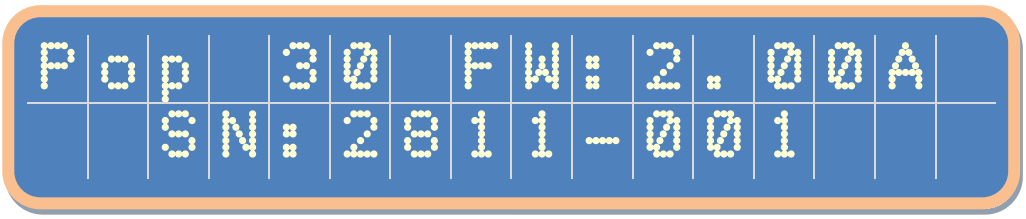
The following slides show the **readings** of the Main Menu:

#### "ABOUT" SLIDES

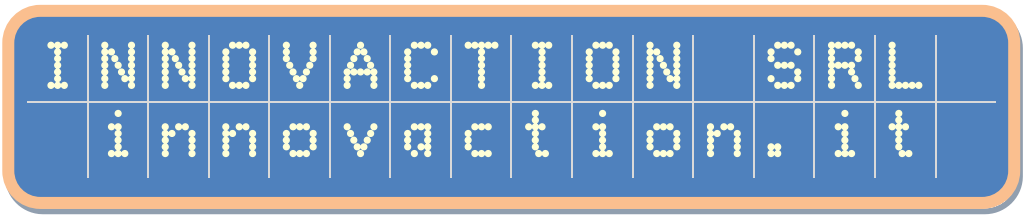
Turn encoder knob to find the ABOUT menu which contains various slides with general information on Exciter's Model and Serial number, Address and Web site of Manufacturer / Distributor etc.etc.




Scrolling down shows Model

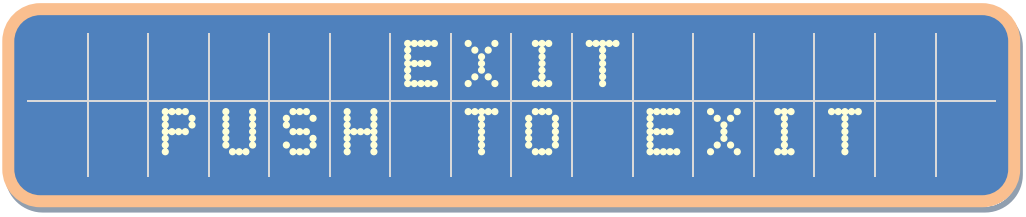


Address and Web site of Manufacturer / Distributor

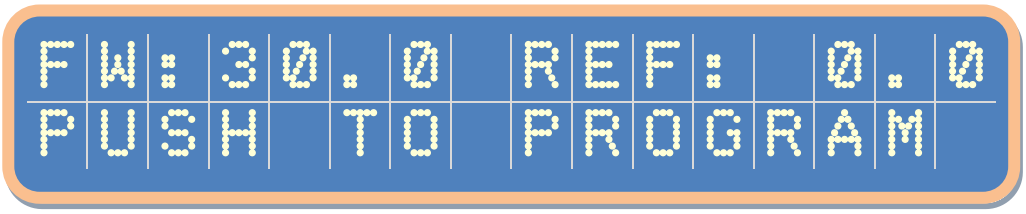



Telephone Number

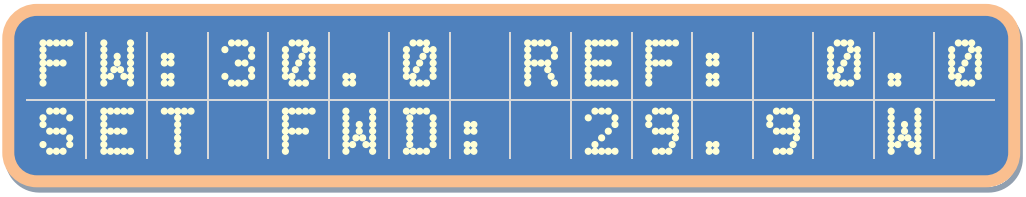

Return to main Menu



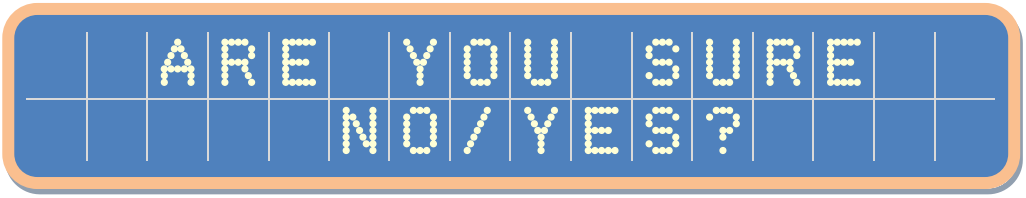
***POWER OUTPUT***



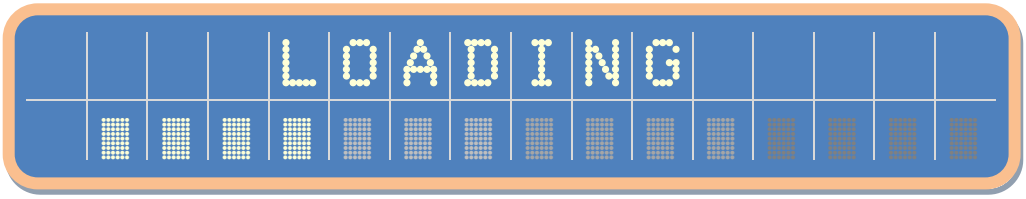

By pushing the Encoder knob the following slide appears:




Turn the encoder to select an appropriate Power level.
Confirm the new value by pushing the knob. The image below will appear :



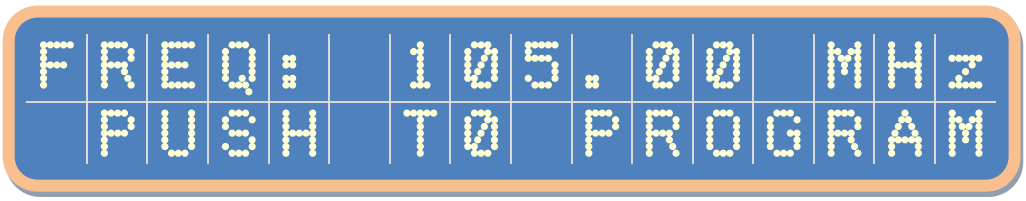

Confirm the choice by pressing YES. The display will show the following slide:



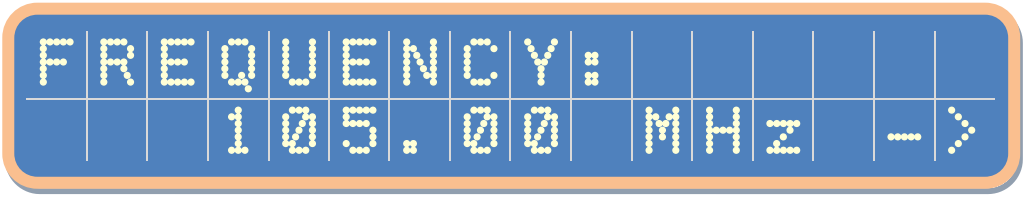

The micro is now storing new data in the memory and has activated the new Power Level.

## ***FREQUENCY SETTING***

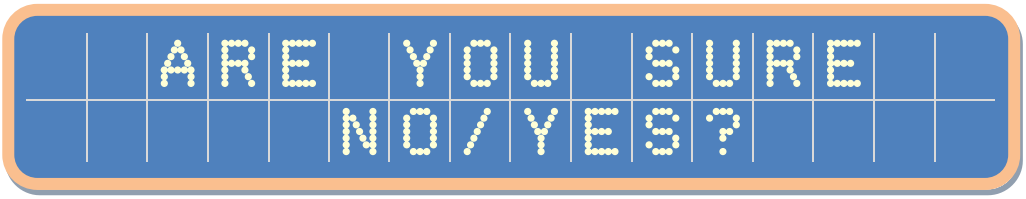
Rotate encoder knob to find slide to program frequency. Push encoder knob as indicated.




Slide below shows current frequency at 105.00 Mhz. Value can be modified when cursor is moved under the relevant character. Turn encoder knob right or left to increase or decrease value.




The range limits are: 87.50 MHz to 108 MHz. The default step is 10 kHz, but upon request, it is possible to choose different step values (i.e. 25 or 50 kHz). Confirm new value and exit routine by pushing the encoder knob.



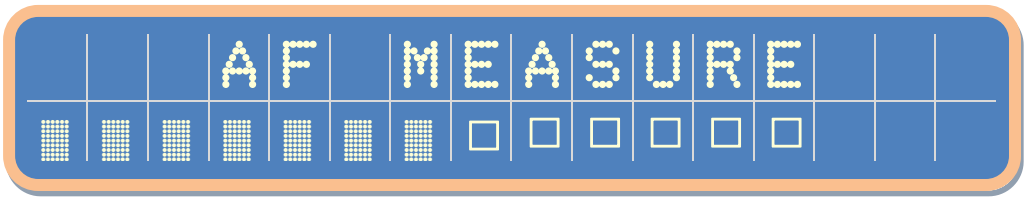

Cursor highlights **NO** selection by default. This is to *inadvertently* prevent pushing the encoder knob and consequently enter a mistaken value.

To validate your change move cursor to **YES** selection and press encoder knob or move cursor to **NO** selection to reject setting.

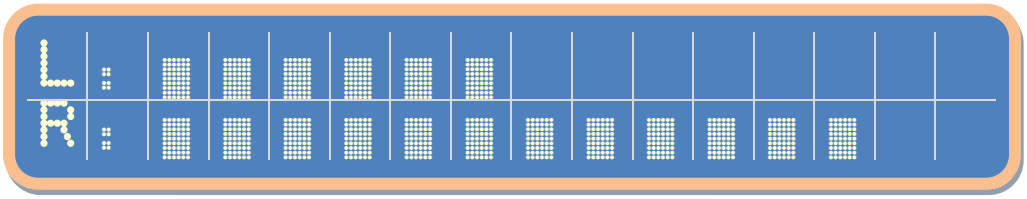
## ***AUDIO MEASURE***

The Audio menu shows the following slides:

1) AF measure, (Mono)

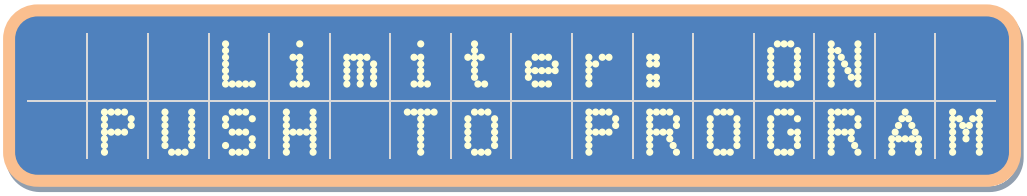



2) AF measure, (STEREO)
L & R bars show the peak modulation. The filled square blocks indicate 10% each of modulation; unfilled block shows 100% modulation **(Only for Stereo code options).**

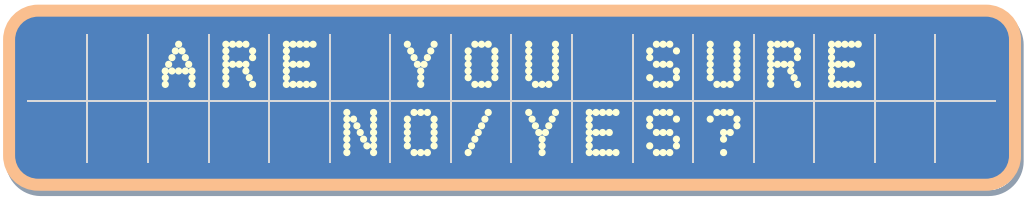



## ***LIMITER SETTING***

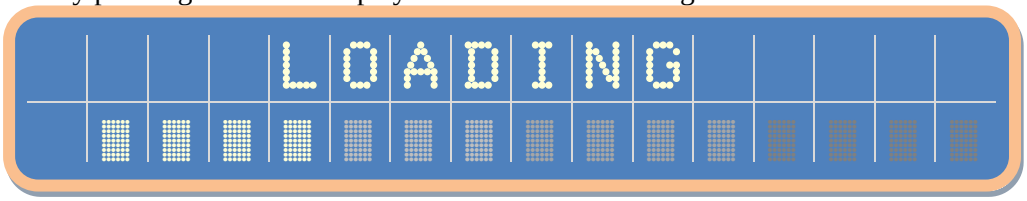
The following image shows the Limiter status and how to switch on or off as required.




Confirm the new value by pushing the knob. The image below will appear :



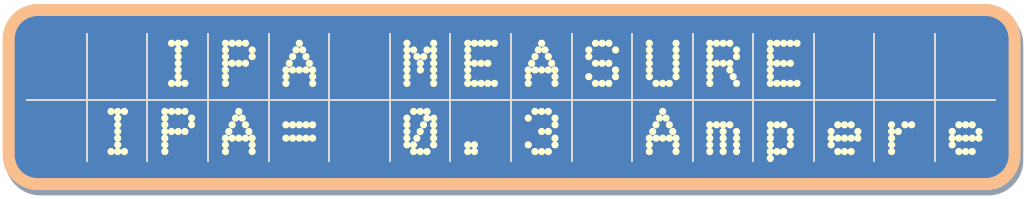

Confirm the choice by pressing YES. The display will show the following slide:




The micro is now storing new data in the memory and has activated the new Limiter status.

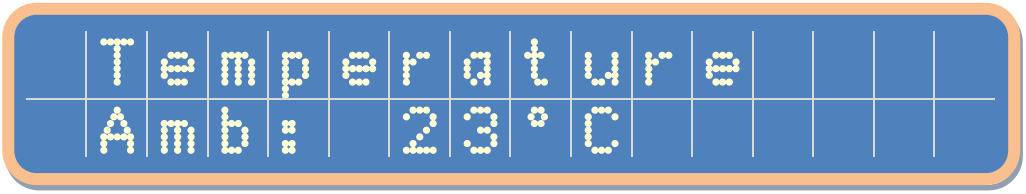
### ***IPA MEASURE***

It indicates the current absorbed from the RF POWER stage. IPA current results from the combination of driver and the power amplifier supply consumption. The RF driver section absorbs approx. 300mA and to evaluate the final amplifier current, you must simply subtract 300mA from the total IPA current.




### ***TEMPERATURE READING***

The following image shows the Ambient **TEMPERATURE READING**



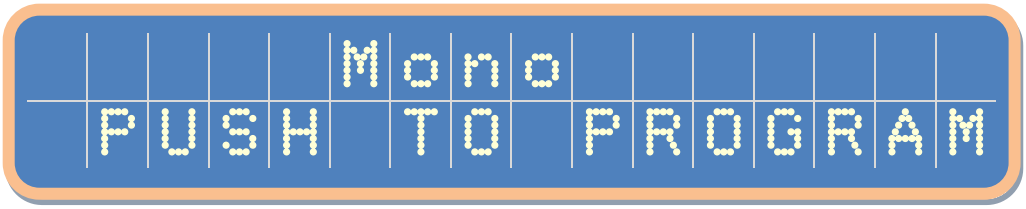

To convert **Celsius** to **Fahrenheit**, please apply the formula below:

**°F = (°C x 1.8) + 32**

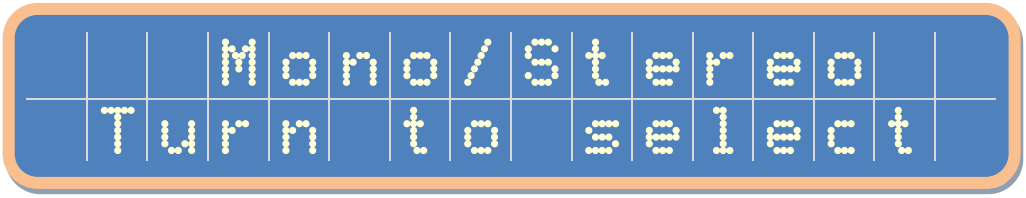
**i.e.:** 25 °C = 77 °F

## ***MODE SETTINGS MONO/MPX)***

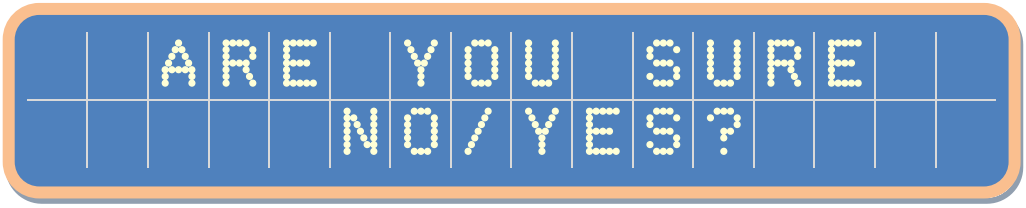
The following image shows the mode that is stored and consequently is “on air”. It also allows the access to the slides for the mode routine.



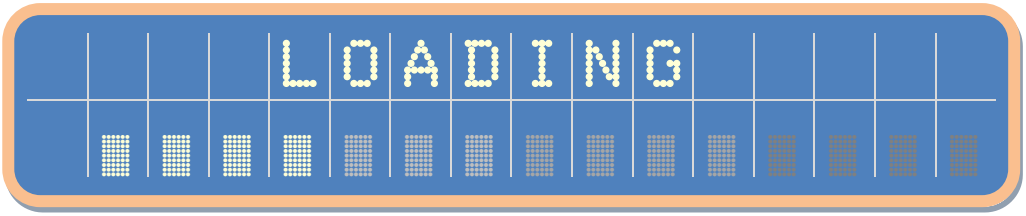

if the board "Stereo" is not present, it is not can continue programming.




Turn the encoder and set Mono or Stereo. Confirm the new value by pushing the knob. The image below will appear on front display:



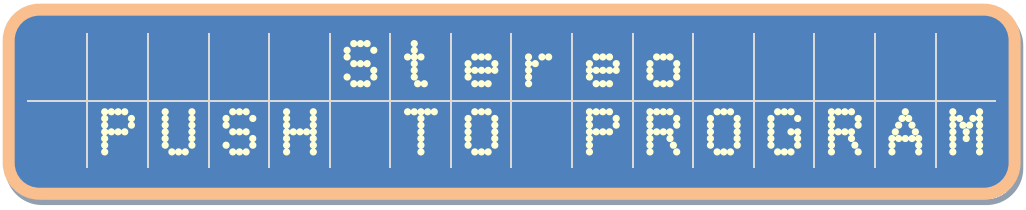

Confirm the choice by pressing YES. The display will show the following slide:



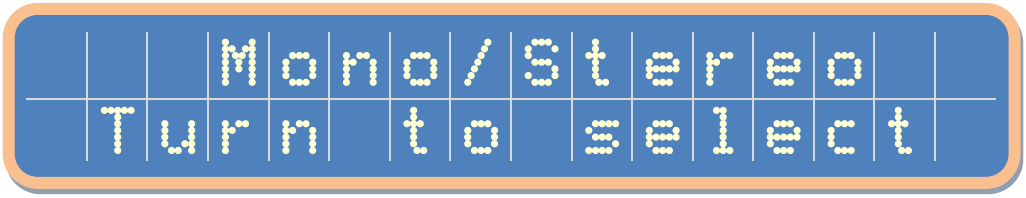
## ***MODE SETTINGS (only for stereo coder option)***

Inserire TESTO

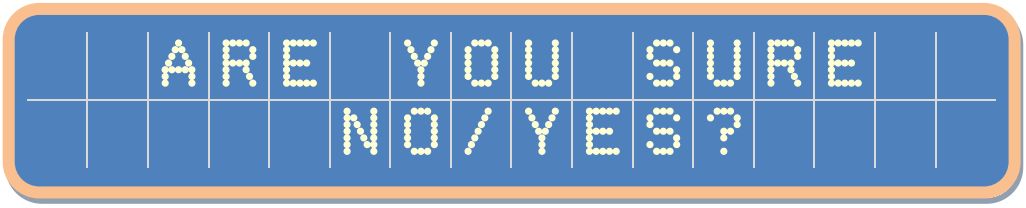
The following image shows the mode that is stored and consequently is “on air”. It also allows the access to the slides for the mode routine.



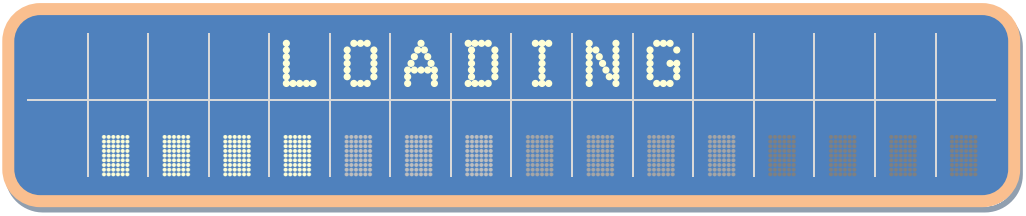

By pushing the Encoder knob the following slide appears:




Turn the encoder and set Mono or Stereo. Confirm the new value by pushing the knob. The image below will appear on front display:

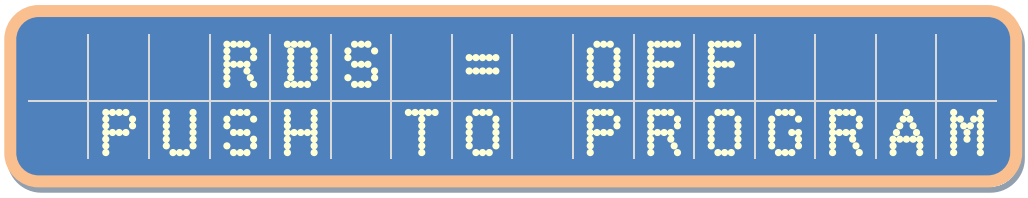



Confirm the choice by pressing YES. The display will show the following slide:

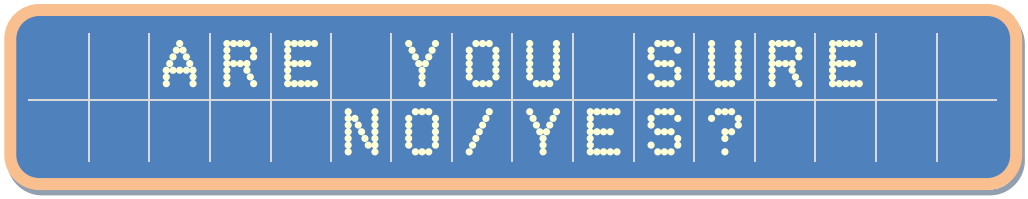


## ***RDS CARRIER SETTING (only for RDS option)***

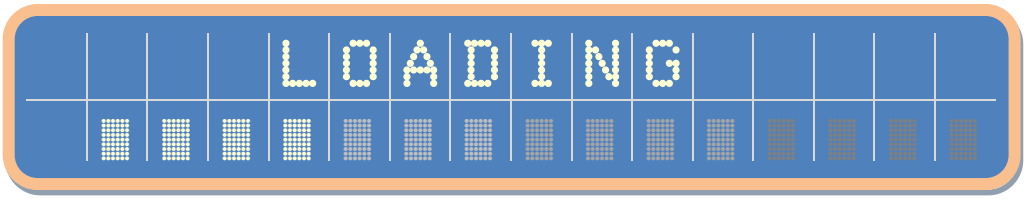
The following image shows the RDS CARRIER status and how to switch on or off as required.




By pushing the Encoder knob it is possible to switch the RDS CARRIER off:
Confirm the new value by pushing the knob. The image below will appear :




Confirm the choice by pressing YES. The display will show the following slide:



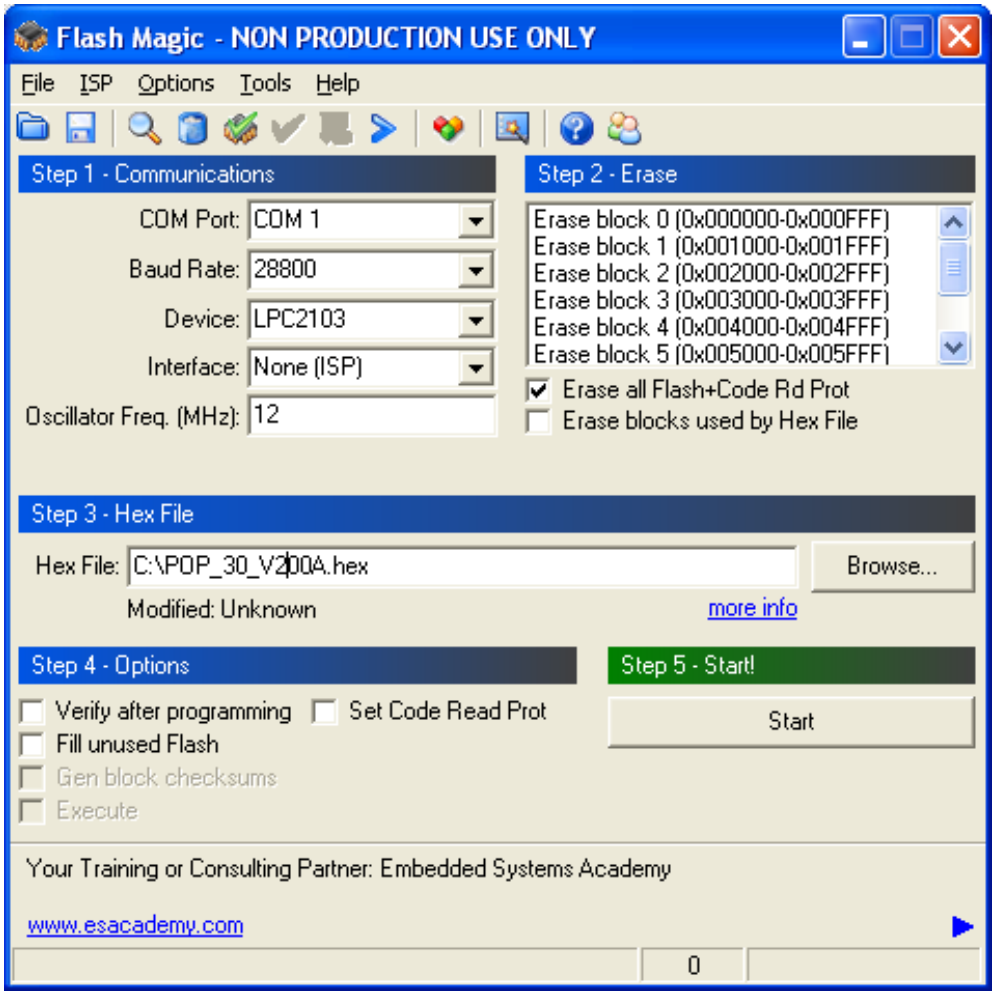

The micro is now storing new data in the memory and has activated the new Limiter status.

# Section*Five* ❺

## SOFTWARE UPDATING

### ***REQUIRED INSTRUMENTS***

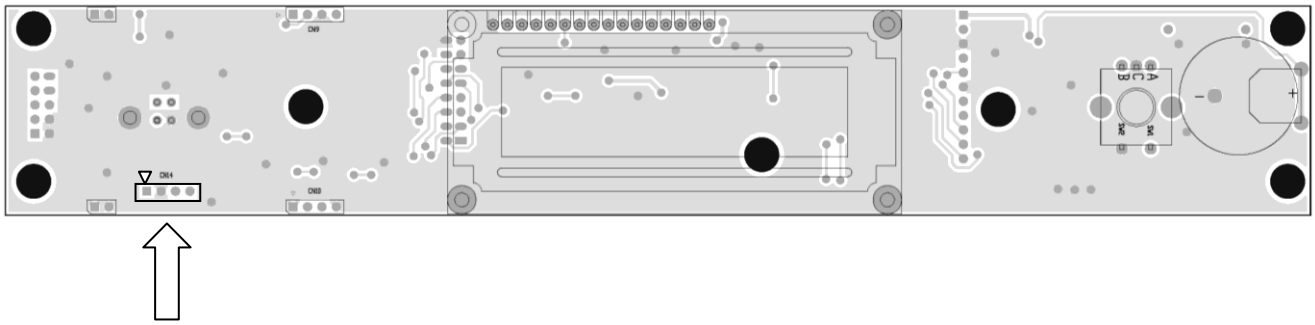
1. Serial cable 232 + Adapter cable
2. Software “Flash Magic” (Download and referred instructions are available on http://www.flashmagictool.com)



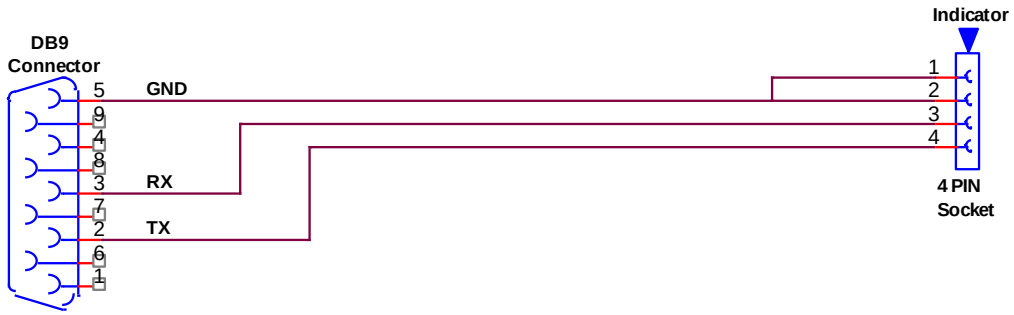
## ***LOAD FIRMWARE***

Load firmware:

1) Download the last firmware version available
2) Before switching the exciters on, connect the pin 1 of programming cable to pin 1 of CN14
3) Switch on the exciters
4) Run flash magic and set “Step 1 and Step 2”, as described in the figure shown in previous page
5) At “Step 3” link the Software file
6) Push Start and the updating will start



Programming cable



# Section*Six* ❻

## SERVICE & MAINTENANCE

### ***EXCITER SUBSYSTEMS***

The Exciter is built using the following parts which are replaceable units:

| N°item | Description | Code Spare part |
|---|---|---|
| 1 | Mainboard with RF Power and Filter | SDM00810 – POP30 MAINBOARD |
| 2 | Logic & Display Board | SDI03601 – POP30 1HE uP BOARD<br>SDI03602 – POP30 DISPLAY BOARD<br>SDI03604 – POP30 1HE LED BOARD |
| 3 | AC/DC Power Supply 100-240Vac in 27V-3.8A | APA00060 |
| 4 | Compact DC Blower 24V 0.27A | ZBD00010 |
| 5 | RDS Module (Optional) | SDZ00100 - RDS – BOARD |
| 6 | Stereo Coder Module (Optional) | SDI03100 – POP30 STEREOCODER BOARD |
| 7 | VDE Socket with filter | JAH00100 |
| 8 | 24 VDC Blower | ZBD00010 |

Parts Overview