



<https://www.metropwr.com> 



Ver 11.80



SUMMARY

SAFETY USE	2
INTRODUCTION	3
COUPLER CONNECTION FX3/FX5	4
CONNECTIONS AND INTERFACING ACCESSORIES.....	5
SWITCH ANTENNA CONNECTION FX4	6
INTERNAL MAIN MENU,WATTMETER	7
MENU SMETER, dBMETER, SWITCH	8
MENU FREQMTR,CLOCK,RL/SWR,dBm/PWR, SETUP	9
CALIBRATION MENU	10
FIRMWARE UPDATE	11
NOTE.....	12
ACCESSORIES & OPTIONAL	13
TECHNICAL FEATURES	14



Attention the technical characteristics and the menus can change without notice.

SAFETY AND STANDARDS OF USE



Handle with Care. FX773/5 is made of metal, glass and plastic and contains delicate electronic components. It could be damaged if dropped, incinerated, punctured or broken or if it comes into contact with liquids. Do not use Metropwr if it has been damaged, for example if the screen is broken, as it may cause injury.



Repair, do not open Metropwr FX773/5 and do not attempt to repair it yourself. Disassembling could damage the device. Do not exceed the power indicated on the sensor. Do not open the sensor during operation and keep it in a ventilated environment; in the event of overheating immediately switch off and disconnect the power supply.



Avoid prolonged exposure to heat for long periods of time, in the event of malfunction shut off immediately, and disconnect the power cord. Place the instrument in a dry and well-ventilated area, avoid obstructing rear ventilation holes. Do not use in environments saturated with gas or flammable substances. Do not connect to the rear outputs OUT 1/2 pc or similar devices are not network LAN ports.

Crossed-out Wheeled Bin Symbol

Equipment marked with the Crossed-out Wheeled Bin Symbol complies with council directive 2002/96/EC (the “WEEE Directive”) in European Union. For Products placed on the EU market after August 13, 2005, please contact your local representative at the end of the product's useful life to arrange disposal in accordance with your initial contract and the local law.



IMPORTANT INFORMATION Carefully read all the operating instructions, safety tips and warnings in the instruction manual. By identifying potential dangerous situations in time and observing the appropriate safety rules, accidents will be avoided. Dangerous situations to avoid to prevent all the risks that are reported above. Never use the Metropwr FX773/5 in an inappropriate manner, but only as directed in the user manual. The Manufacturer reserves the right to update the technical data contained in this manual without notice.

INTRODUCTION

The Metropwr FX773/5 is a digital Wattmeter with a comfortable touch screen interface and a 7" color LCD display. It is managed entirely by 2 powerful microprocessors, of which the first 32bit, 16bit ADC which guarantee excellent performance and possibility of expansion through numerous external accessories. The strong point of the FX773/5 is the expandability with the possibility to interface the following accessories:

- FX4 Antenna/Radio switch 1X4 posizioni
- FX3 Coupler HF/50MHz 3kW/PeP
- FX5 Coupler HF/50MHz 5kW/PeP

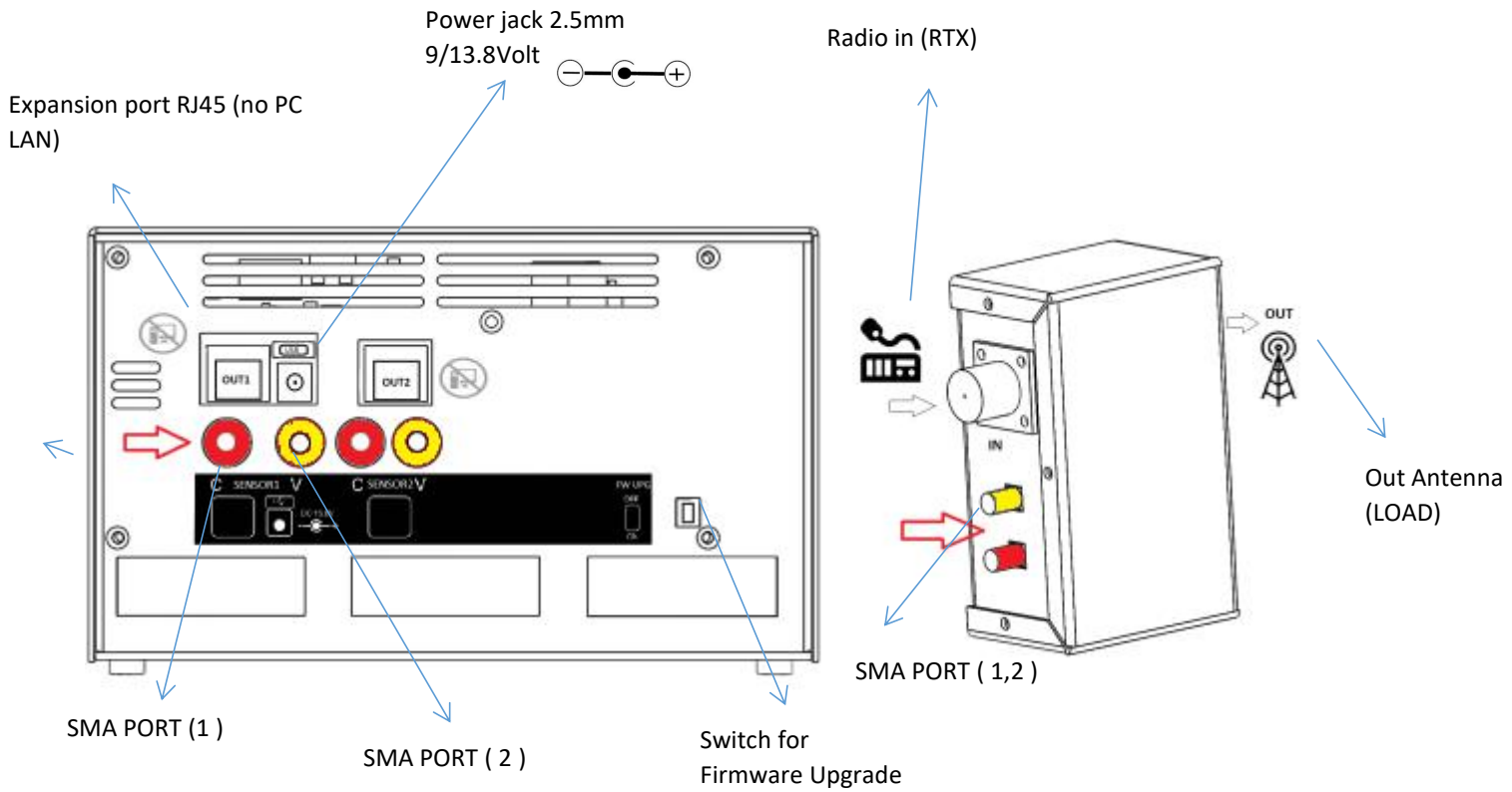
This feature makes it unique and guarantees excellent flexibility in use. It is designed for Amateur Radio use and has functions for the most demanding om. FX773/5 is a complete tool and offers the possibility of multiple measurement types all in a fast and precise way. Through the USB port it is possible to update the firmware and increase its functions and internal menus. The tool offers the following features:

- Measure power AVG , PeP , AVG , autoranging
- Measure parameters SWR,R,Z,X
- Operating frequency / corresponding band measurement
- Internal frequency counter
- Internal analog / digital clock
- Dual Antenna Switch management with 1X4 positions
- Double sensor HF/50
- Alarm diagnostic high SWR alarms
- Interfacing to PC via USB port
- FW User upgradeable

The instrument has a large 5/7" color LCD display where all the information and measurements are visible. Through convenient virtual touch keys it is possible to select naturally all the various functions and operating modes. The touch screen is resistive so it needs a correct pressure for operation and selection. The instrument also has a precise internal clock and a temperature and humidity sensor that measures the internal parameters of the instrument. The sensor is located on the back of the instrument at the ventilation holes. The connection diagram can be connected simultaneously to two FX3 / 5 sensors.

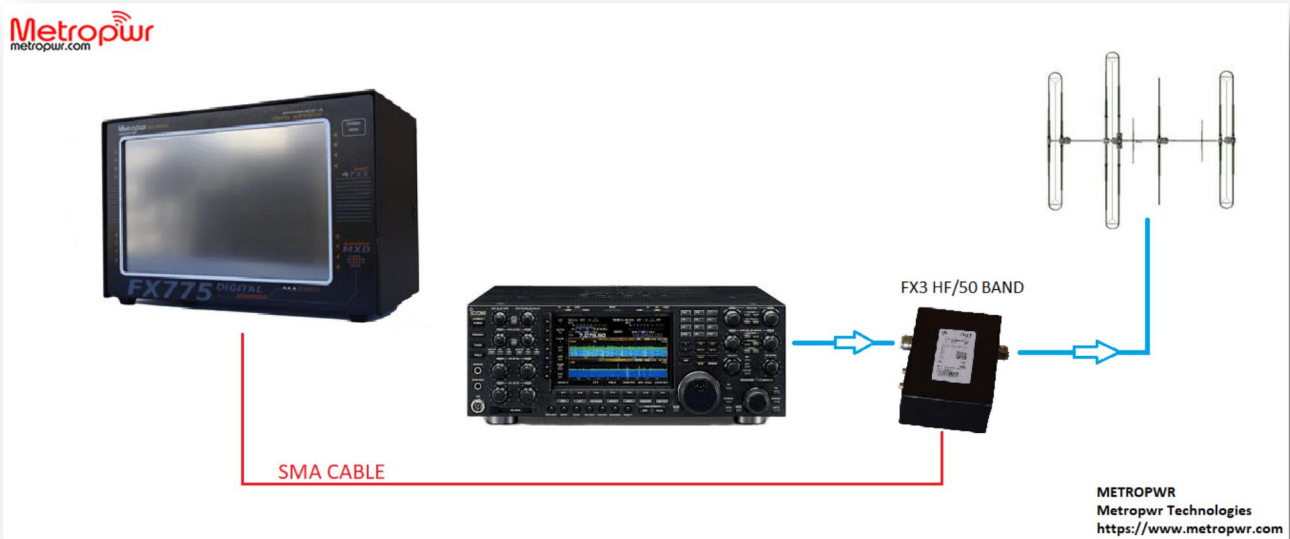
COUPLER FX3 / FX5 CONNECTION

HF/50 - FX3/5 sensor connection: Connect the power sensor through the two SMA cables supplied, respecting the positions V (voltage) and C (current) as in the picture.



The cable must be at least class 6 and internally shielded. **DO NOT CONNECT PC OR OTHER DEVICES TO OUT 1/2 IS NOT A LAN PORT.**

ACCESSORY CONNECTION DIAGRAM

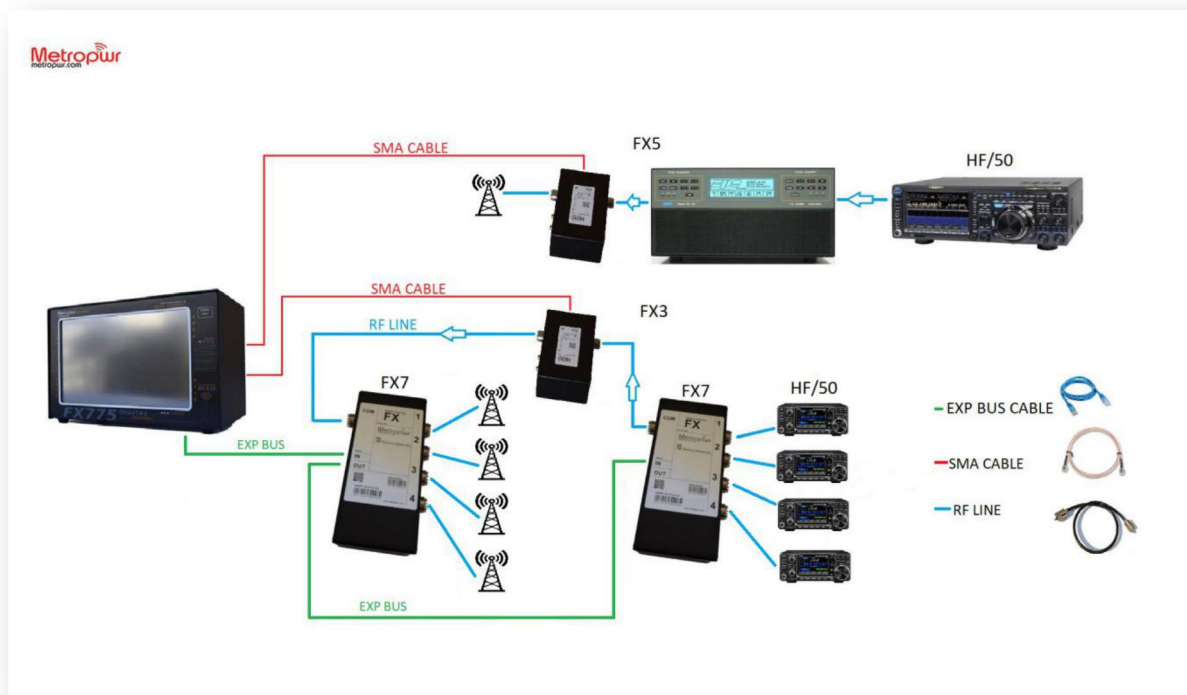


FX3/5 connection: basic connection for HF/50MHz band (use SMA cables).

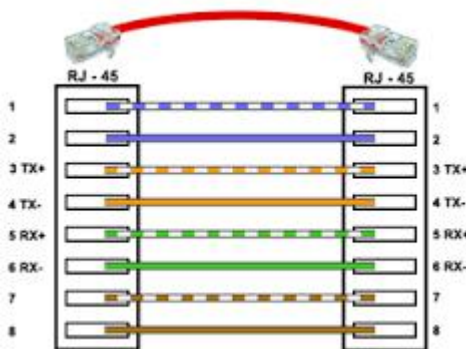


Connection FX3: connection scheme to manage HF/50MHz. Through the SMA cables it is possible to interface the Coupler FX3 / 5 and through the EXP bus the two other options can be connected in series.

FX4 ANTENNA SWITCH CONNECTION



Dual Antenna FX4 Switch Connection: You can interface up to two FX4 antenna switches to switch 4 radios and 4 antennas simultaneously. Through the corresponding menu on the FX773/5 wattmeter it is possible to manage them simultaneously. The FX4s must be connected in series through the IN / OUT port of the switches and the wattmeter side ends on the rear RJ45 port. **This port is not LAN for PC but proprietary**, so do not connect any network HUB or SWITCH. The cable to interface all the options is a simple cable for RJ45 pc. The maximum length from the wattmeter to the last option can not exceed 5 meters and must be internally shielded, at least class 6 or higher.



A simple straight LAN cable can be used to connect FX4 accessories to the FX773/5 Wattmeter. The maximum length is about 5 meters, and the scheme is the one on the left.



Attention: do not connect to the RJ45 port behind the Wattmeter FX773/5 network devices such as hubs, switches, IP phones or LAN points.

TOUCH SCREEN DISPLAY AND INTERNAL MENU

The instrument is entirely manageable through a modern touch screen user interface. Turning the instrument on from the side ON / OFF switch displays the main menu and all the information on: Antenna switch position SW / A - SW / B, date, time, temperature, internal humidity% supply voltage, operating sensor and through the LEDs the operational status of the instrument. For total shutdown, the side ON / OFF switch can be positioned in the low OFF position. By tapping the lower right icon you can place the instrument in standby. In this case FX773/5 will always be powered but the display will be turned off and the instrument will be in low absorption. In the case of an operator, the instrument will return online and the backlight will be reactivated. The intervention threshold can be set from the setup menu between 0.5 / 0.8 / 1 / 1.5 watts. In the event of disturbances from the antenna or other nearby radios, it is advisable to increase this threshold. It is also possible to select an automatic standby threshold between 1/10/30/60 minutes or deactivate it, it is advisable to keep it low or 60 minutes maximum. Also in this case, a simple operator ptt puts the instrument online. From the main menu you can also detect the currently active sensor CH1 / CH2 and if you have antenna switches connected to which position SWA - SWB is switched. The instrument has inside a frequency meter that measures the frequency and operating band, in SSB could indicate non-stable values, in this case transmit in FM / AM / CW to detect the exact operating frequency. The internal menus are shown below.



MAIN MENU: this is the main menu to access all the sub-menus.

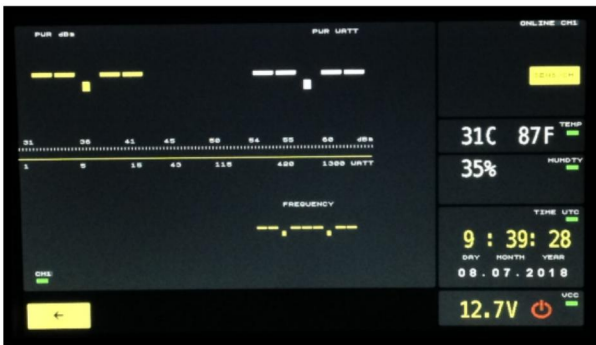


MENU WATTMETER: where it is possible to visualize the Power PeP (peak), AVG (average), all parameters SWR, R, Z, X, operating frequency, band, power supply temperature / humidity internal date now select the sensor and antenna switch.

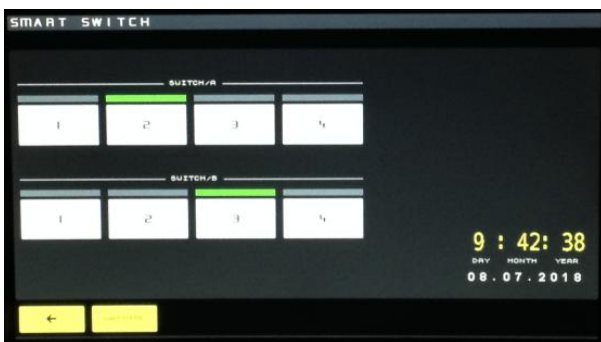
MENU



MENU SMETER: as a Wattmeter menu but with an analog virtual index. The virtual instrument is autoranging with multiplication factor X. Example if the index indicates 10 and the instrument indicates X100, the measured power is 1000 Watts PeP.



MENU dBmeter: here are reported the power measurements in dBm also in graphical format up to 1500 Watts. Possibility to select also CH1 / 2 operating sensor.



MENU SWITCH: through this menu the FX7 antenna switches are managed. If 2 switches are connected, two rows of keys are displayed, one for switch A and the other switch B. If only one FX7 is connected, only one row of keys will be displayed. The green LED indicates the currently selected switch. The settings are stored and retained even after switching off.



If there is no FX7 antenna switch this menu will not show any virtual keys. Activate the FX7 switches first from the SETUP menu. Attention, the FX4 antenna switch is not compatible with the FX773/5 wattmeter.

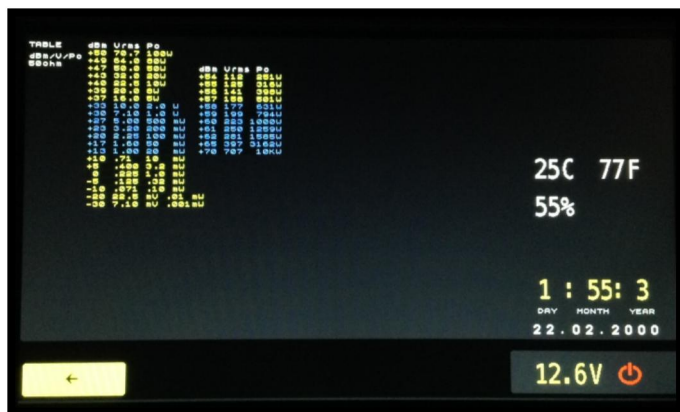
MENU



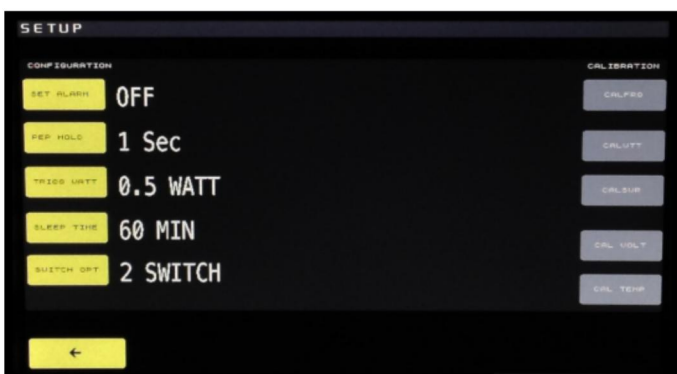
MENU FREQMTR: FX773/5 has a digital frequency inside this menu and you can view the operating frequency sampled by the sensor.



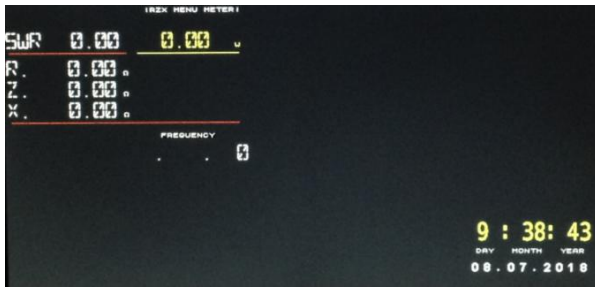
MENU CLOCK: The instrument has a chip dedicated to the system clock and perpetual calendar. It is possible to set the time through the SET submenu. It is also possible to display the temperature and humidity in% of the instrument and the other operating parameters. The sensor is positioned on the back side in correspondence with the ventilation holes.



MENU RL/SWR - dBm/PWR : contains conversion tables.



MENU SETUP: Through this menu it is possible to set the SWR alarm, time in seconds display PeP power, Trigger watt minimum power for measurements, Sleep Time time for standby, Switch opt number of connected switches. And all the calibrations of frequency, power, swr, on all the operating bands, in more power supply and temperature.

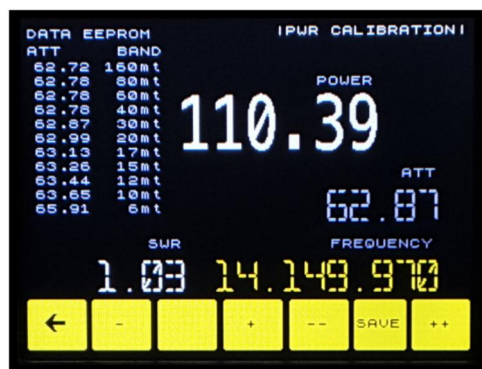


MENU RZX: Through this menu it is possible to monitor the parameters R, Z, X, SWR simultaneously.

CALIBRATION MENU FREQUENCY, POWER, SWR



CALFREQ: through this menu it is possible to calibrate the internal frequency meter. To transmit with the radio at 10MHz and to set through the keys +/- ++ / - the correct display of the frequency to 10.000.000 MHz to memorize parameter through SAVE key.



CALWTT: through this menu it is possible to recalibrate the AVG power on all 11 bands. The procedure is simple, transmit with 100 Watt on * dummy load, connect an external precision wattmeter in series to the FX3 / 5 coupler and through the +/- ++ / - keys to match the power read by the FX773/5 Wattmeter with that external reference wattmeter. After saving with SAVE, repeat operation for all 11 bands.



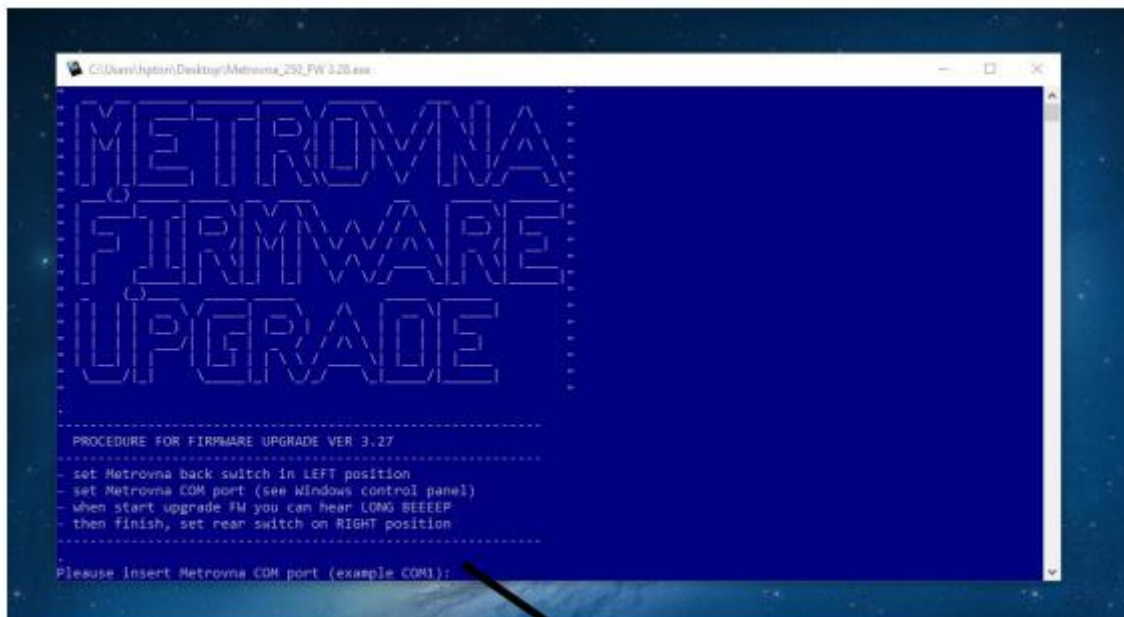
CALSWR: through this menu it is possible to recalibrate the SWR part. Connect the radio and set 10W transmit by not connecting any antenna. Caution operation could damage the radio's endings then give a small carrier hit and simultaneously press SAVE button. Repeat this on all 11 bands.



CAL VOLT / CAL TEMP / INFO :There are two other menus to calibrate the exact supply voltage and operating temperature. All parameters are stored in the internal EEprom. The instrument is already calibrated in the factory, but in case of adding optional sensors it is possible to recalibrate the instrument entirely. Both sensor 1 and 2 can be calibrated independently. It is necessary to select it in the menu at the top CH1 / 2 and proceed with the calibration of the relative. Through the third info menu it is possible to detect the version of the fw and other info.

FIRMWARE UPDATE

It is possible to update the FX773/5 Wattmeter through a firmware upgrade. The update is very simple. The first step is to position the rear switch in the lower position. Then just connect the instrument to the PC, install the relevant driver, detect through the windows control panel the serial port created, example COM10, run the utility on the PC. Select COM10 sample at the prompt and press enter. Within 1 minute the Wattmeter will be updated. Then reposition the rear switch to the top. It is very important to disable each antivirus before copying the upgrade file to the PC and launching the application.



Selezionare la porta Seriale
esempio COM10

Do not turn off or disconnect power during the upgrade process.

NOTE:

ACCESSORI & OPTIONAL



Fx7 Antenna/Radio Switch

- Coverage 1.8/55 MHz 160/6mt
- Power 1kW PeP
- 1X4 Positions So259
- Flatness 0.1 dB
- In/out EXP Bus (Easy Lan Conector)
- Max Distance to Wattmeter 5mt
- No need ext. supply



FX3 HF/50MHz Coupler

- Coverage 1.8/55 MHz 160/6mt
- Power 500mW/3kW PeP
- Directivity 30dB
- Flatness 0.1 dB
- Connector so259 + SMA



FX5 HF/50MHz Coupler

- Coverage 1.8/55 MHz 160/6mt
- Power 500mW/5kW PeP
- Directivity 30dB
- Flatness 0.1 dB
- Connector so259 + SMA



TECHNICAL FEATURES - METROPWR FX773/5

- Coverage 1.8/55 MHz 160/6mt
- HF/55MHz Measure Power AVG, PeP, dBm, R, Z, |X| , SWR, Frequency
- Wide Autoranging Power range 500mW/5kW
- HF/50MHz Optional Couplers 500mW /3kW (FX3) – 500mW/5kW (FX5)
- Accuracy SWR <5%
- Directivity Coupler 30dB
- Accuracy Power better 5%
- Accuracy R,X,Z better 10%
- Operating voltage 13.8V
- Dimensions 205X120X109 mm
- Weight 500gr

FUNCTIONAL CHARACTERISTICS

- Display TFT 5/7” 16 K color Touch screen
- uP 32bit + Coprocessor
- 16 Internal Menus
- Internal Analog/Digital Clock
- PC USB port
- ADC resolution 16bit
- Fast EXP Port
- Updating Firmware through USB

