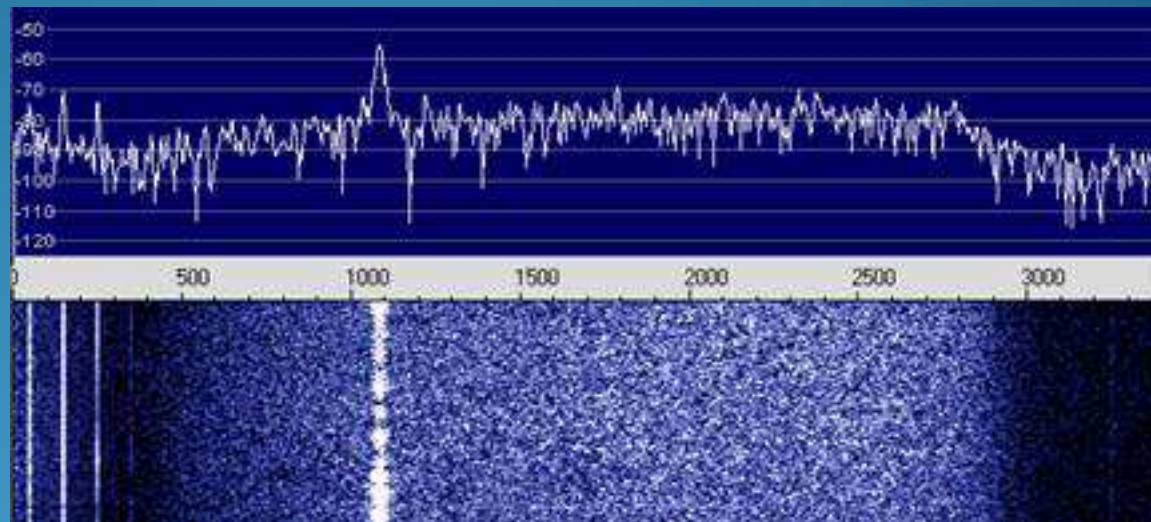


# Going Digital



# I MODI DIGITALI

Con l'avvento del personal computer, i radioamatori sono stati i primi a fare sperimentazione di trasmissioni in digitale....

.... anche se il primo modo digitale usato dai radioamatori è stato il CW, che non ha bisogno del computer per essere modulato...



I radioamatori li usano molto

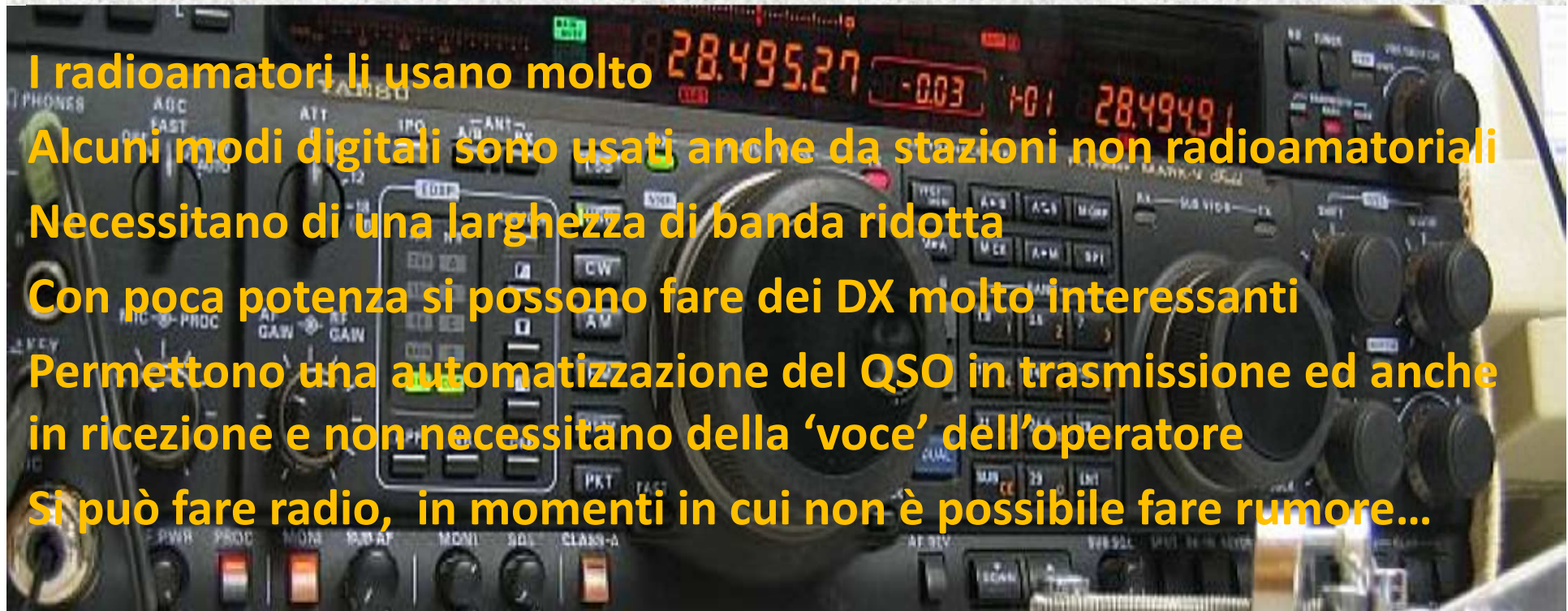
Alcuni modi digitali sono usati anche da stazioni non radioamatoriali

Necessitano di una larghezza di banda ridotta

Con poca potenza si possono fare dei DX molto interessanti

Permettono una automatizzazione del QSO in trasmissione ed anche in ricezione e non necessitano della 'voce' dell'operatore

Si può fare radio, in momenti in cui non è possibile fare rumore...







# I MODI DIGITALI DEI RADIOAMATORI

**RTTY**

**SSTV**

**PACKET**

**AMTOR**

**MT63**

**JT65A**

**PSK (31, 64, etc.)**

**FAX**

**APRS**

**FELD-HELL**

**OLIVIA**


**etc...**


# LE RISORSE SU WEB

<http://www.ik6ihu.it/digitali/indexdigitali.htm>

File Modifica Visualizza Preferiti Strumenti ?

Pagina Sicurezza Strumenti

 **WWW.IK6IHU.IT**  
Enzo P. Guardiafrele(Ch) Italy - JN72DE



home page chi sono links articoli progetti foto radioamatori contatti QSL

guestbook forum area privata **modi digitali** download cisar abruzzo CW news archivio

**RTTY**  
(Radio Tele Type)

IK68HU (IK68HU.MDT) - MMTTY Ver1.65

File(F) Edit(E) View(V) Option(O) Profiles(S) Program(P) Help(H)

Control	Demo-dulator (DR)	Macro
FIG	Mark 2125 Hz Type Rev. HAM	1X2 QANS SK RY
UOS	Shift 170 Hz SQ Not BPF	2X3 M6 EE M14
TX	BW 60 Hz	DE3 M7 M11 CQ2
TXOFF	AV 70 Hz ATC NET AFC	URS99 M8 M12 CQ1

QSO Data Init Call MAKO Find Name MAKO My His 599 14

RTTYRTTYRTTYRTTYRTTYRTTYRTTY  
<090729 12:49:32 RX>  
TOKKUK  
<090729 12:49:36 TX>  
MAKO MAKO DE IK6IHU IK6IHU IK6IHU K  
<090729 12:49:44 RX>  
V  
<090729 12:49:46 TX>  
RTTY CQ CQ CQ DE IK6IHU IK6IHU IK6IHU  
RTTY CQ CQ CQ DE IK6IHU IK6IHU IK6IHU PSE K  
<090729 12:50:03 RX>

100%



# LE RISORSE SU WEB

<http://kb9ukd.com/digital/>

File Modifica Visualizza Preferiti Strumenti ?

Pagina Sicurezza Strumenti

## Digital Modes Samples

Click on a digital mode below to hear a brief sample of the sound these modes make. Hopefully this page will help you identify a mode you've heard (or help me identify ones others have heard!). Many folks have submitted excellent quality, lengthy files which are no trouble for me to accept, but I do generally drop the sampling rate and length to make them more reasonable to download over a slower line. The intent here is more for recognition by ear than for signal analysis. My page focuses on what hams call "Utility" modes or "Utes". Additional amateur radio mode links are at the bottom of the page.

Send me your .wav files of digital modes not featured and I'll happily add it, paying credit where due. High sample rates and large files are encouraged. Please include frequency and user info to help ID your sample. Your comments or clarifications are always welcome. Send mail to [garyhahn@wi.rr.com](mailto:garyhahn@wi.rr.com).

Send mail to: [garyhahn@wi.rr.com](mailto:garyhahn@wi.rr.com) 6/19/2009 [Uncompressed files link - good luck](#)

Sound	Acronym	Description	Common Freqs	Links	Special Thanks
<a href="#">CW 20 wpm</a>	Continuous Wave	Continous Wave is technically a modulation scheme, but the term CW is often used interchangeably with Morse Code. This sample is keyed at 20 words per minute. Many repeaters ID in Morse Code.		<a href="#">More info</a>	
<a href="#">JT65A</a>		Weak signal mode used to make contacts all over the world with 10-15 watts of power.	14075 KHz USB	<a href="#">WSJT</a>	John KC0BMF, Bob VE2HAR
<a href="#">RTTY 45 baud</a>	Radio TeleType	Sends text as 5 bit characters with no error correction. 45 baud is the Amateur standard.	14075 KHz USB	<a href="#">More info</a>	
<a href="#">RTTY 75 baud</a>	Radio TeleType	Same as above, except faster. Commonly used in weather data transfer.	10536 kHz USB		

100%

# LE RISORSE SU WEB

<http://www.nonstopsystems.com/radio/radio-sounds.html>

Radio sounds **LISTEN NOW!**

---

*Latest update: 25-Apr-2010 (added ROS mode)*

*Update: 30 March 2010 (cleaned up dead links, added & cleaned up recordings, added waterfalls, added JT65A)*

**NOTE:** users have observed that sometimes it may take a while (10-20 sec) before a sound files "connects"...

[\[sound clips\]](#) [\[waterfall spectra\]](#) [\[mode descriptions\]](#)

---

These are several files with examples of sounds from digital radio modes on short wave. More info on most of these modes is provided at the bottom of this page.

- **Hellschreiber** (Typenbildfeldfernsehreiber)
  - [Feld Hell](#)
  - [Feld-Hell QSO](#) (18 minutes recording of the weekly Sunday euro Hell Net on 3577-3582 kHz at 15:00-15:30 UTC; recorded on 14 sept 2008 by Bill, KA8VIT, via [this great web-SDR](#) in The Netherlands)
  - [Hell-72 GL](#) (sorry, poor quality)
  - [Hell-80](#) (actual QSO with start-stop and synchronous transmissions)
  - [Hell-80](#) (asynchronous mode)
  - [Hell FM-105](#)
  - [Hell FM-245](#)
  - [Hell PSK-105](#)
  - [Hell PSK-245](#)
  - [Hell FSK-105](#)
  - [Hell-FSK-245](#)
  - [C/MT Hell](#) - text appears in waterfall display
  - [Duplo Hell](#)
  - [Hell-Thomson](#)

100%

# LE RISORSE SU WEB

<http://www.i0hjn.it/RTTY%20PER%20CHI%20INCOMINCIA.pdf>



## RTTY per chi incomincia

---

Ho ritenuto utile raccogliere in un unico documento gli aspetti principali riguardanti le trasmissioni radioamatoriali in RTTY. Queste note hanno lo scopo di aiutare il novizio che si avvicina a questo modo di trasmissione ma anche essere un pro-memoria che può tornare utile all'operatore più esperto.

Il documento è focalizzato sull'uso del software MMTTY che è ritenuto il miglior decodificatore disponibile. In particolare vedremo MMTTY inserito nel software per contest QARTest di Paolo IK3QAR.

Premetto che la maggior parte del documento è tratta da materiale reperito sui siti in Bibliografia e dall'Help di MMTTY. Una raccomandazione che non mi stancherò mai di fare è di leggersi con attenzione il Manuale di QARTest. Scoprirete diverse funzioni che qui non sono citate ma che utilizzate come si deve risultano estremamente utili in contest..

### RTTY

L'RTTY è un sistema di trasmissione digitale che utilizza il codice Baudot a 5 bits. Questo significa che ogni carattere è formato da 5 bits anche se in realtà ne vengono trasmessi 8 in quanto vi è la presenza di uno start bit e di 2 stop bit. Normalmente in HF si usa una baud rate (velocità) di 45.45 baud che è l'equivalente di 60 wpm (word per minute = parole al minuto). Anche se questa è la velocità standard capita a volte di imbattersi in trasmissioni più veloci come 50 baud (66 wpm) ma anche di 75



# LE RISORSE SU WEB

<http://www.i0hjn.it/RTTY%20tips%20&%20tricks.pdf>



## RTTY Contest – Tips & Tricks

---

### I MESSAGGI DI QARTEST IN CONTEST RTTY

QARTest per ogni tipo di contest propone dei propri messaggi di default.

Di seguito trovate i miei messaggi di QARTest per il Contest Sezioni HF categoria RTTY. Tenete presente che potete programmare i messaggi a vostro piacimento anche durante lo svolgimento del Contest (a me capita spesso). Quelli che vi propongo sono a scopo di esempio.

Il Contest delle Sezioni HF prevede lo scambio dell'RST e del codice della Sezione (per ARI Colli Albani è 0013).

**SUGGERIMENTO:** una volta individuati, sulla base dell'esperienza, quali sono i messaggi che meglio si adattano al vostro modo di operare, potete usare il comando "Esporta" e salvarli così in un file che potrete richiamare ad ogni nuovo contest. In tal caso vanno personalizzate in base al contest le aree contrassegnate in giallo

Noterete che alla fine dei messaggi non ho usato i caratteri finali "K" o "BK", in contest sono totalmente inutili ed allungano solo il messaggio trasmesso. Inoltre, quasi tutti i messaggi iniziano con {CR} per far sì che il nostro messaggio venga trasmesso su una nuova riga evitando così di confonderlo col noise che il



# LE RISORSE SU WEB

<http://www.arrl.org/band-plan>

## 160 Meters (1.8-2.0 MHz):

1.800 - 2.000	CW
1.800 - 1.810	Digital Modes
1.810	CW QRP
1.843-2.000	SSB, SSTV and other wideband modes
1.910	SSB QRP
1.995 - 2.000	Experimental
1.999 - 2.000	Beacons

## 80 Meters (3.5-4.0 MHz):

3.590	RTTY/Data DX
3.570-3.600	RTTY/Data
3.790-3.800	DX window
3.845	SSTV
3.885	AM calling frequency

## 40 Meters (7.0-7.3 MHz):

7.040	RTTY/Data DX
7.080-7.125	RTTY/Data
7.171	SSTV
7.290	AM calling frequency

# LE RISORSE SU WEB

<http://www.arrl.org/band-plan>

## 30 Meters (10.1-10.15 MHz):

10.130-10.140	RTTY
10.140-10.150	Packet

## 20 Meters (14.0-14.35 MHz):

14.070-14.095	RTTY
14.095-14.0995	Packet
14.100	NCDXF Beacons
14.1005-14.112	Packet
14.230	SSTV
14.286	AM calling frequency

## 17 Meters (18.068-18.168 MHz):

18.100-18.105	RTTY
18.105-18.110	Packet

## 15 Meters (21.0-21.45 MHz):

21.070-21.110	RTTY/Data
21.340	SSTV



# LE RISORSE SU WEB

<http://www.arrl.org/band-plan>

## 12 Meters (24.89-24.99 MHz):

24.920-24.925	RTTY
24.925-24.930	Packet

## 10 Meters (28-29.7 MHz):

28.000-28.070	CW
28.070-28.150	RTTY
28.150-28.190	CW
28.200-28.300	Beacons
28.300-29.300	Phone
28.680	SSTV
29.000-29.200	AM
29.300-29.510	Satellite Downlinks
29.520-29.590	Repeater Inputs
29.600	FM Simplex
29.610-29.700	Repeater Outputs

Fifty Years of

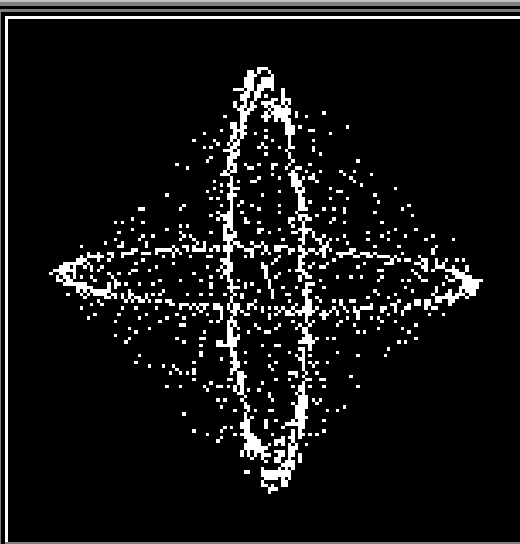
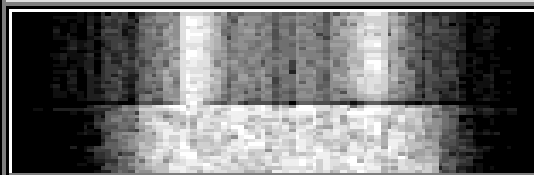
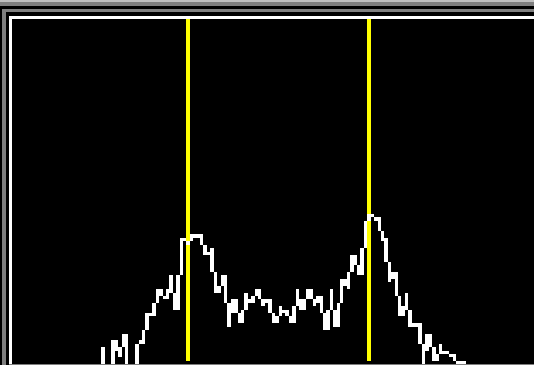
# RTTY

RJCDROMS.COM



## RTTY Control panel

View(V) Option(O) Profiles(S)



P1-CQ

P1-S&P

P2-CQ

P2-S&P

P3-CQ

P3-S&P

P4-CQ

P4-S&P

## Band Plan RTTY

3.600 +/- 20 KHz

7.040 +/- 5 KHz

10.145 +/- 5 KHz

14.090 +/- 10 KHz

18.105 +/- 5 KHz

21.100 +/- 20 KHz

24.925 +/- 5 KHz

28.100 +/- 50 KHz

50.600

144.600

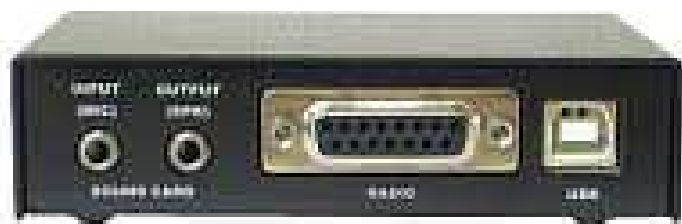
432.600 (FSK/PSK)

433.600 (FM/AFSK)

1296.600



# LA STAZIONE PER I MODI DIGITALI



# IL COMPUTER ed i PROGRAMMI



**Porta RS-232 (COMx)**

**Porta USB**

**Scheda audio**

**Ingresso ed uscita audio**

**Software per la gestione dell'interfaccia commerciale (router virtuale)**

**Software per la gestione dei modi digitali**

**MMTTY**

**MMSSTV – MMVARI**

**MIXW (ver. 2x o 3)**

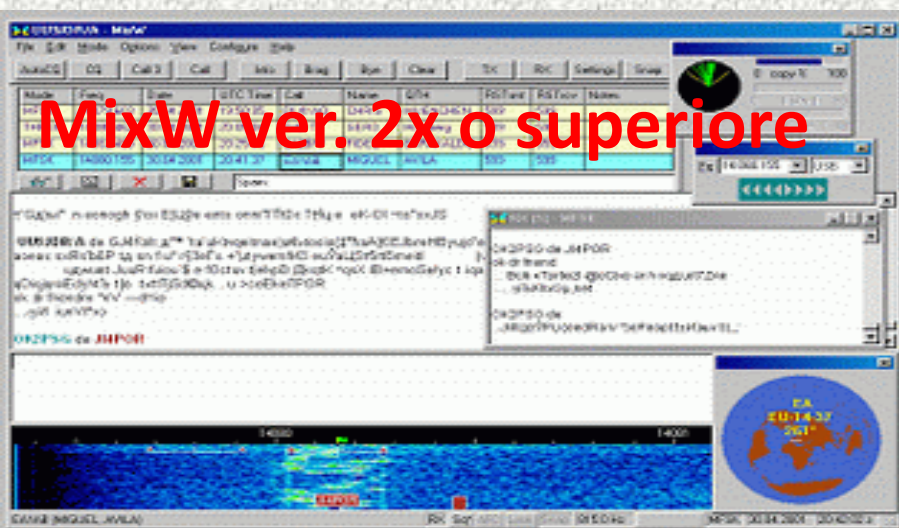
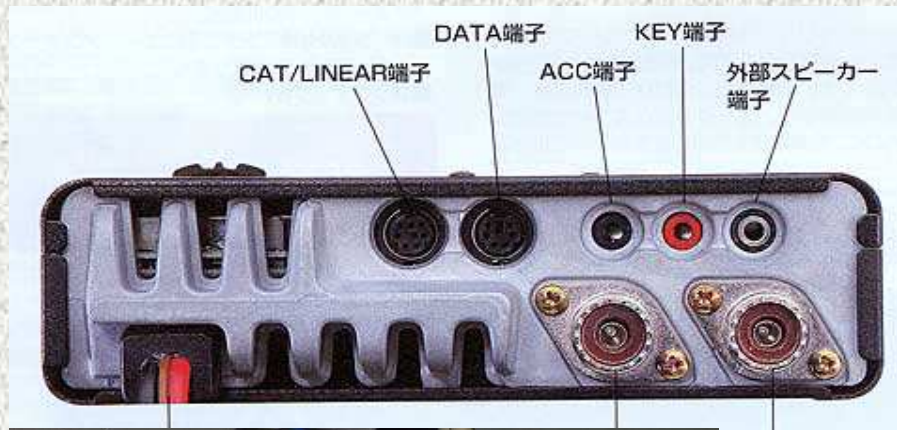
**MM hamsoft di JE3HHT Makoto Mori**

<http://hamsoft.ca/>

<http://mixw.net/>



# FT-857D + Interface IZ0DXD + MixW



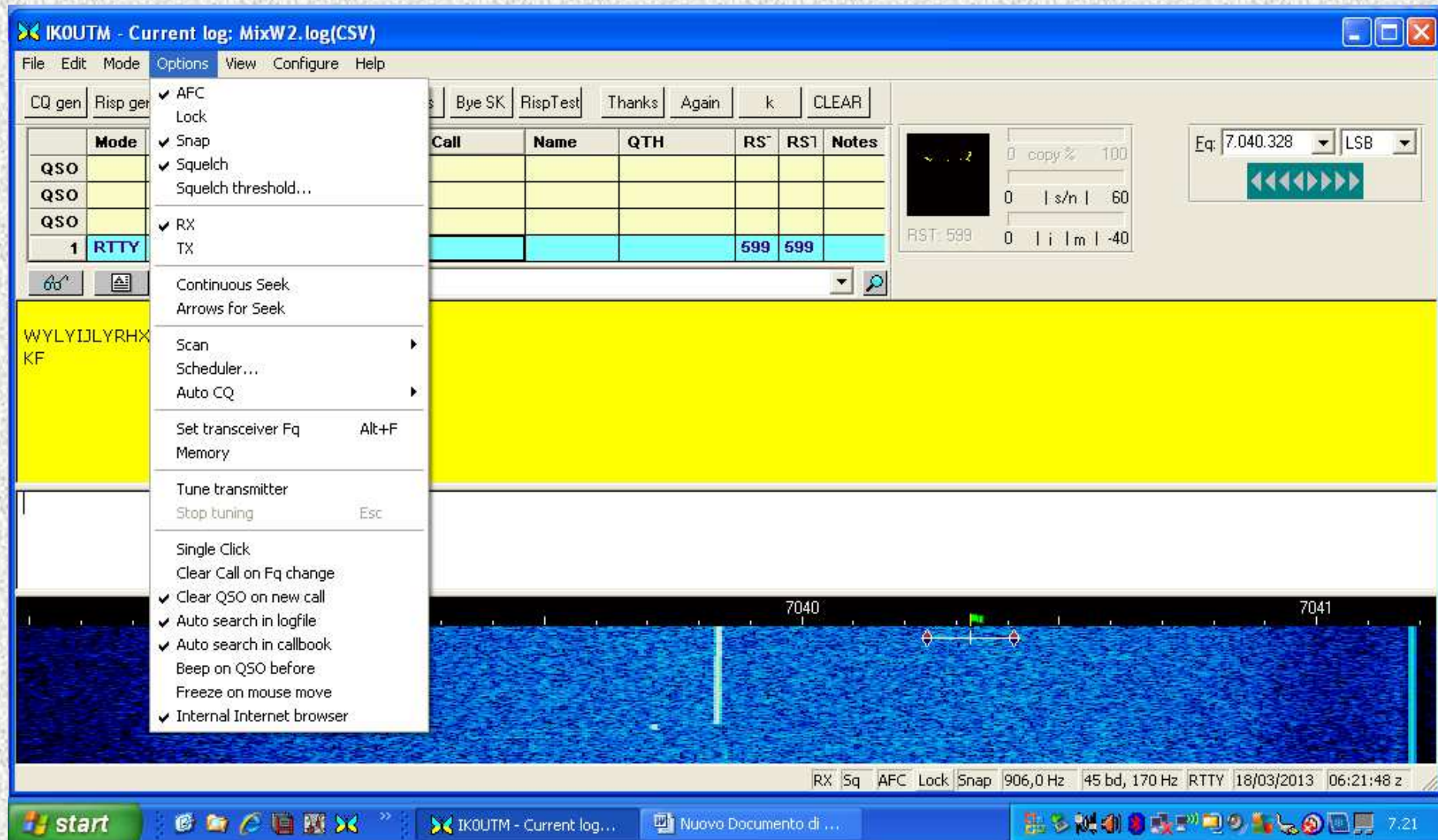
Presse RS232 → su RS232 del PC

Jack in-out → mic e cuffia PC

Prese miniDIN dati e CAT → prese dati sul retro FT-857

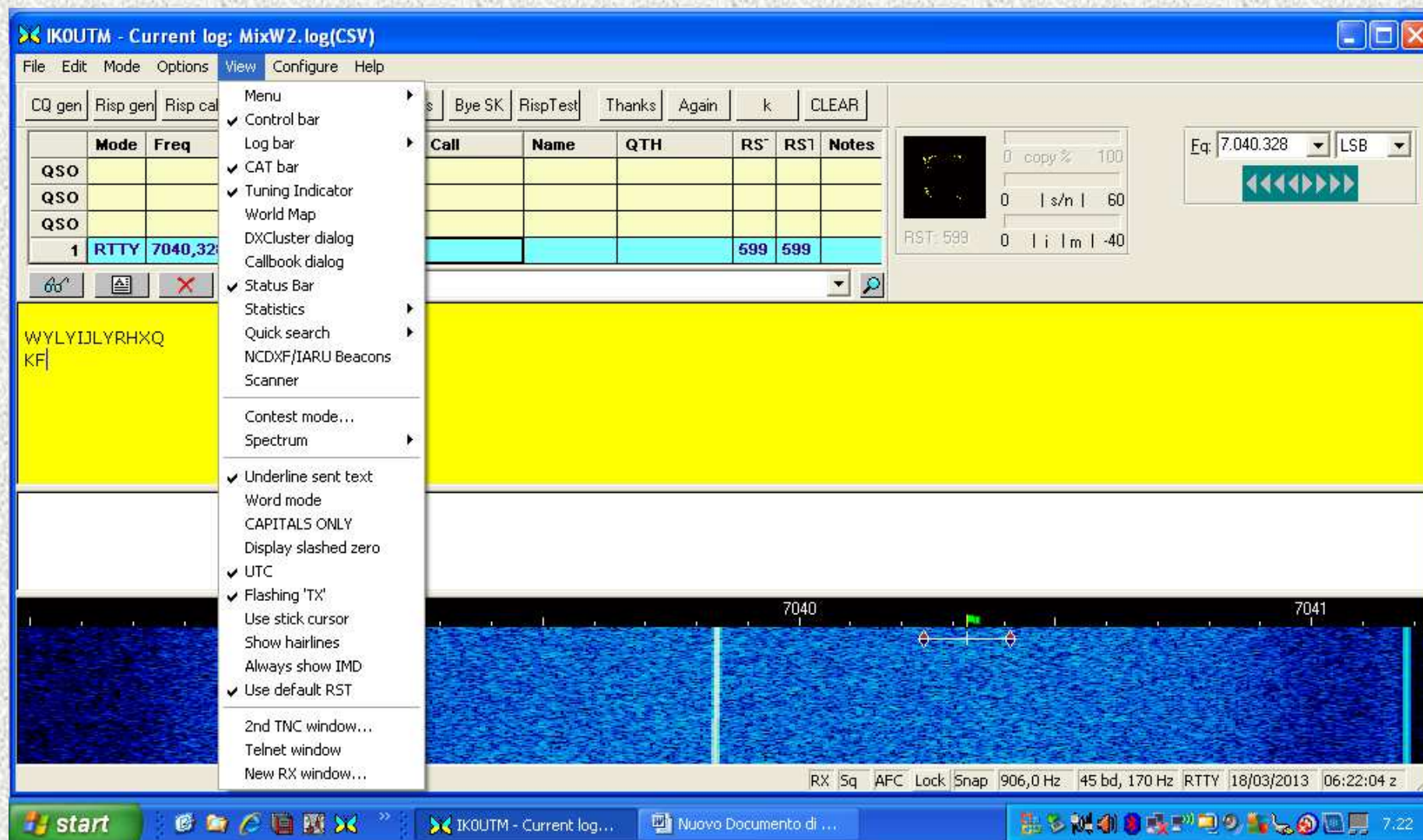


# Configurazione MixW con FT-857D e interface DXD

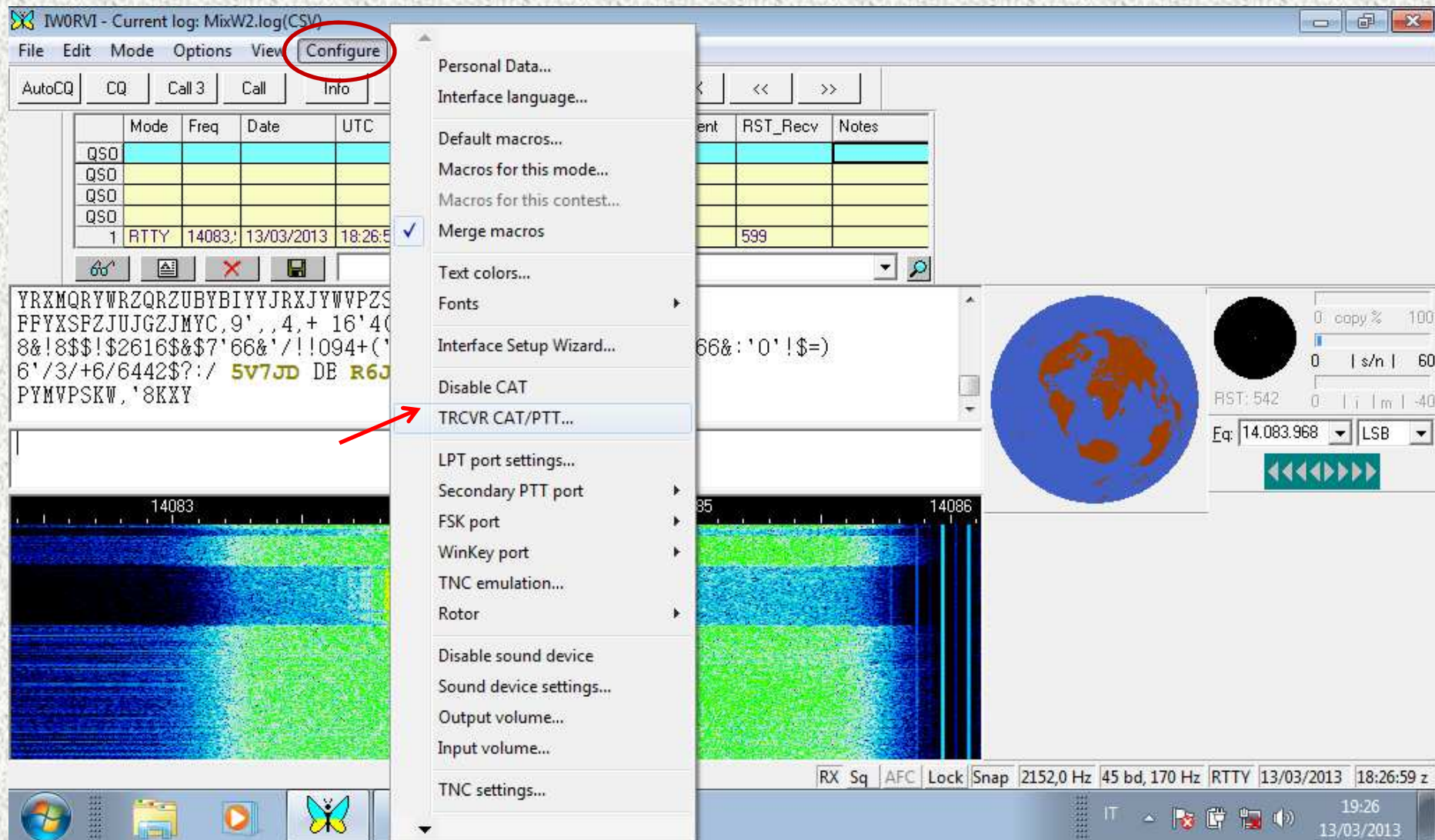




# Configurazione MixW con FT-857D e interface DXD



# Configurazione MixW con FT-857D e interface DXD





# Configurazione MixW con FT-857D e interface DXD

ITW0RVI - Current log: MixW2.log(CSV)

File Edit Mode Options View Configure Help

AutoCQ CQ Call 3 Call Info Brag Bye

	Mode	Freq	Date	UTC	Call
QSO					
QSO					
QSO					
QSO					
1	RTTY	14083	13/03/2013	18:26:06	

\$1/2?662!1''&6!'#-+-,-,966\$,/1!0& ''60:  
84 8!6&!#-)),,8)!(  
401=7'/'++68!=84?\$4&=#?86JFQEWHLHSSYGBL  
R6JY R6JY R6JY K TRRRFZJGZTAJJYCDYD

14083 14084

PTT & CAT

CAT YAESU OK Cancel

Model FT-857

PTT & CAT Interface

COM1 (9600) Details Disabled

☐ Save frequency on exit ☐ Display zero beat frequency

☐ PTT via CAT command

☐ CW via CAT command

☐ CW out via soundcard

☐ CW is LSB

☒ AFSK in place of FSK

DIG (Yaesu) is LSB

CW pitch 800 Hz

FSK center fq 2210 Hz

Default digi mode RTTY

☒ Mouse wheel for tuning Sensitivity, Hz/tick 500

Cat correction (Hz)

Global -1250

USB 0

LSB 0

CW 0

Digi 0

TX to RX: 0

Solo una COM per CAT e PTT/Audio

RST: 542 0 copy % 100

0 | s/n | 60

Eq: 14.083.968 LSB

19:26 13/03/2013

RX Sq AFC Lock Snap 2152,0 Hz 45 bd, 170 Hz RTTY 13/03/2013 18:26:06 z

# Configurazione MixW con FT-857D e interface DXD

IXORVI - Current log: MixW2.log(CSV)

File Edit Mode Options View Configure Help

AutoCQ CQ Call 3 Call Info Brag Bye

	Mode	Freq	Date	UTC	Call
QSO					
QSO					
QSO					
QSO					
1	RTTY	14083.1	13/03/2013	18:26:37	

R6JY R6JY R6JY K TRRRFZJGZTAJJYCDYDS  
TBWYORFUG PFFDP  
YRXMQRYWRZQRZUBIYYJRXJYWVPZSF  
FPYXSPZJUJGZJMYC.9'..4.+ 16'4(3?6+#686  
8&!8\$\$!\$2616\$&\$7'66&'/'!094+('4/.

14083 14084

PTT & CAT

CAT YAESU OK  
Model FT-857 Cancel

Serial port

Port COM1 \* OK  
Baud rate 9600 Cancel  
Data bits 8  
Parity None  
Stop bits 2  
RTS PTT  
DTR CW + PTT  
Hardware flow control  
CW pitch 800 Hz  
FSK center fq 2210 Hz  
Default digi mode RTTY  
Mouse wheel for tuning Sensitivity, Hz/tick 500

Stessa velocità memorizzata su FT-857

RST: 542 0 copy % 100  
0 | s/n | 60  
Eq: 14.083.968 LSB

RX Sq AFC Lock Snap 2152.0 Hz 45 bd, 170 Hz RTTY 13/03/2013 18:26:37 z

19:26  
13/03/2013



# Configurazione MixW con FT-857D e interface DXD

The screenshot shows the MixW software interface. The 'Configure' menu is open, and the 'Secondary PTT port' option is highlighted with a red arrow. The interface includes a menu bar (File, Edit, Mode, Options, View, Configure), a toolbar with buttons for AutoCQ, CQ, Call 3, Call, and Info, and a table for logging contacts. The main window displays a text area with a message, a frequency display (14083), and a spectrum display. The status bar at the bottom shows the current mode (RTTY), frequency (14083.968), and date/time (13/03/2013 18:26:59).

**Table 1: Contact Log**

QSO	Mode	Freq	Date	UTC
QSO				
QSO				
QSO				
QSO				
1	RTTY	14083	13/03/2013	18:26:59

**Table 2: Contact Details**

Call	RST_Recv	Notes
599		

**Table 3: Status Bar**

RX	Sq	AFC	Lock	Snap	Freq	Mode	Date	Time
					2152,0 Hz	45 bd, 170 Hz	RTTY	13/03/2013 18:26:59 z

# Configurazione MixW con FT-857D e interface DXD

IX0RVI - Current log: MixW2.log(CSV)

File Edit Mode Options View Configure Help

AutoCQ CQ Call 3 Call Info Brag Bye Clear TX RX << >>

	Mode	Freq	Date	UTC	Call	Name	QTH	RST_Sent	RST_Recv	Notes
QSO										
QSO										
QSO										
QSO										
1	RTTY	14083.1	13/03/2013	18:27:29						

04!!)\$?&+4  
04!6'061'48/(.PYGVHMQSDGXPVGS'!26020-+  
37'!966+,244#62/&#!'6#:4?\$8'6!6'76'  
+('('9/\$(80'6?

PTT/CW/TNC Serial port

Port: COM1\*

Baud rate: 9600

Data bits: 8

Parity: None

Stop bits: 2

☐ Echo

☒ Disable device

☐ Hardware flow control

R/S: PTT

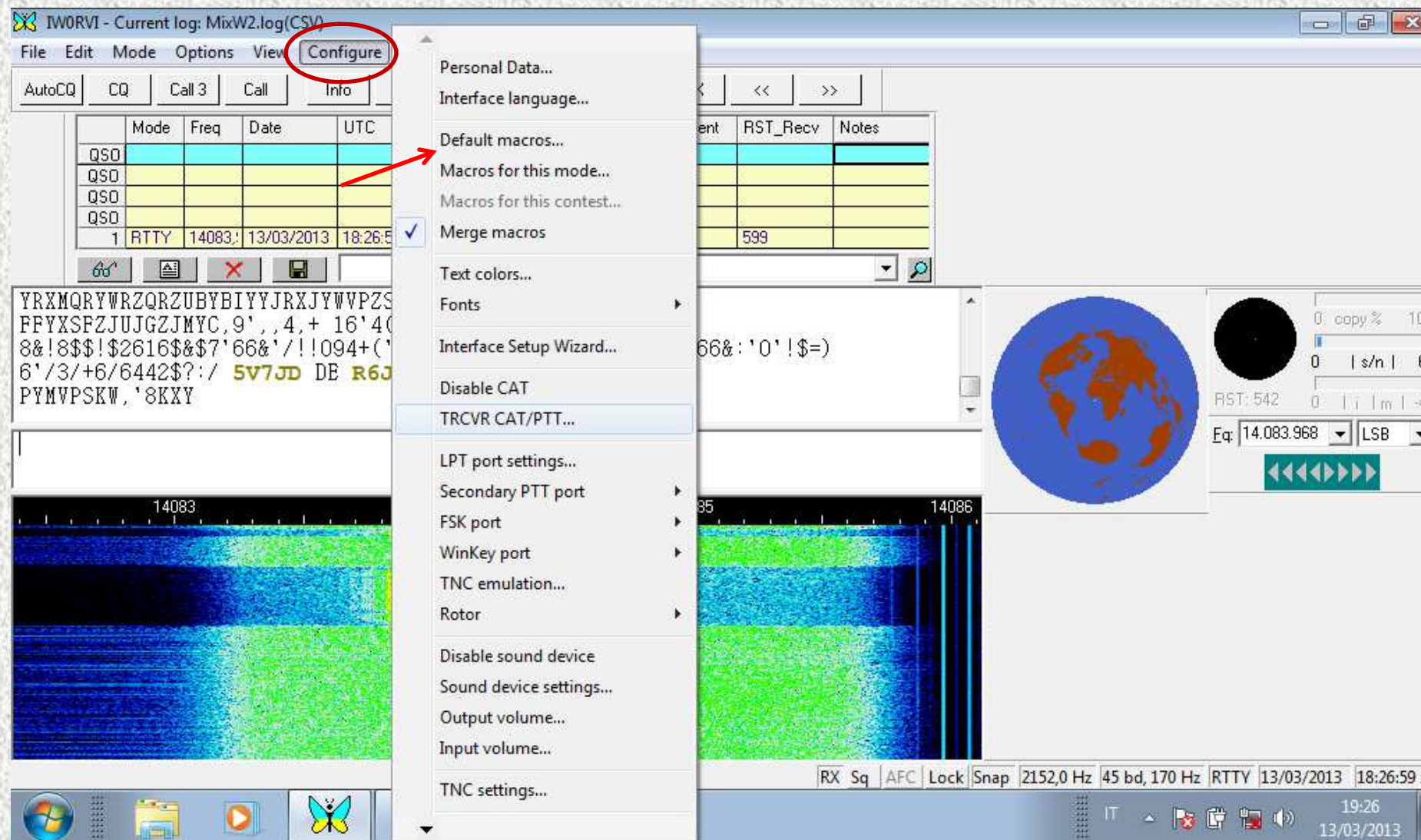
DTR: PTT+CW

RX Sq AFC Lock Snap 2152.0 Hz 45 bd, 170 Hz RTTY 13/03/2013 18:27:29 z

19:27 13/03/2013



# Configurazione MixW con FT-857D e interface DXD



# Configurazione MixW con FT-857D e interface DXD

The screenshot shows the IKOUTM software interface. The main window has a menu bar (File, Edit, Mode, Options, View, Configure, Help) and a toolbar with buttons for CQ gen, Risp gen, Risp call, Only RSQ, RSQ+Per, Conds, Bye SK, RispTest, Thanks, Again, k, and CLEAR. Below the toolbar is a table with columns: Mode, Freq, Date, UTC, Call, Name, QTH, RS, RS1, and Notes. The table contains three rows of QSO data and one row of RTTY data.

	Mode	Freq	Date	UTC	Call	Name	QTH	RS	RS1	Notes
QSO										
QSO										
QSO										
1	RTTY	7040,328	18/03/2013	06:22:48				599	599	

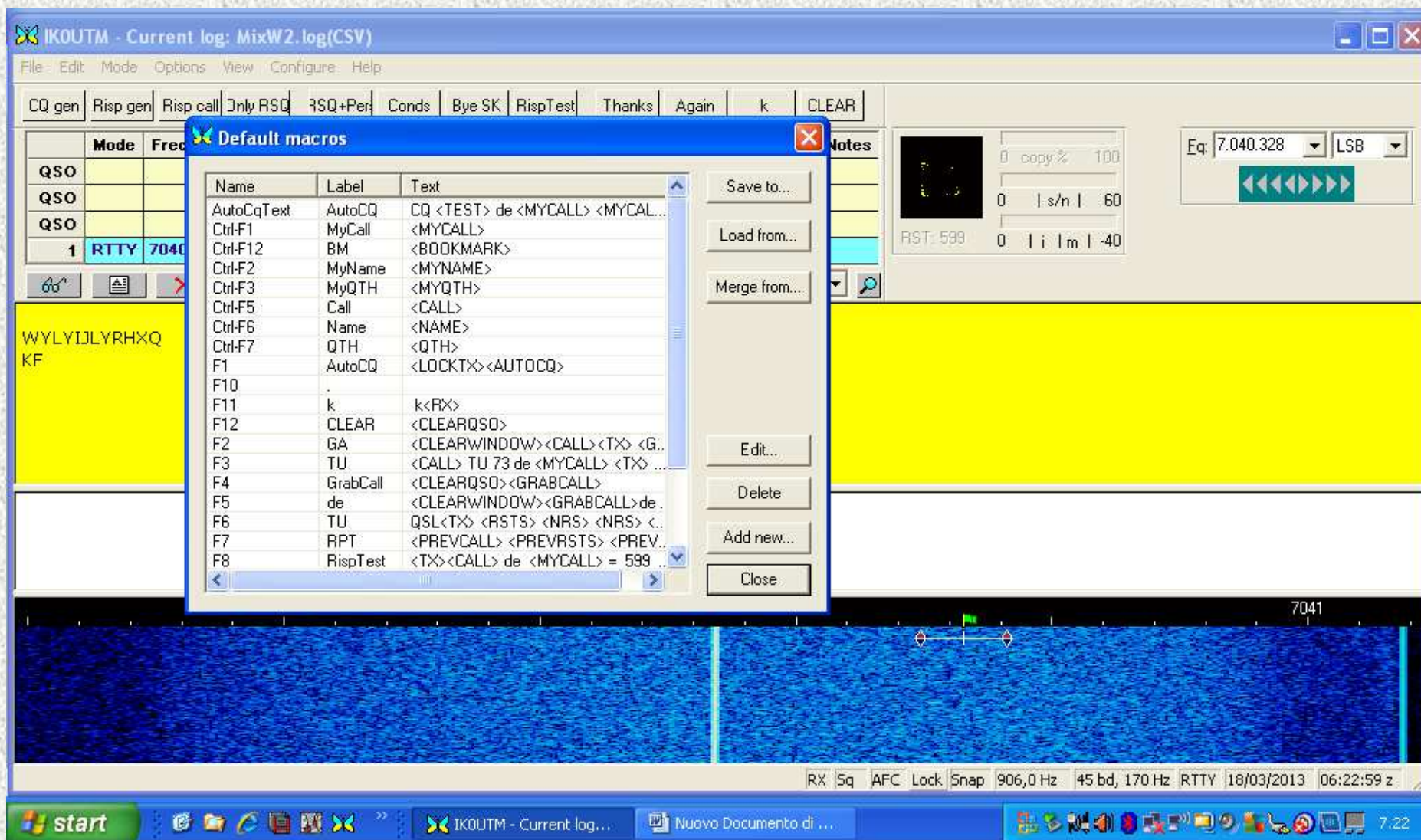
Below the table is a toolbar with buttons for a microphone, a speaker, a red X, and a save icon. To the right of the table is a control panel with a frequency display (7040.328), a mode dropdown (LSB), and a copy percentage slider (0 to 100). Below the frequency display is a signal-to-noise ratio (s/n) display (0 to 60) and a signal-to-interference ratio (i/m) display (0 to -40). The status bar at the bottom shows RX, Sq, AFC, Lock, Snap, 906,0 Hz, 45 bd, 170 Hz, RTTY, 18/03/2013, 06:22:48 z.

A dialog box titled "Filename for Default macros" is open in the center of the screen. It has a text field for "Filename" containing "plicazioni\MixW\contest.mc" and buttons for "Edit...", "OK", and "Cancel".

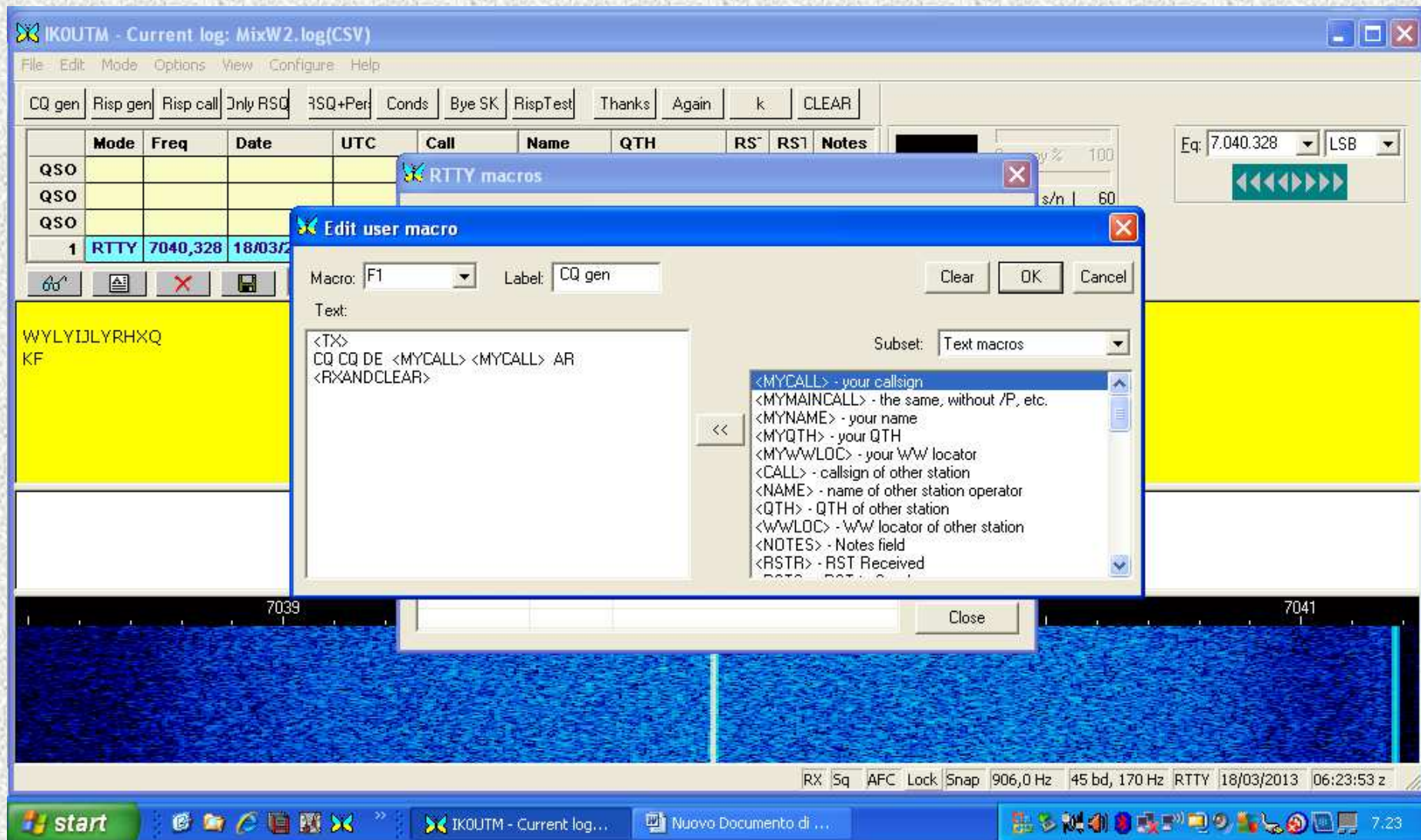
The bottom of the screen shows a Windows taskbar with the Start button and several open applications, including IKOUTM - Current log... and Nuovo Documento di ...



# Configurazione MixW con FT-857D e interface DXD



# Configurazione MixW con FT-857D e interface DXD





# Configurazione MixW con FT-857D e interface DXD

The screenshot shows the IKOUTM software interface. At the top, the title bar reads "IKOUTM - Current log: MixW2.log(CSV)". Below it is a menu bar with "File", "Edit", "Mode", "Options", "View", "Configure", and "Help". A row of buttons includes "CQ gen", "Risp gen", "Risp call", "Only RSQ", "RSQ+Per", "Conds", "Bye SK", "RispTest", "Thanks", "Again", "k", and "CLEAR".

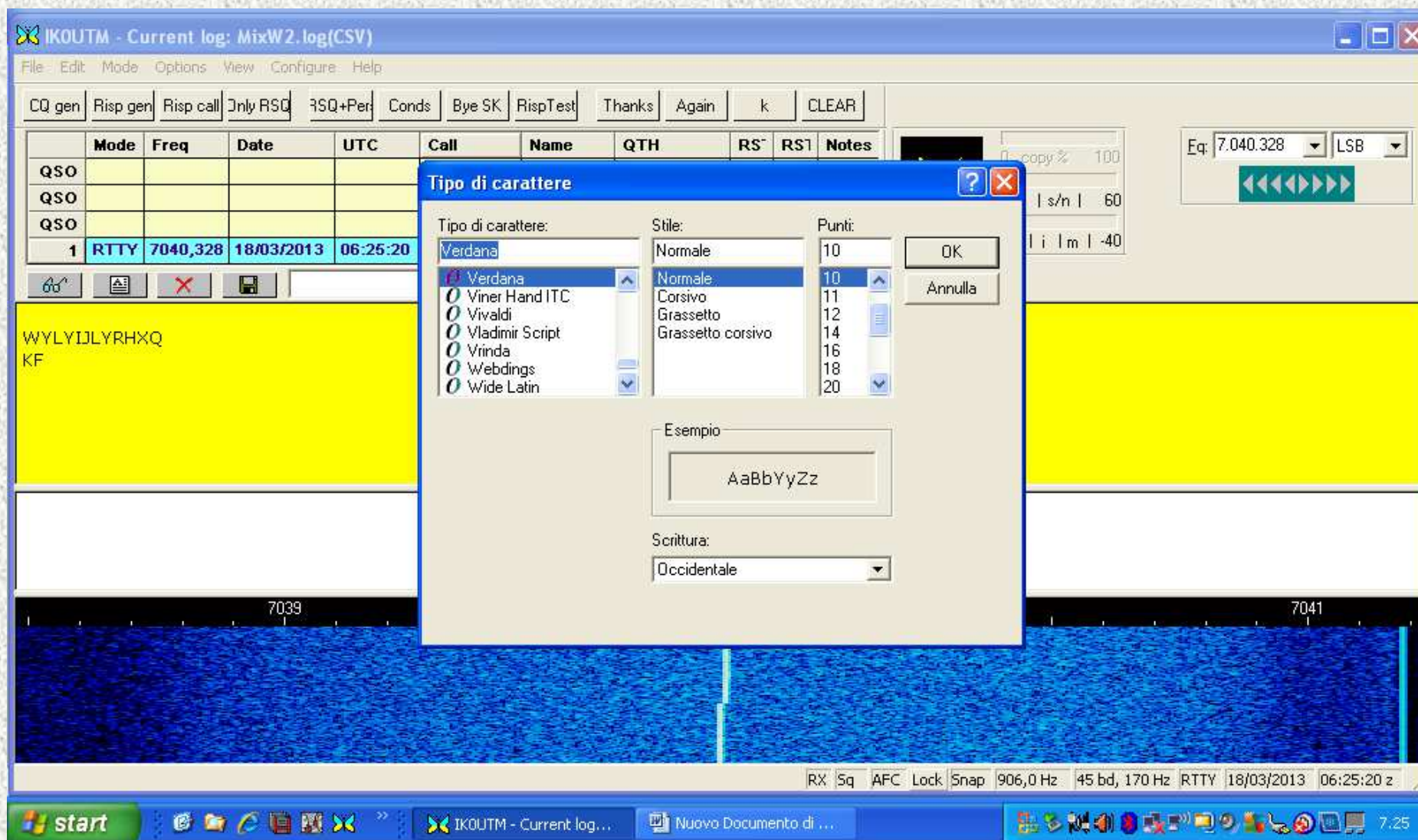
A log table is visible with the following columns: Mode, Freq, Date, UTC, Call, Name, QTH, RS, RS1, and Notes. The table contains three rows of "QSO" data and one row highlighted in blue with the following values: Mode: RTTY, Freq: 7040,328, Date: 18/03/2013, UTC: 06:25:04, Call: (empty), Name: (empty), QTH: (empty), RS: (empty), RS1: (empty), Notes: (empty).

A "Text colors" dialog box is open in the center, showing a list of items to be configured: RX pane, Background, Received text, Transmitted text, Your own call, New call, New country, New multiplier, New WPX, QSO before, Keyboard pane, Background, Text, RX windows, Background, Text, Log bar, Background, Highlighted row, and Text. The "Selected color" is set to yellow, and a "Preview" section shows a yellow sample.

On the right side, there are controls for frequency (7.040.328), mode (LSB), and a "copy % 100" slider. Below these are buttons for "copy", "s/n", and "i/m".

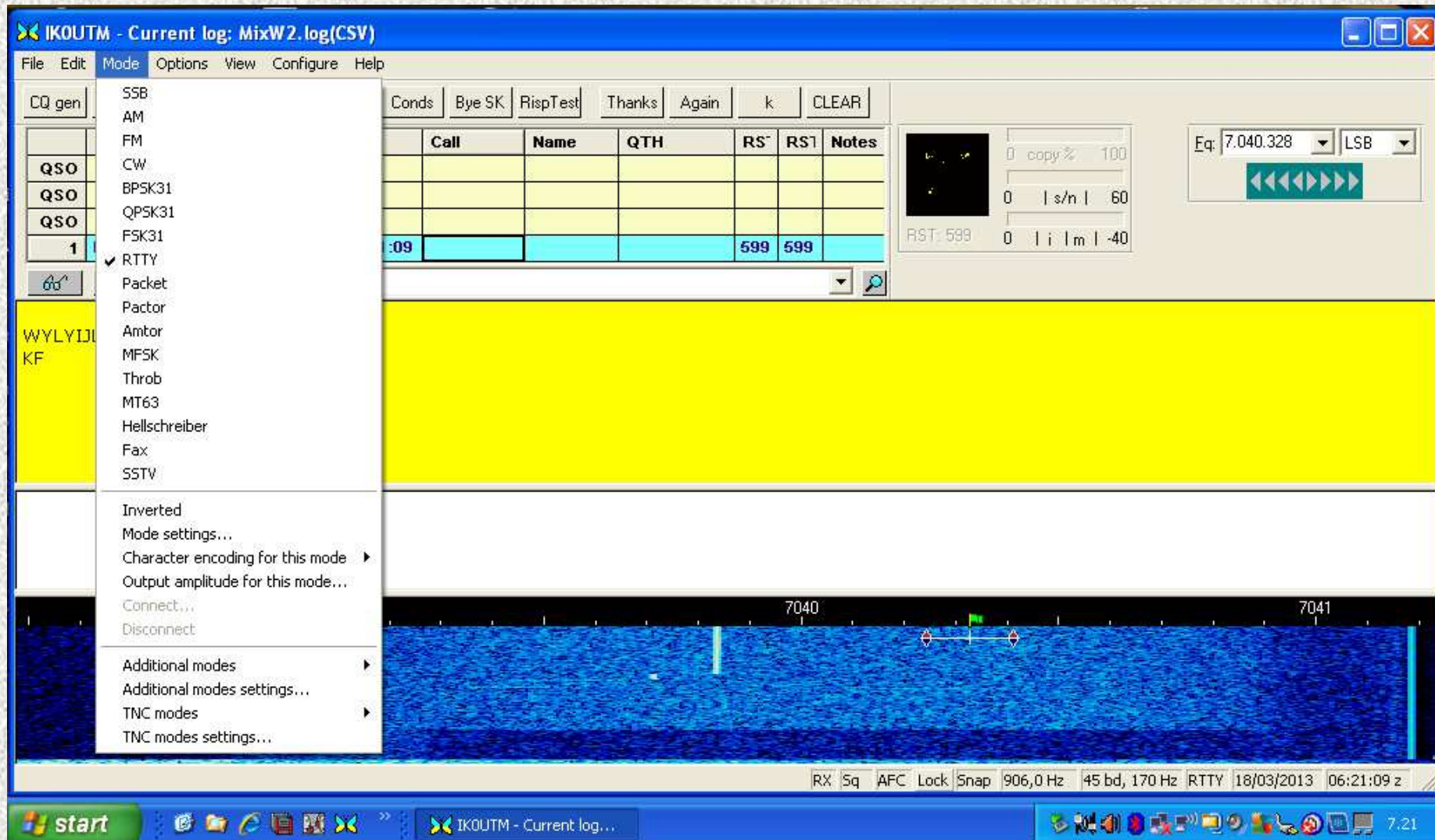
At the bottom, a spectrum display shows a blue background with a vertical line at 7039 and a horizontal line at 7041. The status bar at the very bottom displays "RX Sq AFC Lock Snap 906,0 Hz 45 bd, 170 Hz RTTY 18/03/2013 06:25:04 z".

# Configurazione MixW con FT-857D e interface DXD





# Configurazione MixW con FT-857D e interface DXD



# Configurazione MixW con FT-857D e interface DXD





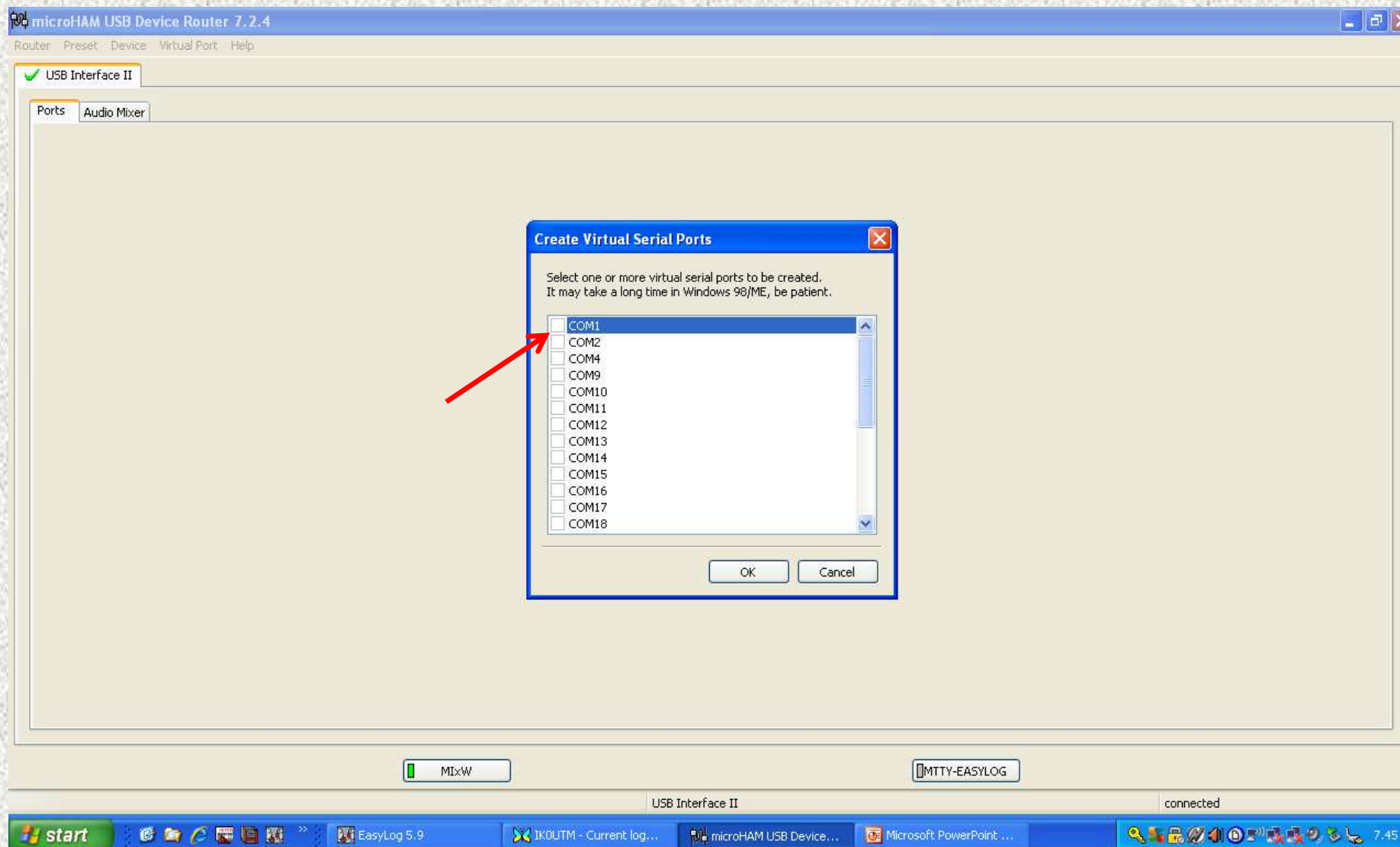
# Microham USB Interface II



**Impostare la 'ponticellatura' a seconda del modello di RTX che verrà collegato**

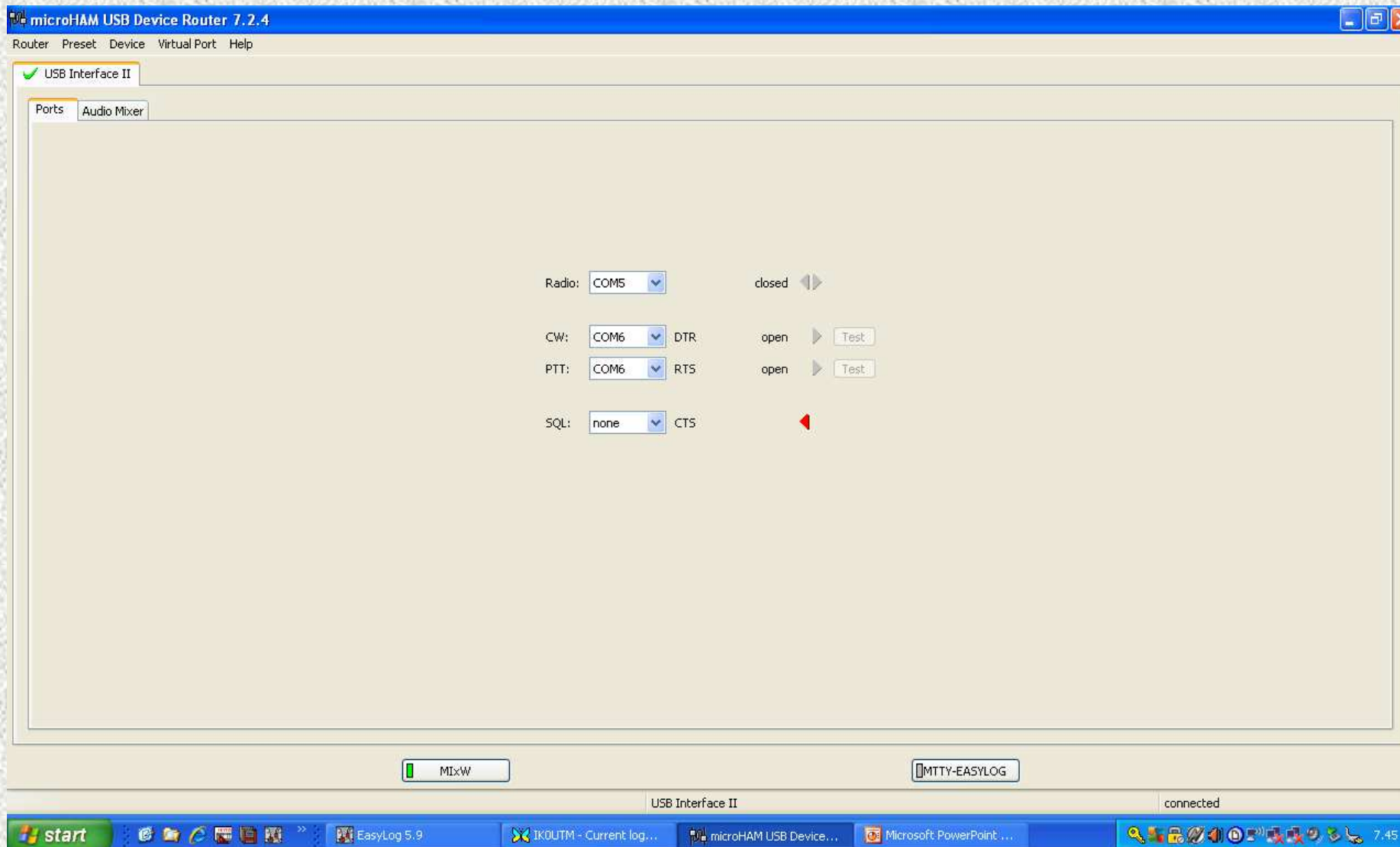
**(FUNZIONAMENTO DEL CAT)**

# Microham USB Interface II - configurazione

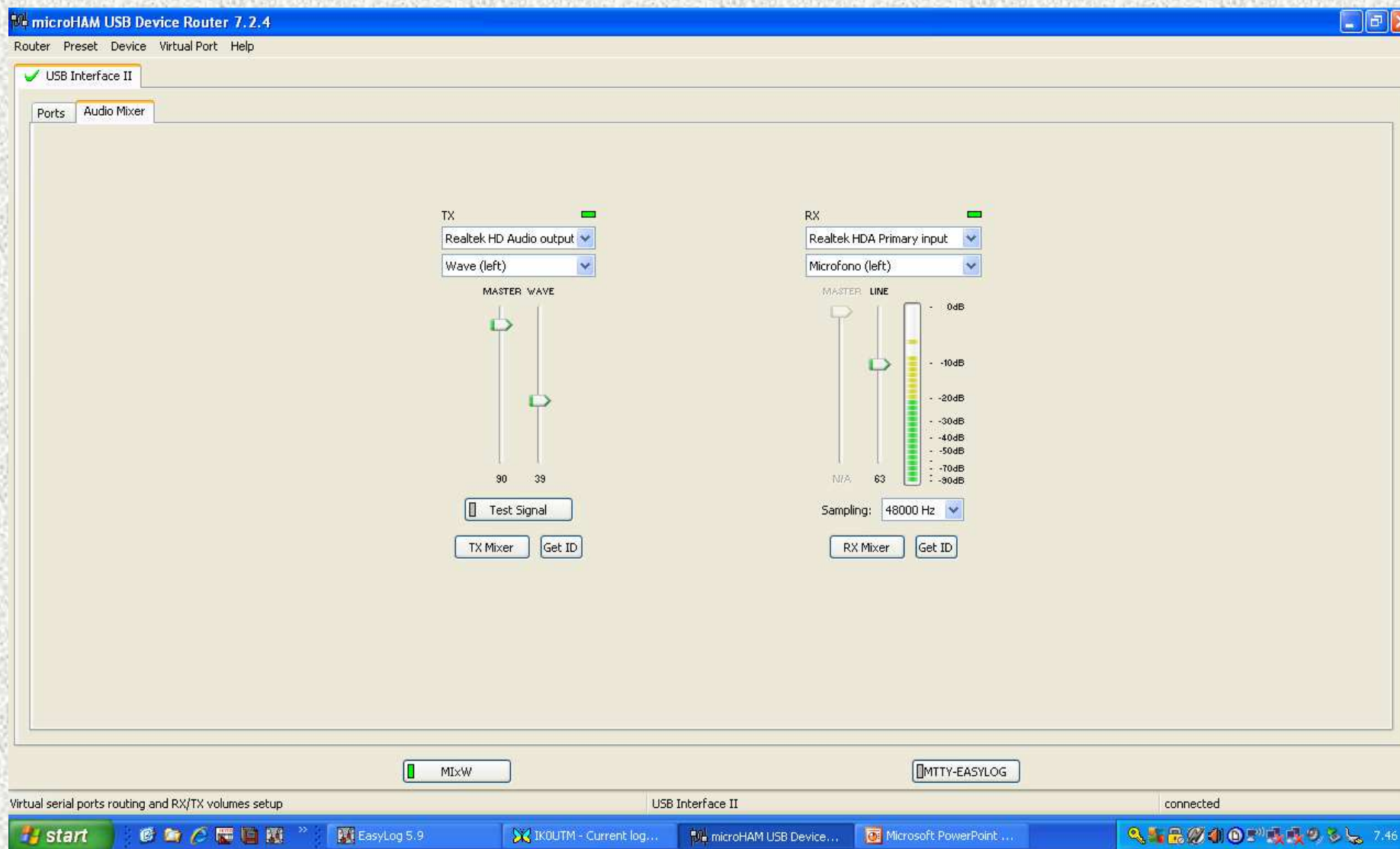




# Microham USB Interface II - configurazione

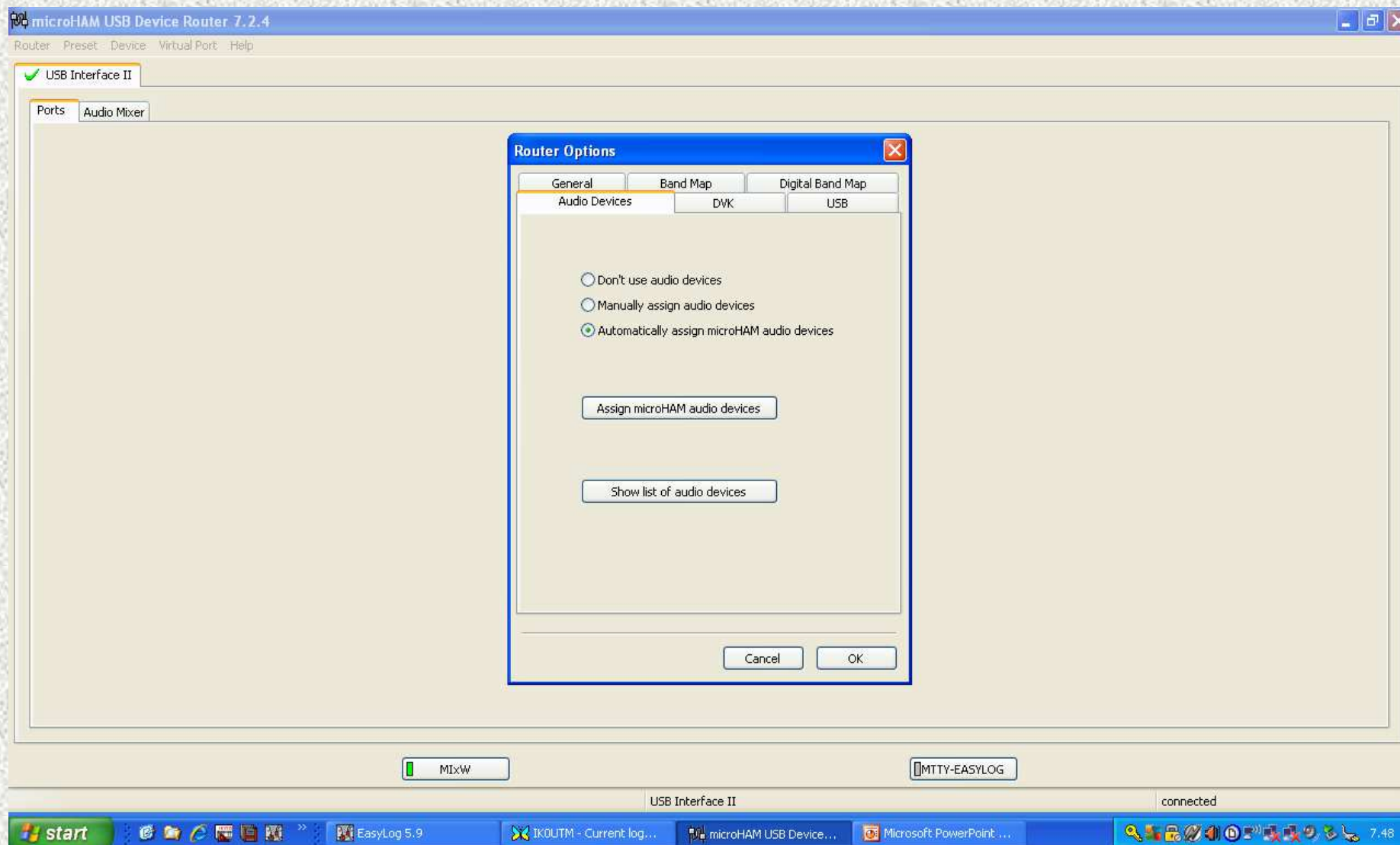


# Microham USB Interface II - configurazione





# Microham USB Interface II - configurazione



# Microham USB Interface II - configurazione





# ICOM IC-756 PRO III e Microham USB II



**Azzerare il guadagno  
microfonico**

**Azzerare il compressore  
audio**

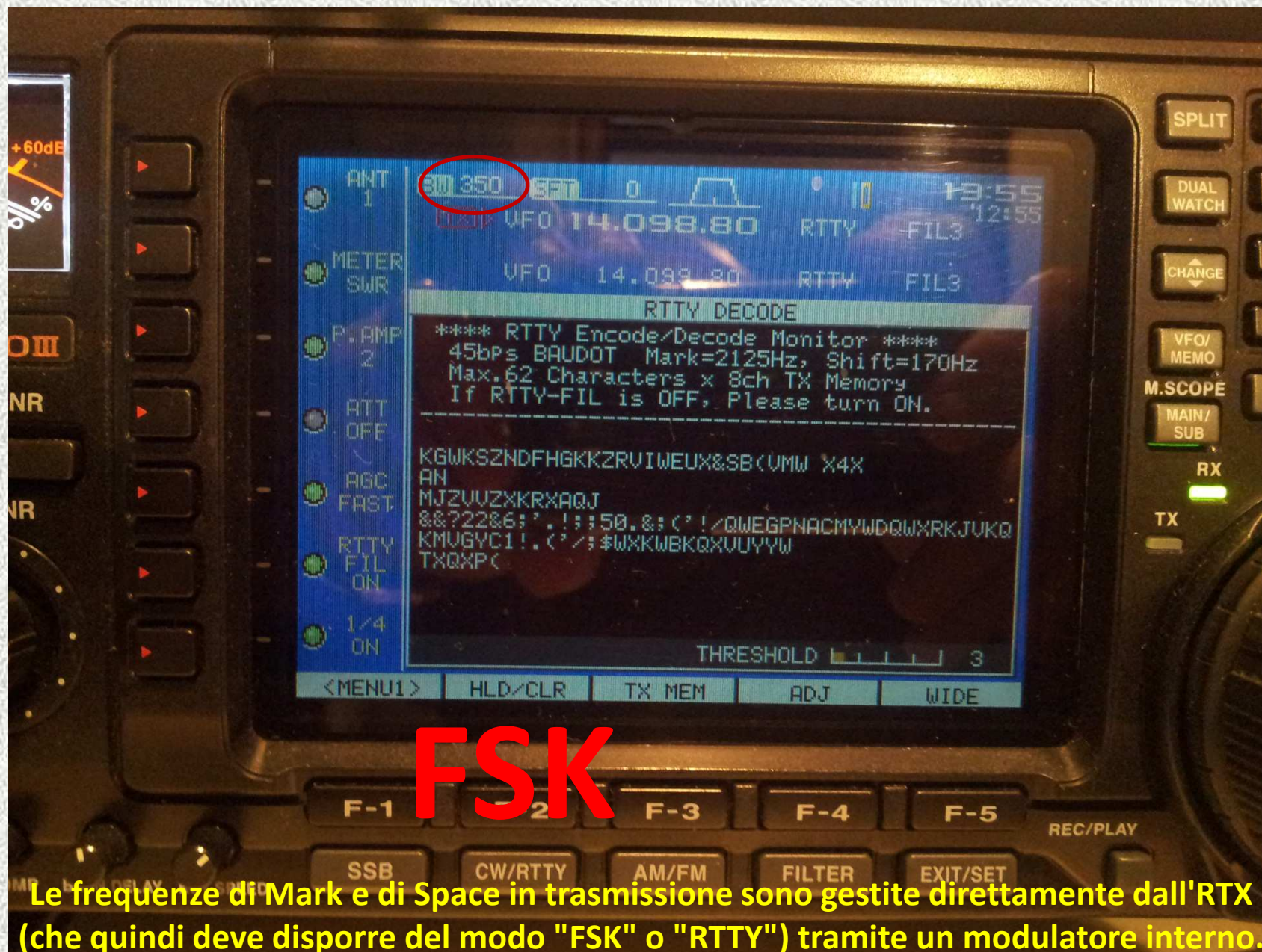
## FSK o AFSK ?

Frequency Shift Keying





# ICOM IC-756 PRO III





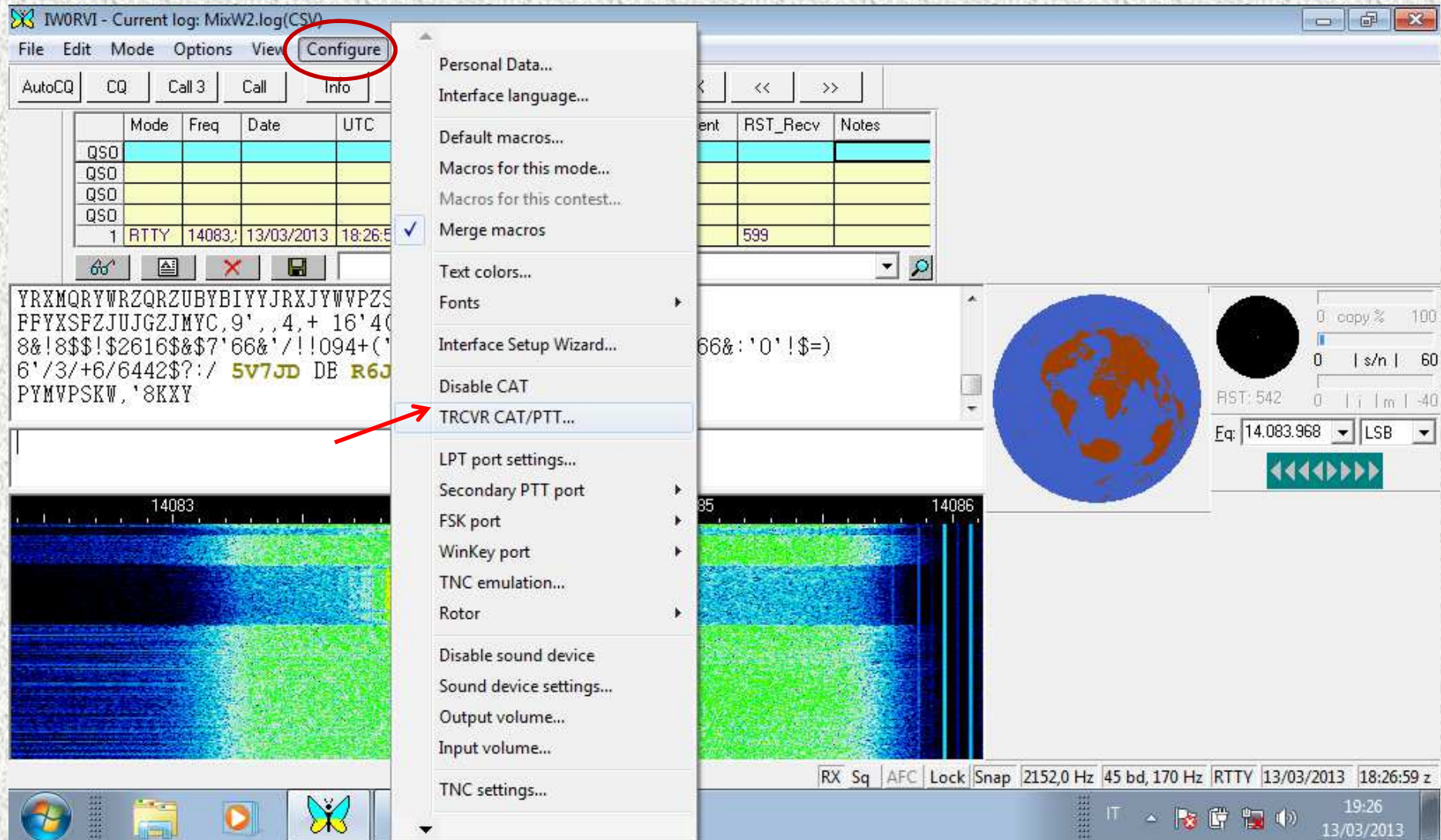
# ICOM IC-756 PRO III

Nell'AFSK (Audio FSK) invece, la gestione del mark e dello space sono demandati ad un oscillatore audio esterno all'RTX (scheda audio e software su PC)



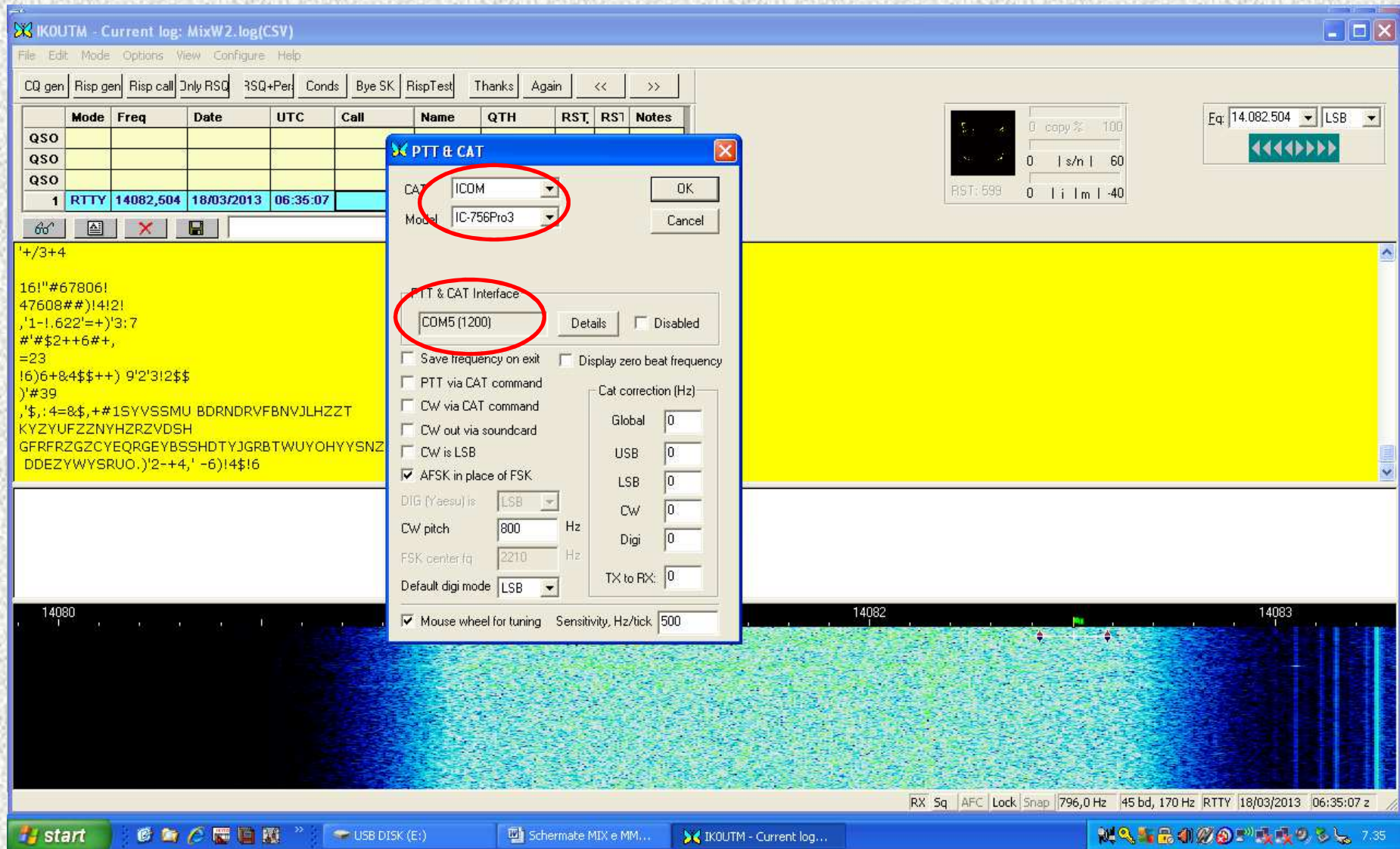


# ICOM IC-756 PRO III e Microham USB II





# ICOM IC-756 PRO III e Microham USB II



# ICOM IC-756 PRO III e Microham USB II

IKOUTM - Current log: MixW2.log(CSV)

File Edit Mode Options View Configure Help

CQ gen Risp gen Risp call Only RSQ RSQ+Per Conds Bye SK RispTest Thanks Again << >>

	Mode	Freq	Date	UTC	Call	Name	QTH	RST	RS1	Notes
QSO										
QSO										
QSO										
1	RTTY	14082,504	18/03/2013	06:35:27						

PTT & CAT

CAT: ICOM OK

Model: IC-756Pro3 Cancel

Serial port

Port: COM5 \* OK

Baud rate: 1200 Cancel

Data bits: 8

Parity: None

Stop bits: 2

RTS: PTT

DTR: CW

Hardware flow control

LW pitch: 800 Hz

FSK center fq: 2210 Hz

Default digi mode: LSB

Mouse wheel for tuning Sensitivity, Hz/tick: 500

Digi: 0

TX to RX: 0

Eq: 14.082.504 LSB

RST: 599

0 copy % 100

0 | s/n | 60

0 | i | m | -40

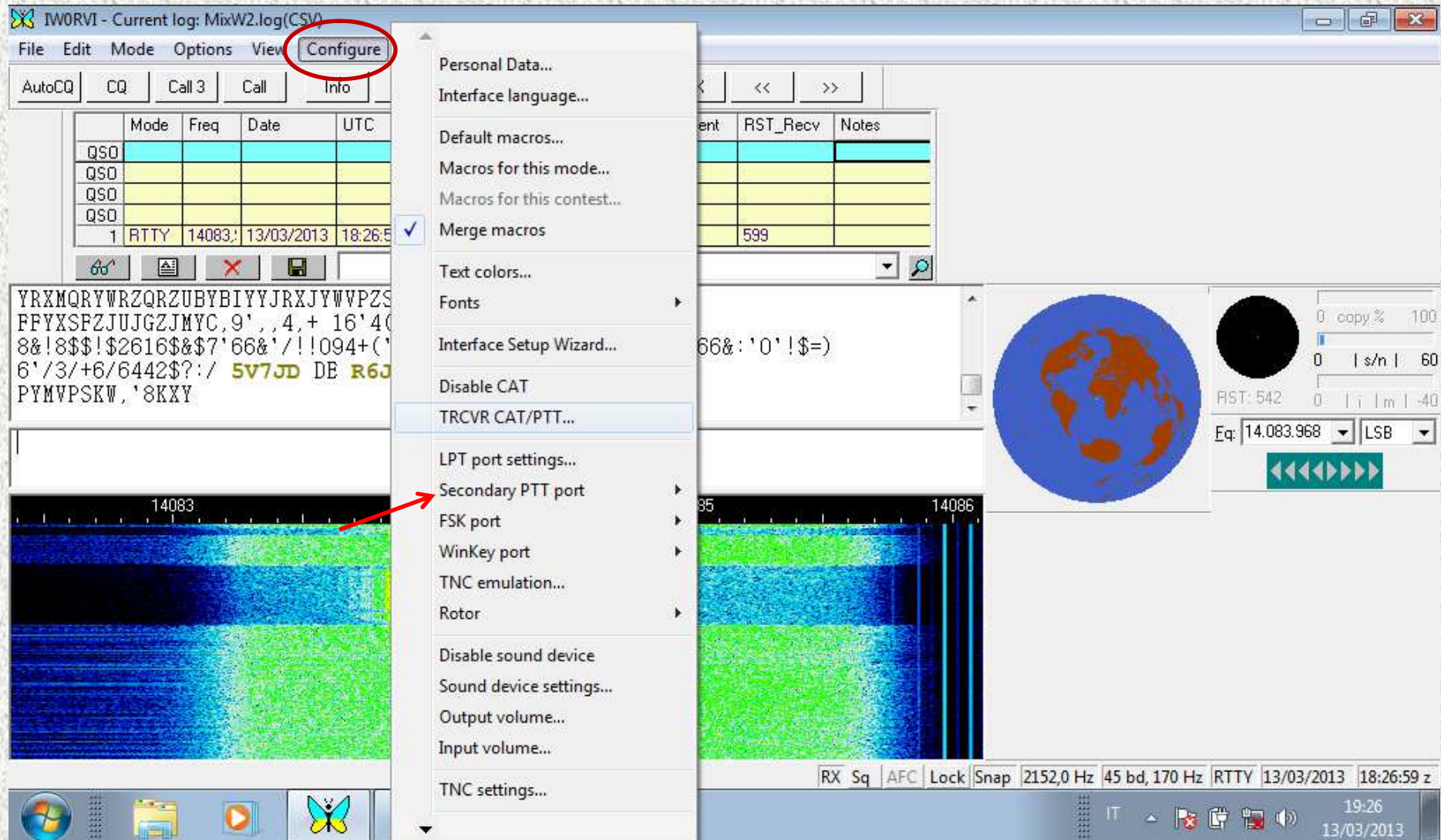
14080 14082 14083

RX Sq AFC Lock Snap 796,0 Hz 45 bd, 170 Hz RTTY 18/03/2013 06:35:27 z

start USB DISK (E:) Schermate MIX e MM... IKOUTM - Current log... 7:35



# ICOM IC-756 PRO III e Microham USB II



# ICOM IC-756 PRO III e Microham USB II

IKOUTM - Current log: MixW2.log(CSV)

File Edit Mode Options View Configure Help

CQ gen Risp gen Risp call Only RSQ RSQ+Per Conds Bye SK RispTest Thanks Again << >>

	Mode	Freq	Date	UTC	Call	Name	QTH	RST	RST	Notes
QSO										
QSO										
QSO										
1	RTTY	14082,504	18/03/2013	06:36:47				599	599	

0 copy % 100  
0 | s/n | 60  
RST: 599 0 | i | m | -40

Eq: 14.082.504 LSB  
◀◀◀◀▶▶▶▶▶

89  
6?)\$+  
\$  
(  
4688&\$6\$\$76JLSYYSBDWAUISLRIFKEHSRRU NE JYYVESWCZZUJNYENIEZ  
\$:YYAYZQ)6?-'?4)6+'6\$6 828466  
'3?2  
6BRP WHCHNB  
HYDRZ  
FNWBEHJDHEYDF  
Y  
ZZJ XNIO\$6')!&85,&,+69#'#)6\$\$814?--:9''')364# 002+04  
8\$6'743+38\$'2'4',#26+

PTT/CW/TNC Serial port

Port: COM6 \*  
Baud rate: 9600  
Data bits: 8  
Parity: None  
Stop bits: 1  
Echo  
Disable device  
Hardware flow control

RTS: PTT  
LTR: CW

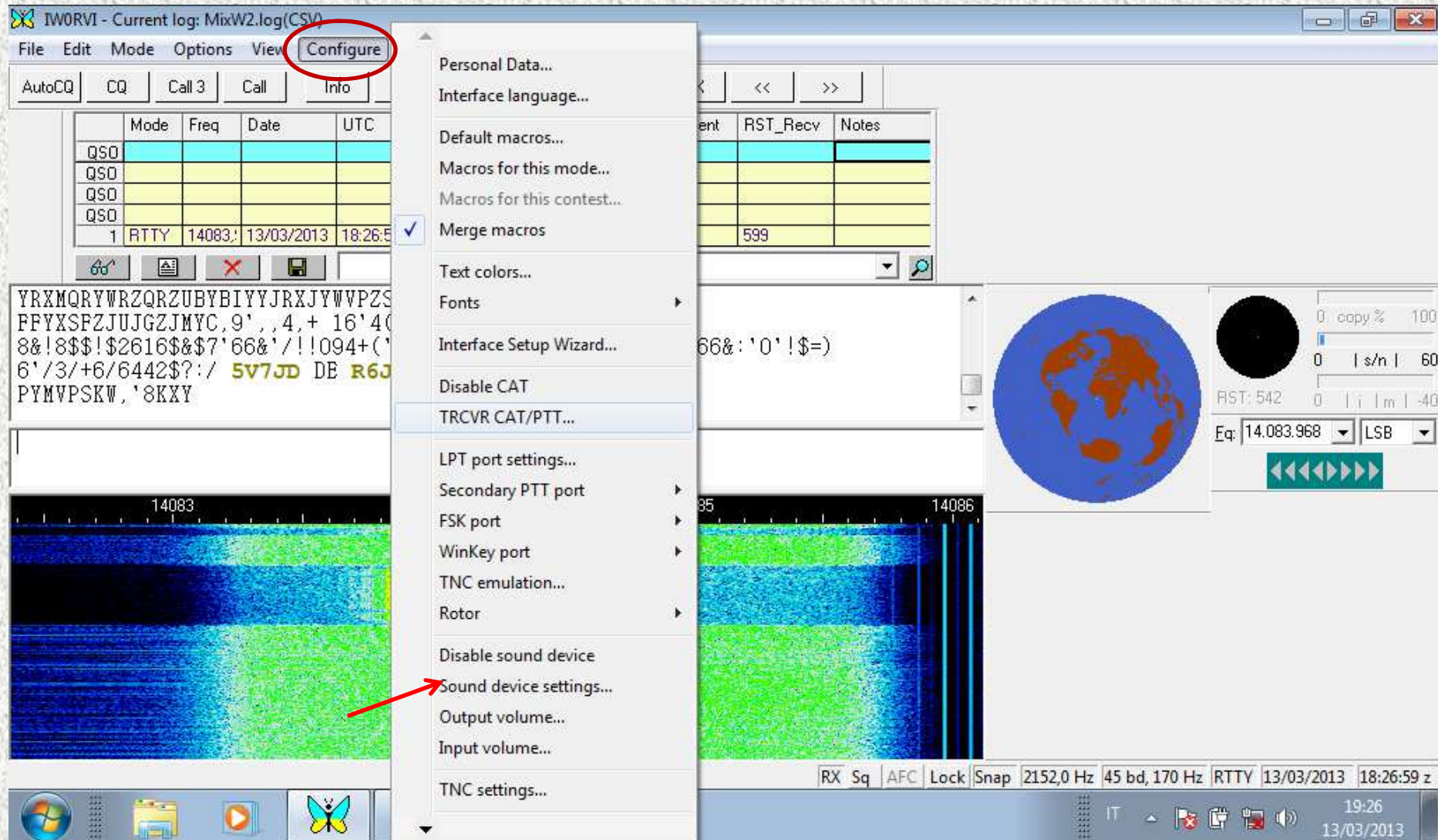
14080 14081 14082 14083

RX Sq AFC Lock Snap 796,0 Hz 45 bd, 170 Hz RTTY 18/03/2013 06:36:47 z

start USB DISK (E:) Schermate MIX e MM... IKOUTM - Current log... 7.36



# ICOM IC-756 PRO III e Microham USB II



# ICOM IC-756 PRO III e Microham USB II

IKOUTM - Current log: MixW2.log(CSV)

File Edit Mode Options View Configure Help

CQ gen Risp gen Risp call Only RSQ RSQ+Per Conds Bye SK RispTest Thanks Again << >>

	Mode	Freq	Date	UTC	Call	Name	QTH	RST	RS	Notes
QSO										
QSO										
QSO										
1	RTTY	14082,504	18/03/2013	06:37:28				599	599	

Eq: 14.082.504 LSB

0 copy % 100

0 | s/n | 60

RST: 599 0 | i | m | -40

Sound Device Settings

Device: Sound card (internal or external) OK

Input: Realtek HDA Primary input Cancel

Output: Realtek HD Audio output Calibrate...

Samplerate: 11025

Clock adjustment, ppm:

RX: 0 TX: 11012

Sound history: 20 sec

Spectrum speed: Slow

DSP filter: None

FFT window: Cosine

Full duplex ☐ Disabled ☐

Audio processing: Message-based (standard)

.#

,9(2#/+ \$143

?,26'

-\$:3693+2+ )4?5#+6

/\$36/314-38.66+1+

'7'\$"0!-#256?'4\$+\$8

52'4\$ \$2

) +2

5\$ #. \$ #

'6 8#&'96\$3'3#'722,='5476710#

'(0

0

+

14080 14081 14083

RX 5q AFC Lock Snap 796,0 Hz 45 bd, 170 Hz RTTY 18/03/2013 06:37:28 z

start USB DISK (E:) Schermate MIX e MM... IKOUTM - Current log... 7.37



# ICOM IC-756 PRO III e Microham USB II



**Q&A**  
*You have*  
**Questions**  
*We have*  
**Answers**

# YAESU FT-1000 MP



Azzerare il  
guadagno  
microfonico

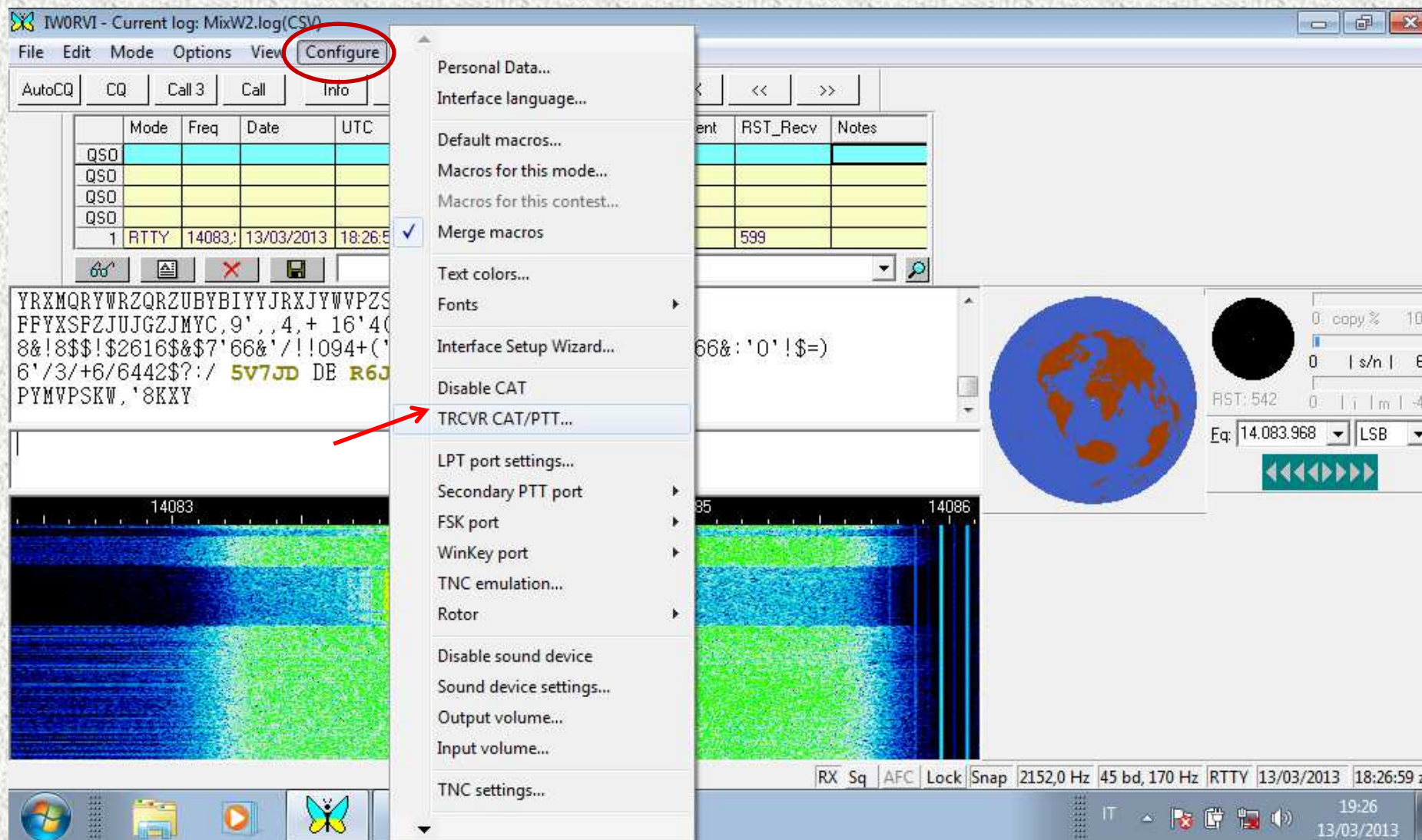
Azzerare il  
compressore audio

AFSK





# YAESU FT-1000MP e Microham USB II



# YAESU FT-1000MP e Microham USB II

IKOUTM - Current log: MixW2.log(CSV)

File Edit Mode Options View Configure Help

CQ gen Risp gen Risp call Only RSQ RSQ+Per Conds Bye S

QSO	Mode	Freq	Date	UTC	Call
QSO					
QSO					
QSO					
1	RTTY	7040,328	18/03/2013	06:48:20	

YZ SIIPH

7039

7041

7.48

PTT & CAT

CAT: YAESU  
Model: FT-1000mp

PTT & CAT Interface  
COM5 (4800) Details Disabled

☐ Save frequency on exit ☐ Display zero beat frequency

☐ PTT via CAT command  
☐ CW via CAT command  
☐ CW out via soundcard  
☐ CW is LSB

☒ AFSK in place of FSK

DIG (Yaesu) is: LSB

CW pitch: 800 Hz

FSK center fq: 2210 Hz

Default digi mode: LSB

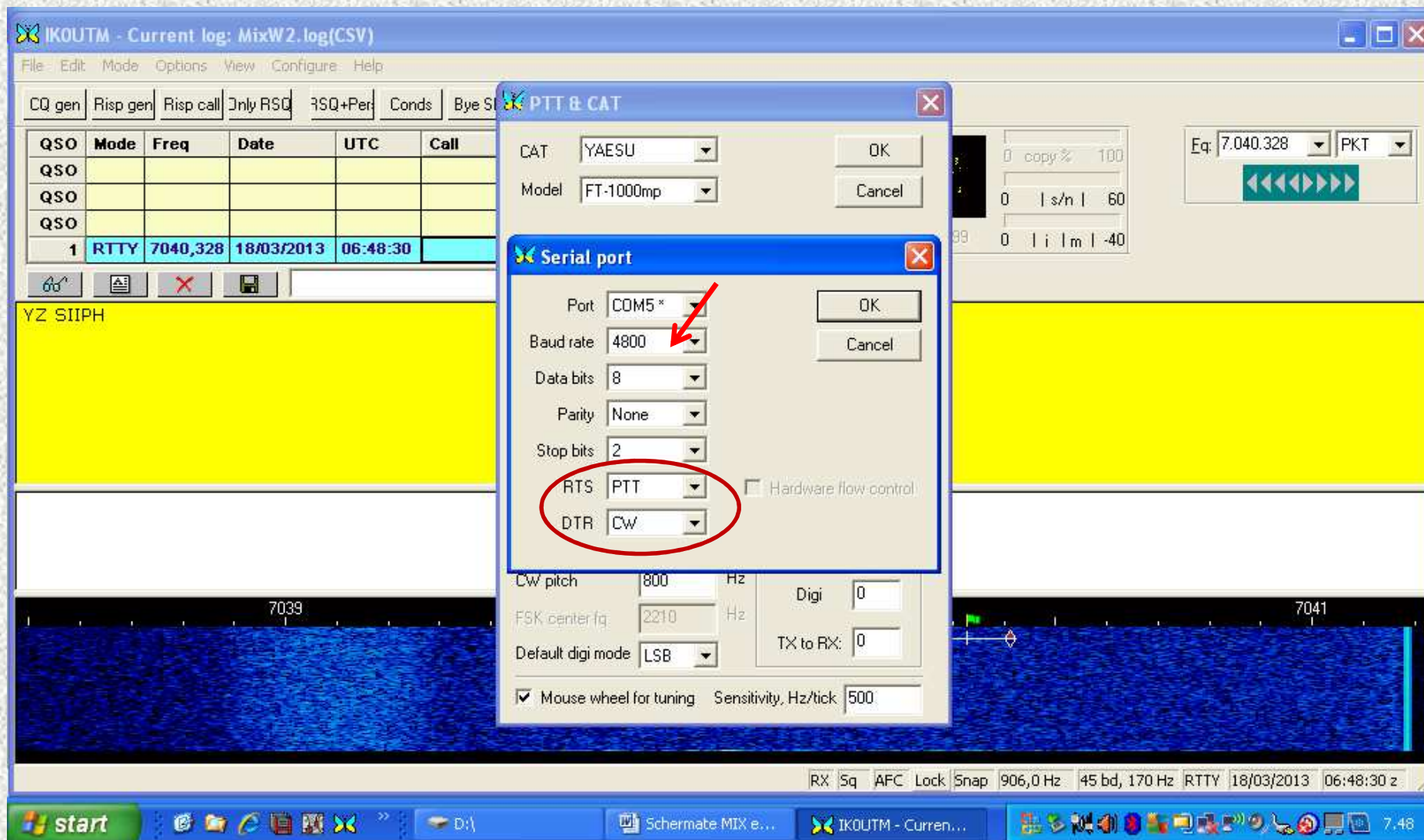
☒ Mouse wheel for tuning Sensitivity, Hz/tick: 500

Cat correction (Hz)  
Global: 0  
USB: 0  
LSB: 0  
CW: 0  
Digi: 0  
TX to RX: 0

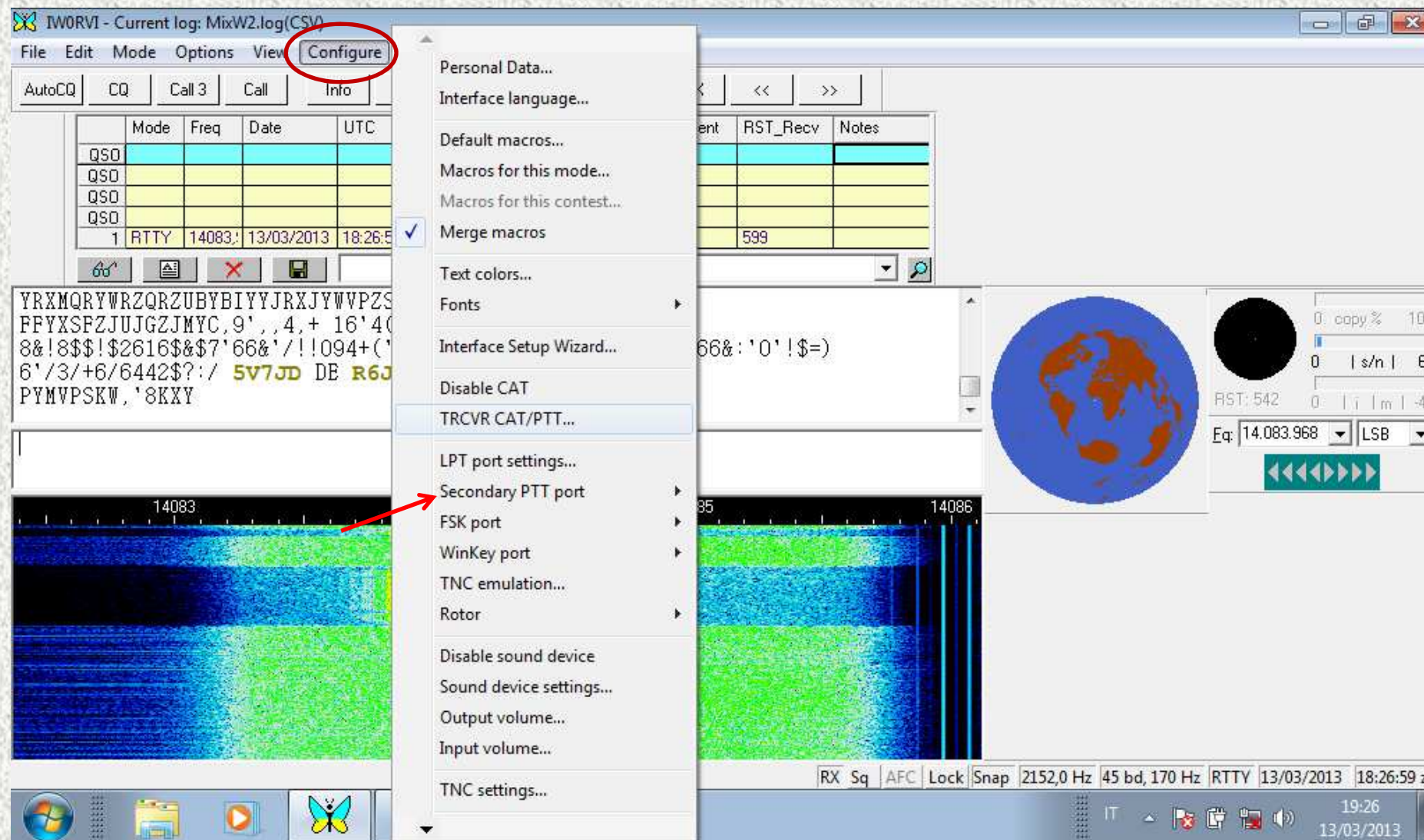
RX Sq AFC Lock Snap 906,0 Hz 45 bd, 170 Hz RTTY 18/03/2013 06:48:20 z



# YAESU FT-1000MP e Microham USB II

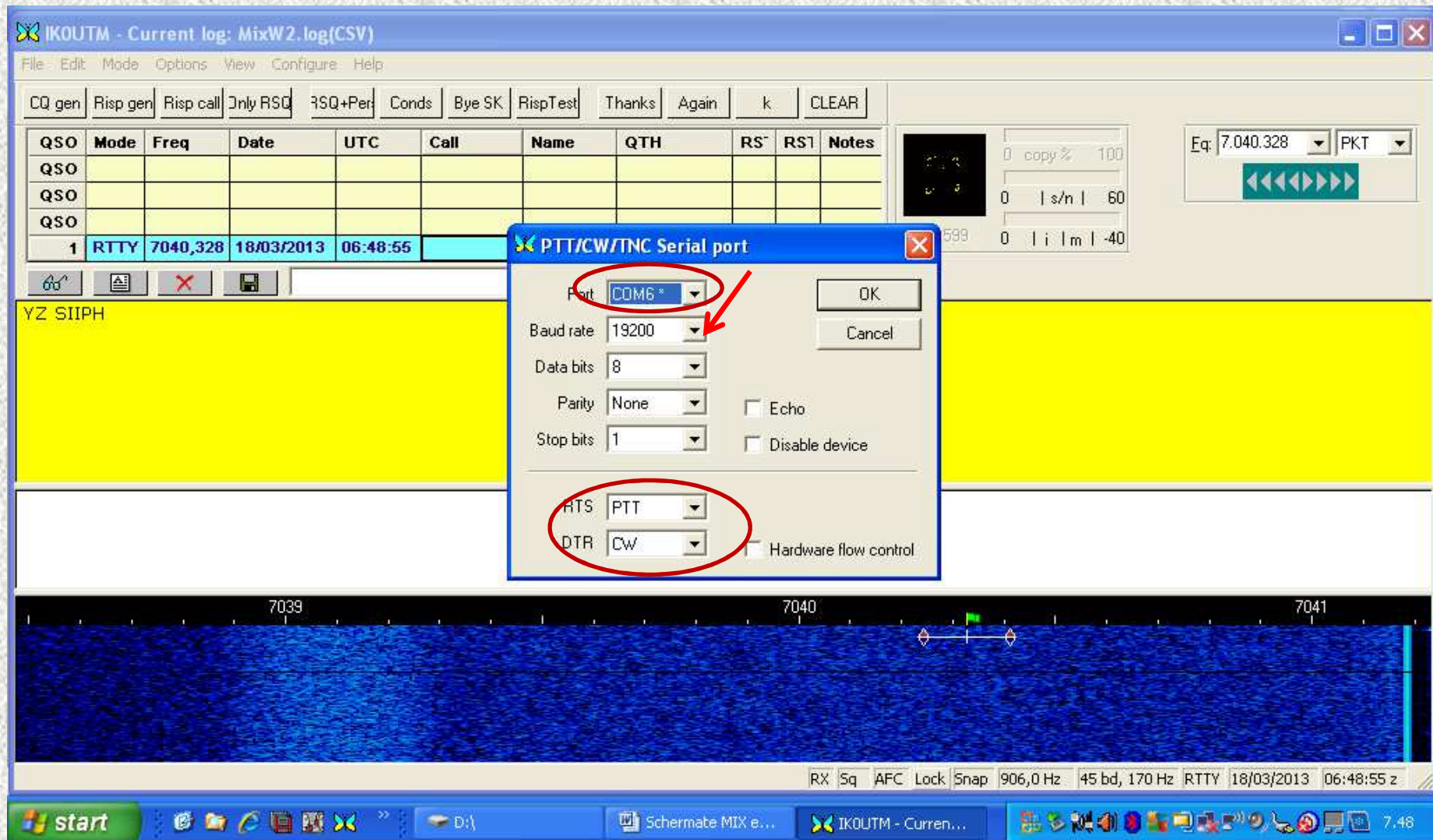


# YAESU FT-1000MP e Microham USB II





# YAESU FT-1000MP e Microham USB II



# YAESU FT-1000MP e Microham USB II

The screenshot displays the ICOM-7300 software interface. The 'Configure' menu is open, showing various settings options. A red circle highlights the 'Configure' button in the top menu bar, and a red arrow points to the 'Sound device settings...' option in the 'Configure' menu.

**Menu Items:**

- Personal Data...
- Interface language...
- Default macros...
- Macros for this mode...
- Macros for this contest...
- Merge macros
- Text colors...
- Fonts
- Interface Setup Wizard...
- Disable CAT
- TRCVR CAT/PTT...
- LPT port settings...
- Secondary PTT port
- FSK port
- WinKey port
- TNC emulation...
- Rotor
- Disable sound device
- Sound device settings...
- Output volume...
- Input volume...
- TNC settings...

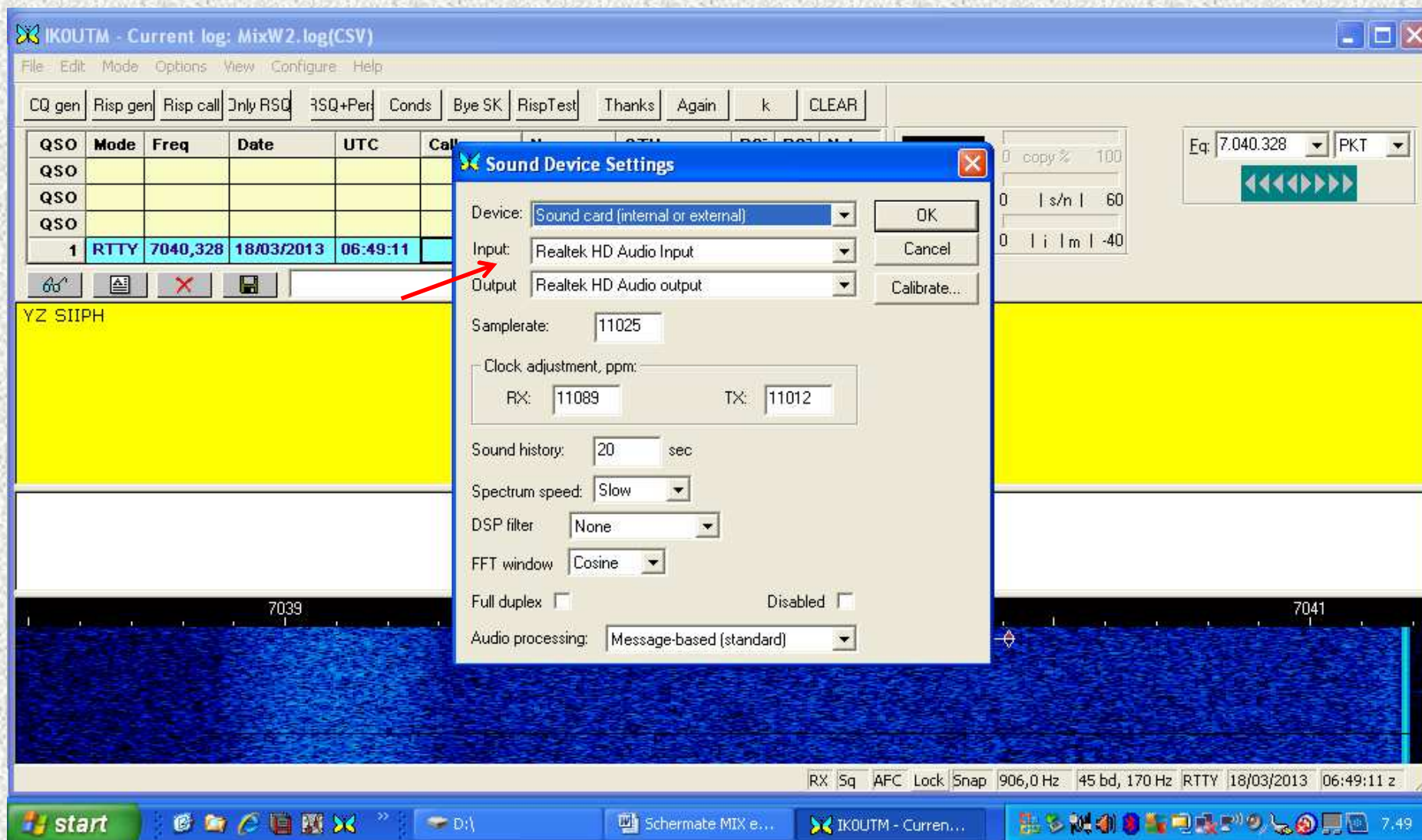
**Background Interface Elements:**

- Top Bar:** File Edit Mode Options View **Configure**
- Buttons:** AutoCQ CQ Call 3 Call Info
- Table:**

	Mode	Freq	Date	UTC
QSO				
QSO				
QSO				
QSO				
1	RTTY	14083	13/03/2013	18:26:5
- Text Area:** YRXMQRYWRZQRZUBBYBIYYJRXJYWPZS  
FFYXSFZJUJGZJMYC,9',,4,+ 16'40  
8&|8\$\$!\$2616\$&\$7'66&'!|094+(  
6'/3/+6/6442\$?:/ 5V7JD DE R6J  
PYMVPSKW,'8KXY
- Frequency Display:** 14083
- Waveform Display:** Spectrum plot showing signal activity.
- Right Panel:** RST\_Recv Notes table, a globe icon, and a circular progress indicator.
- Bottom Bar:** RX Sq AFC Lock Snap 2152,0 Hz 45 bd, 170 Hz RTTY 13/03/2013 18:26:59 z



# YAESU FT-1000MP e Microham USB II



# YAESU FT-1000MP e Microham USB II

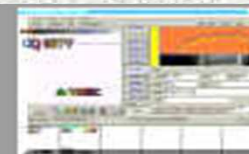




# MMTTY

**MM HAMSOFT**

Site Provided by [VE5KC](#) & [Kteck Webs](#)



## Download Manager

Increases download speed with built-in download logic accelerator, resume and schedule downloads

Advertisement

## MMTTY BY JE3HHT - Makoto Mori

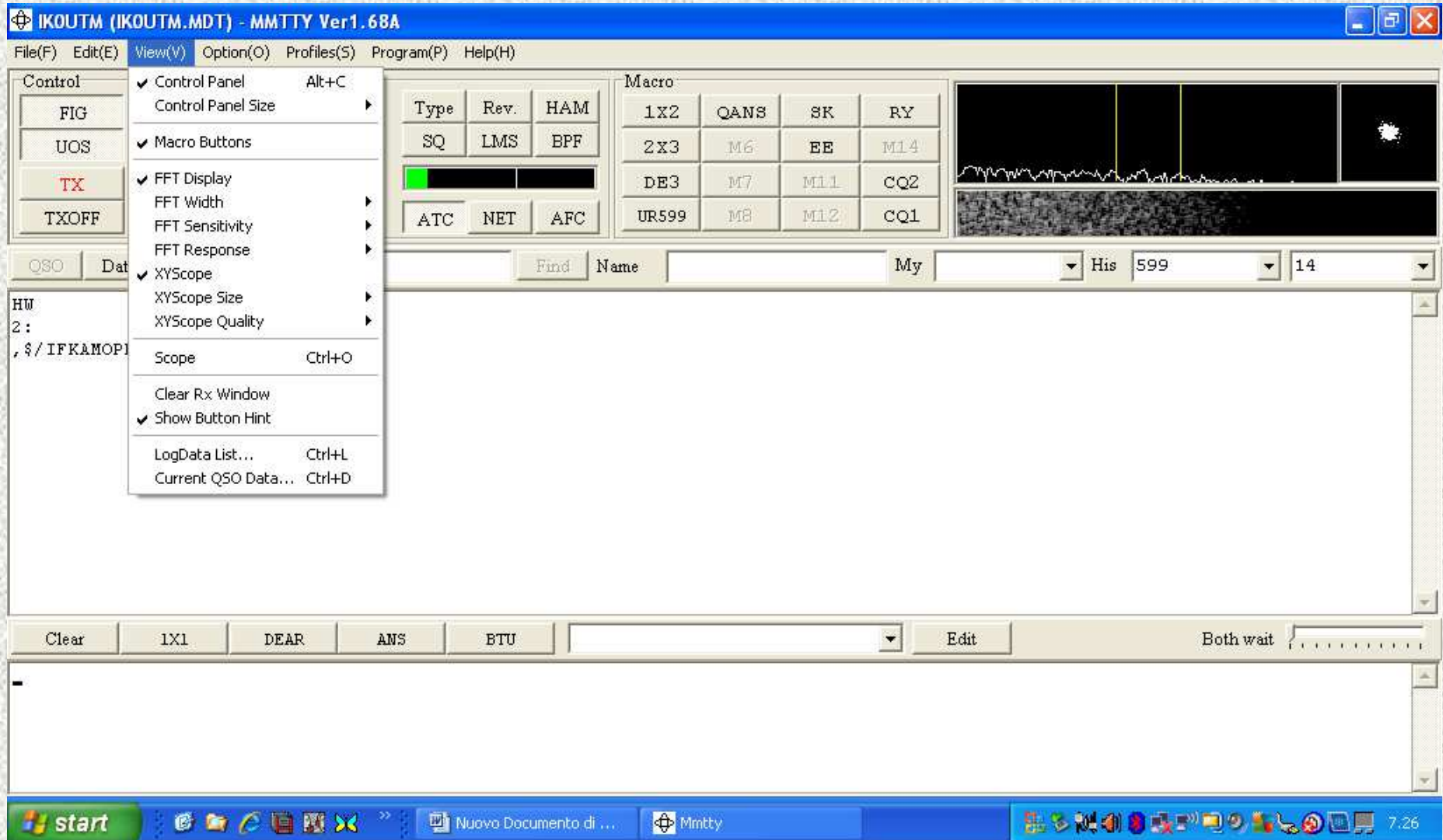
RTTY with Windows and Soundcard  
WinXP - Vista - Win7

**"MMTTY is free for Amateur Radio Use"**



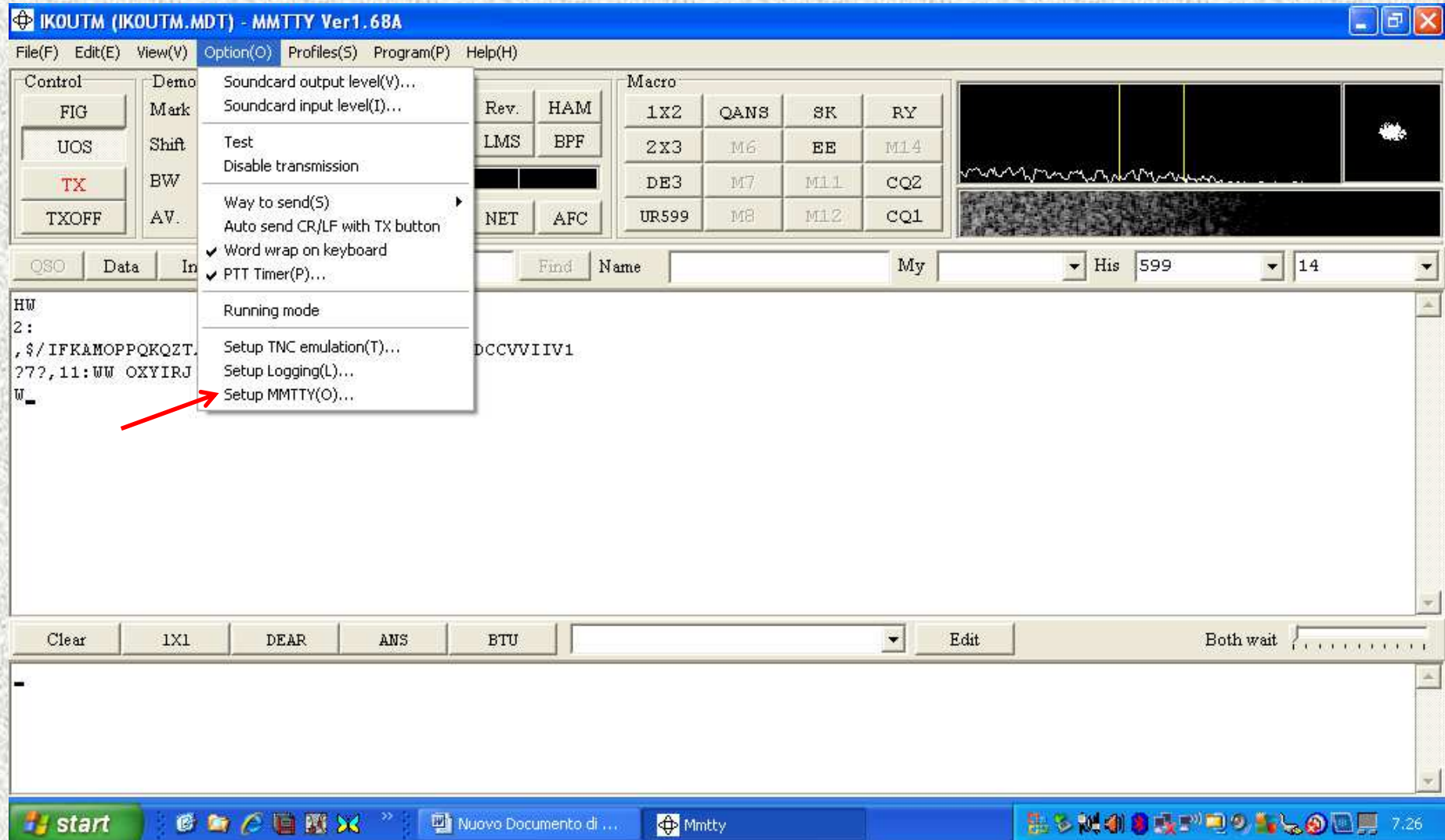
[Click for full screen view](#)

# MMTTY

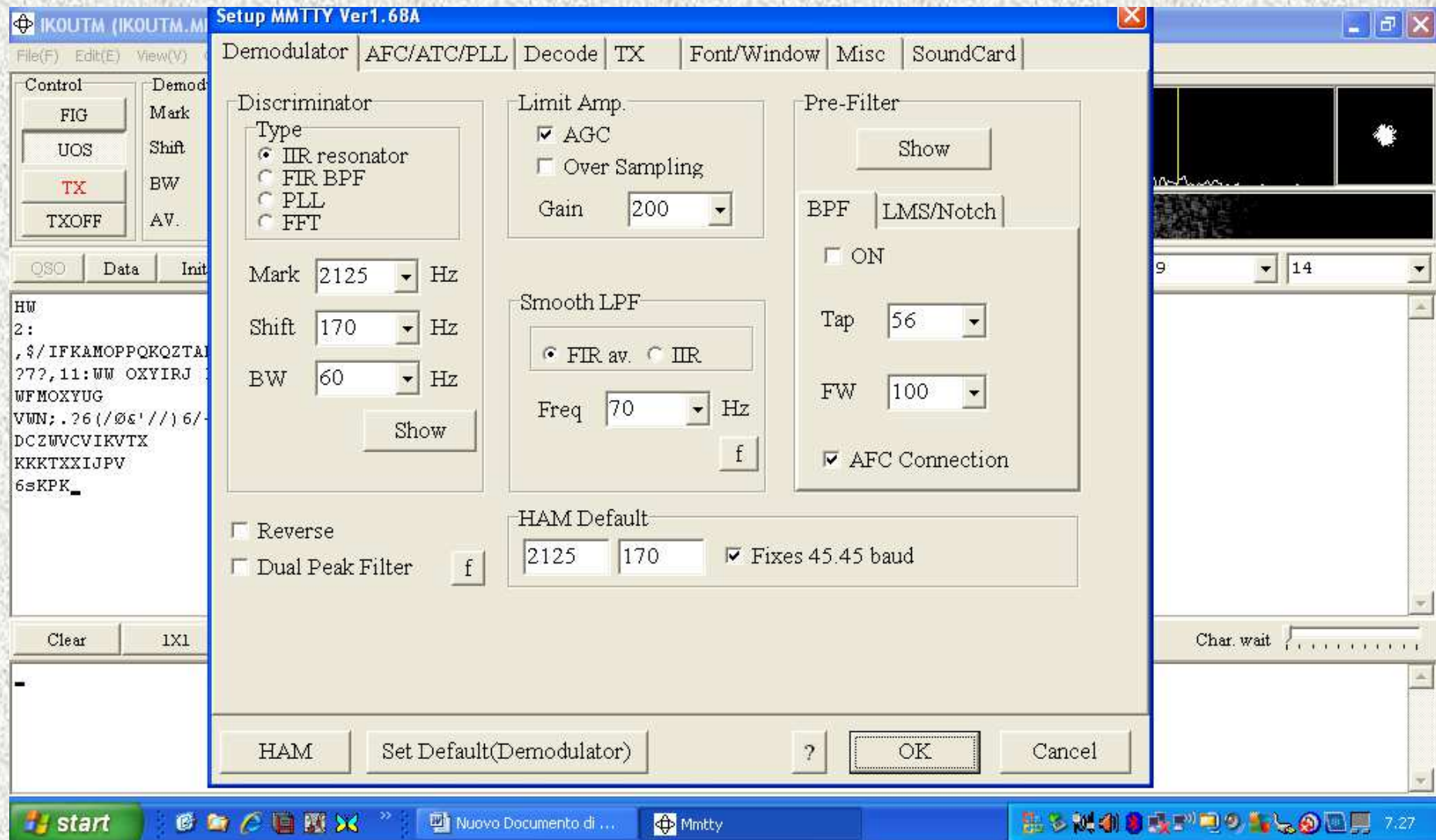




# MMTTY

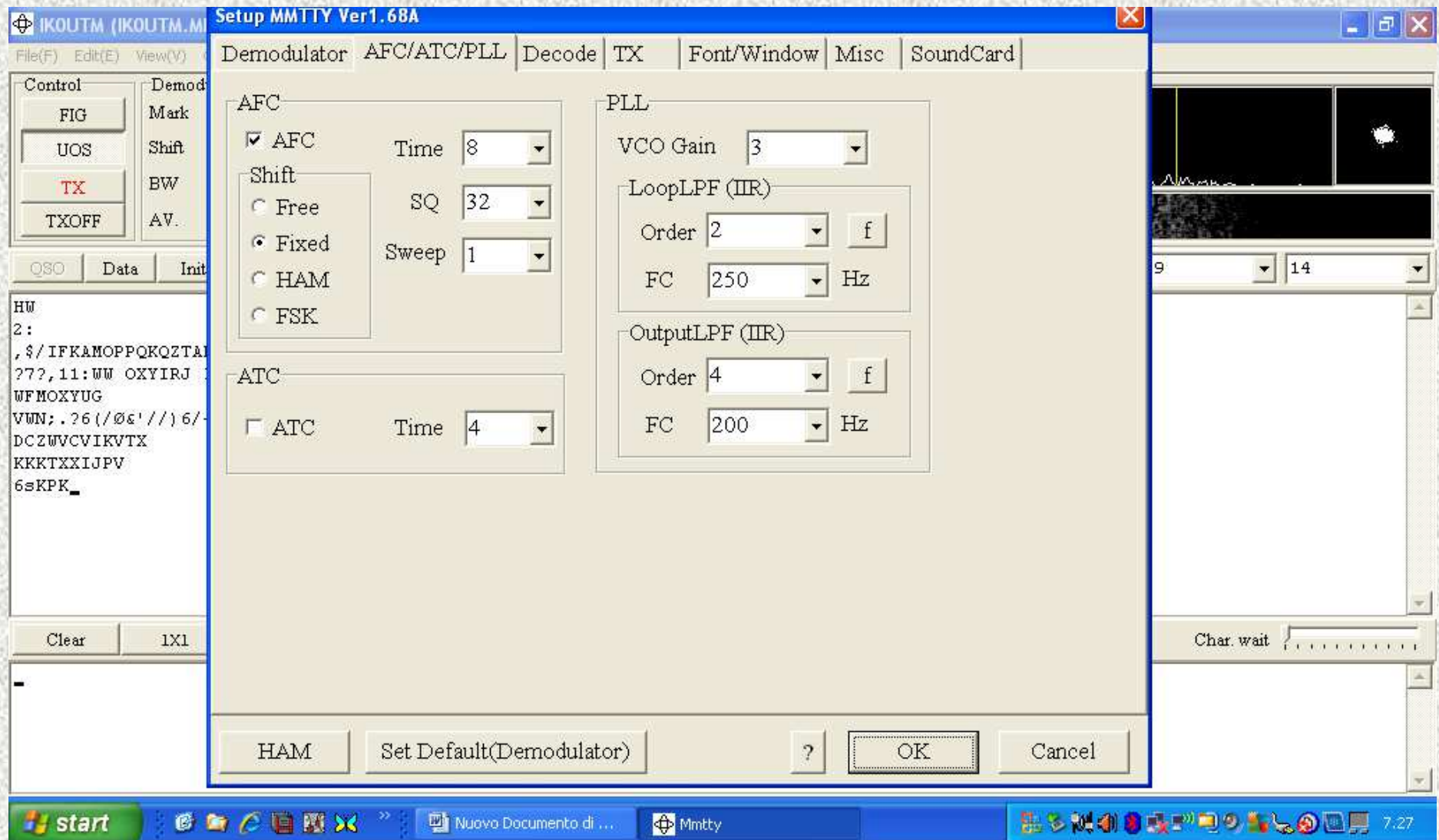


# MMTTY

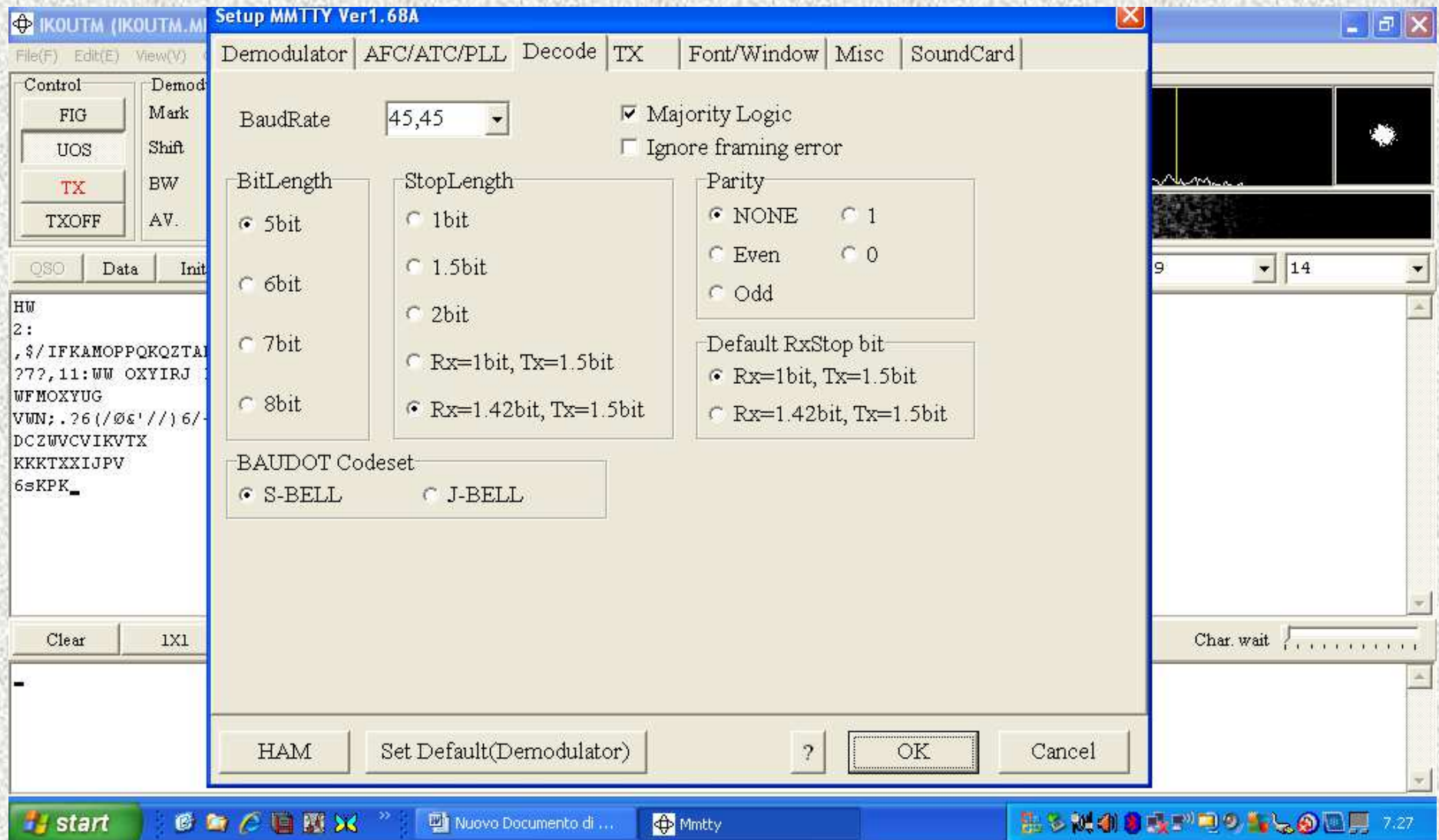




# MMTTY

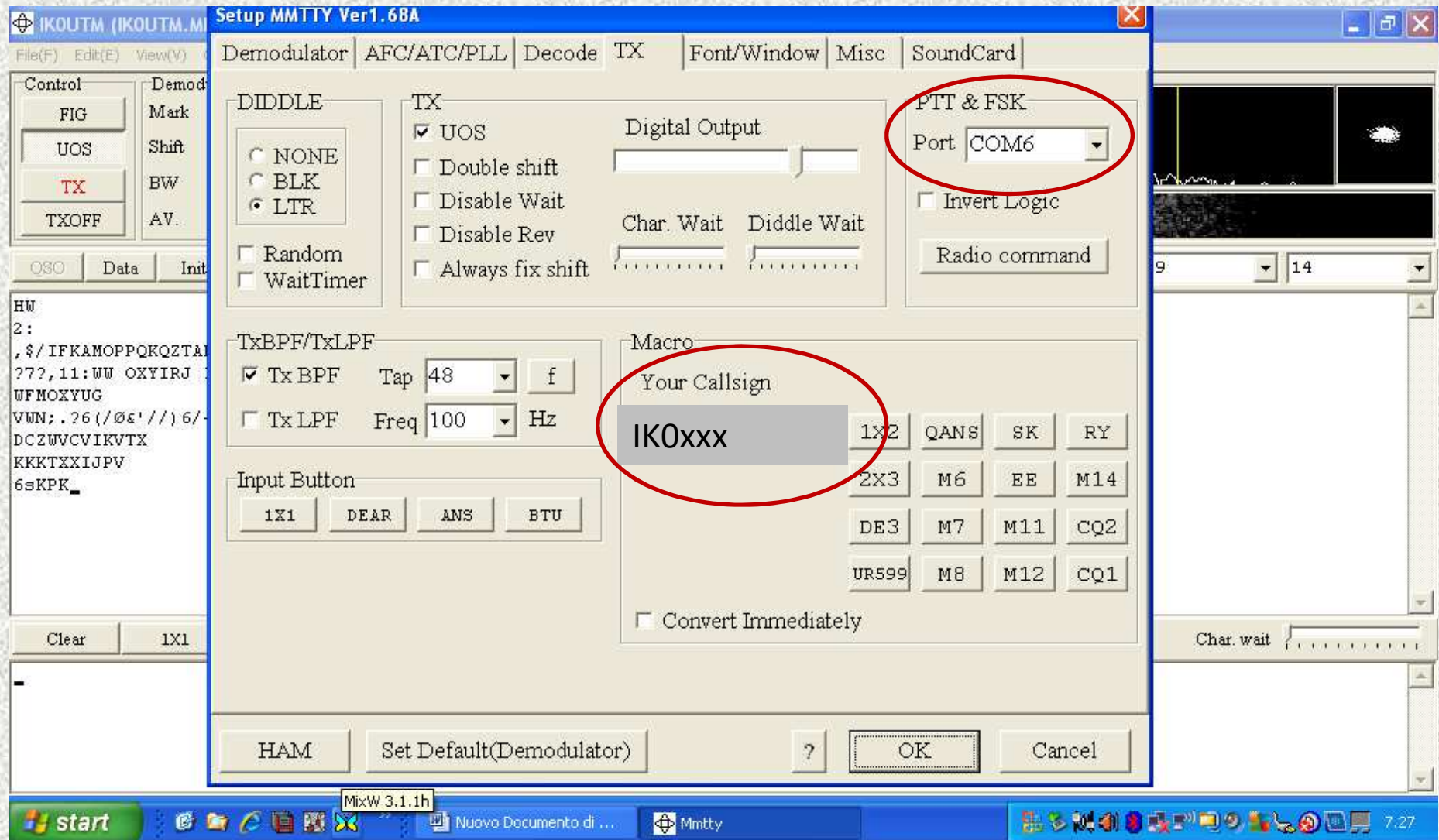


# MMTTY

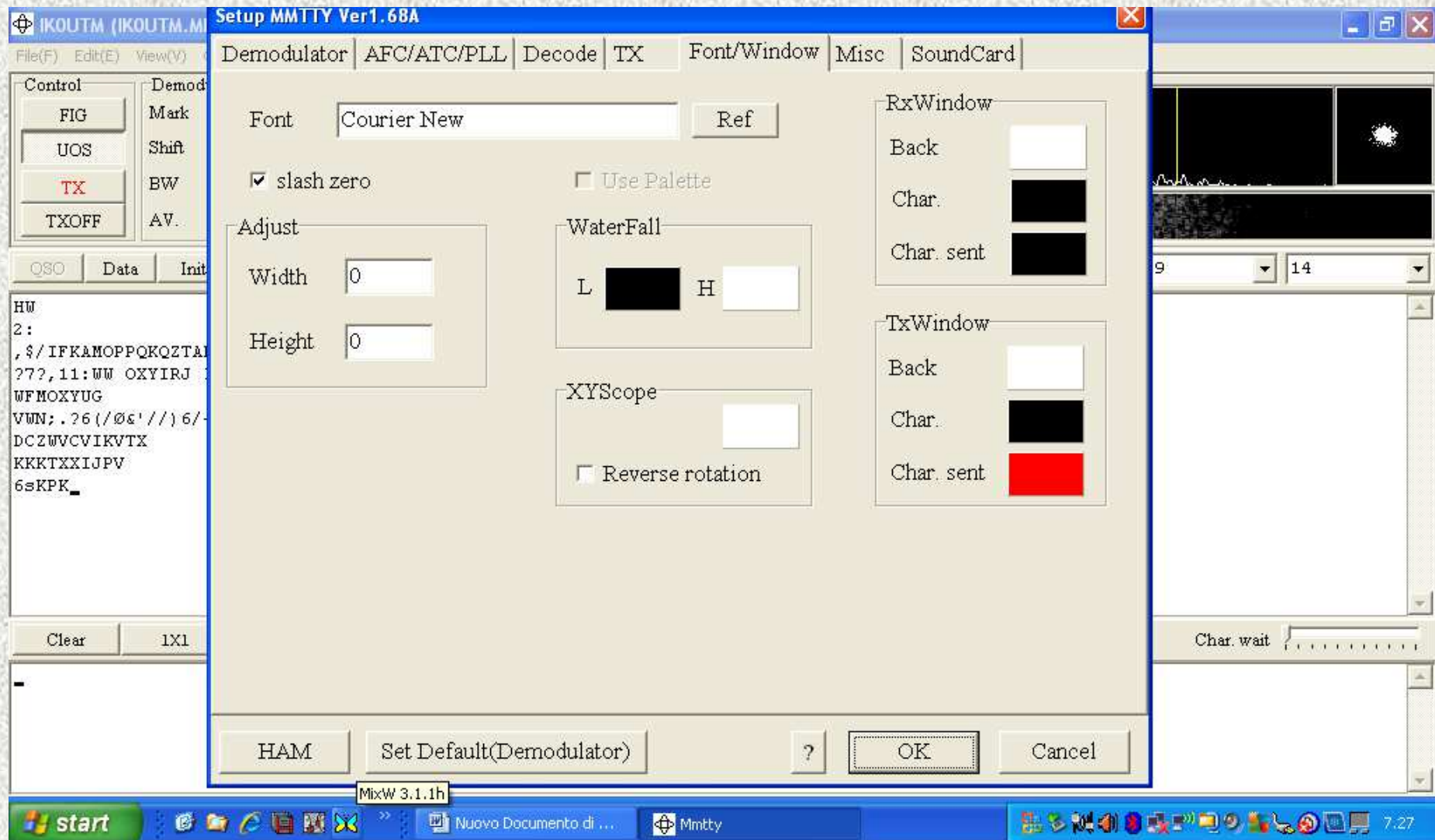




# MMTTY

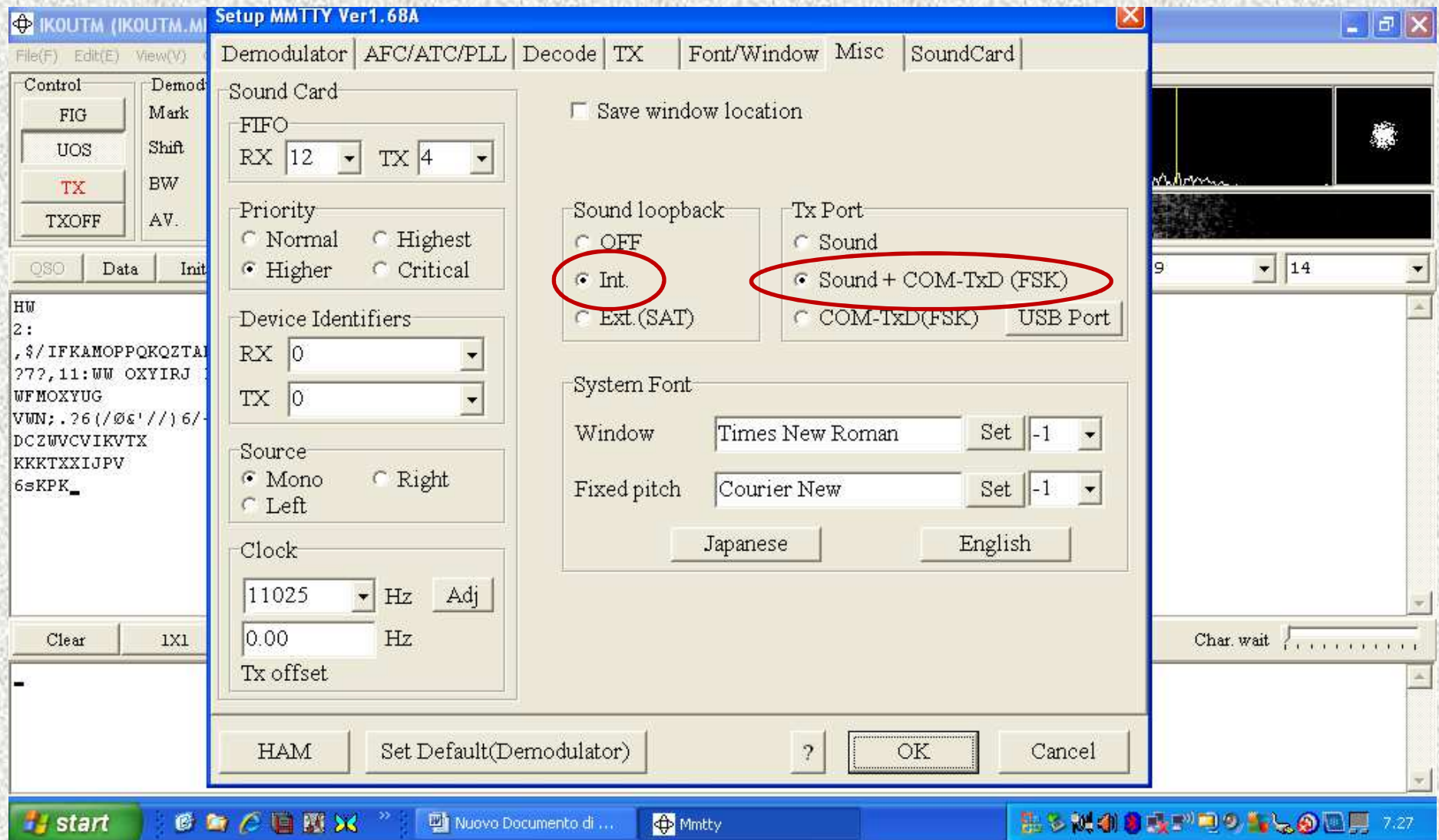


# MMTTY

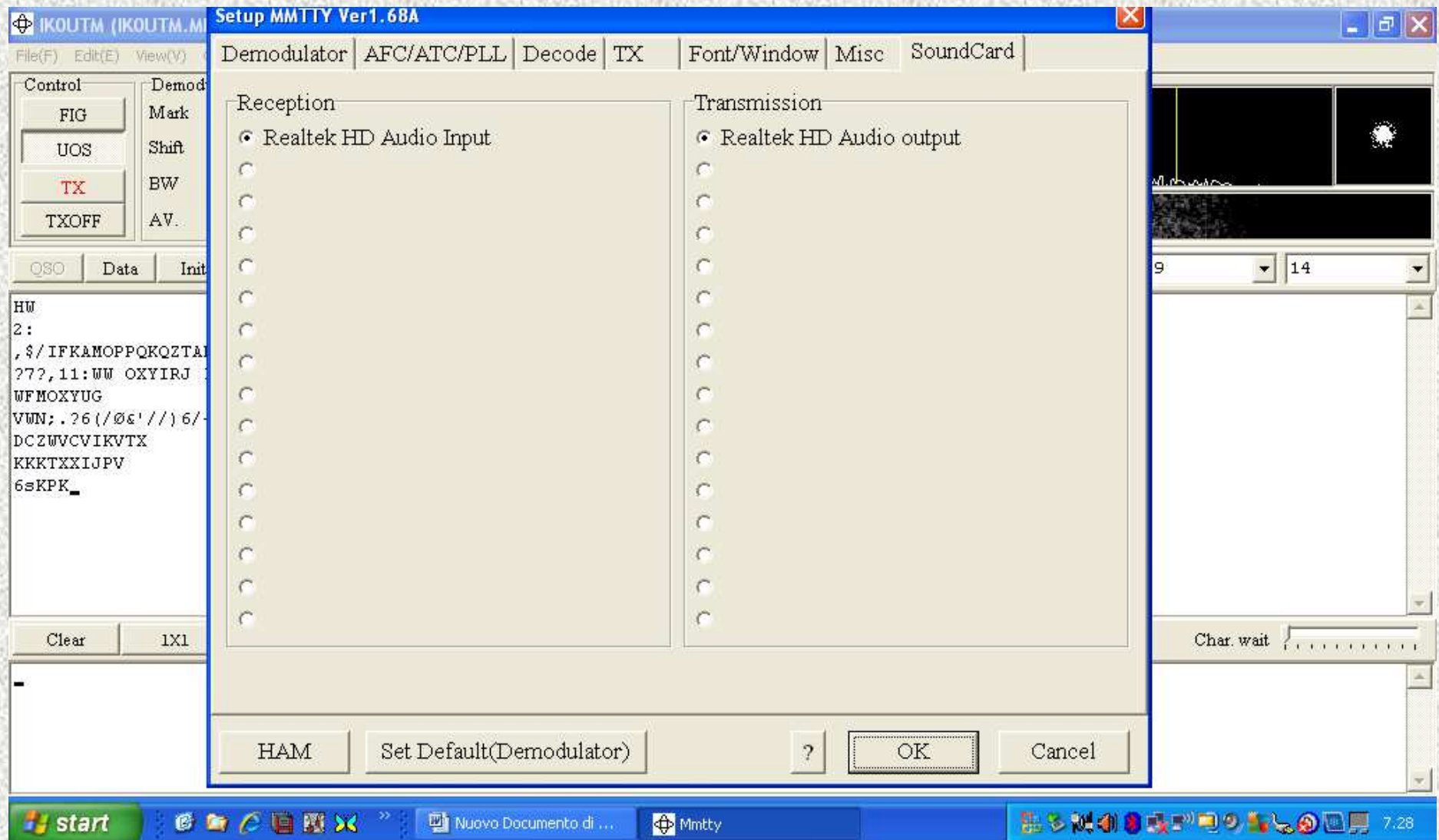




# MMTTY

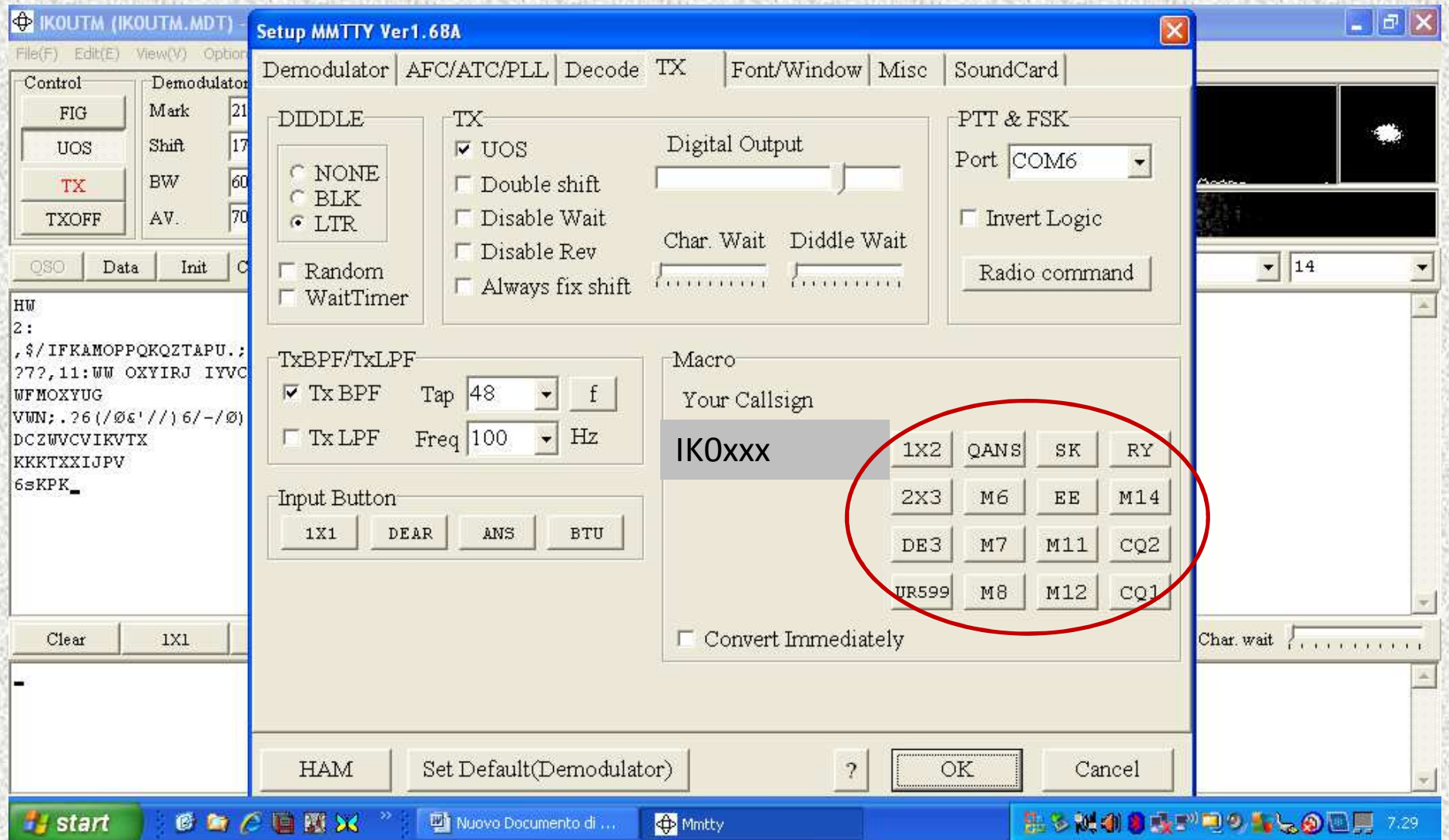


# MMTTY

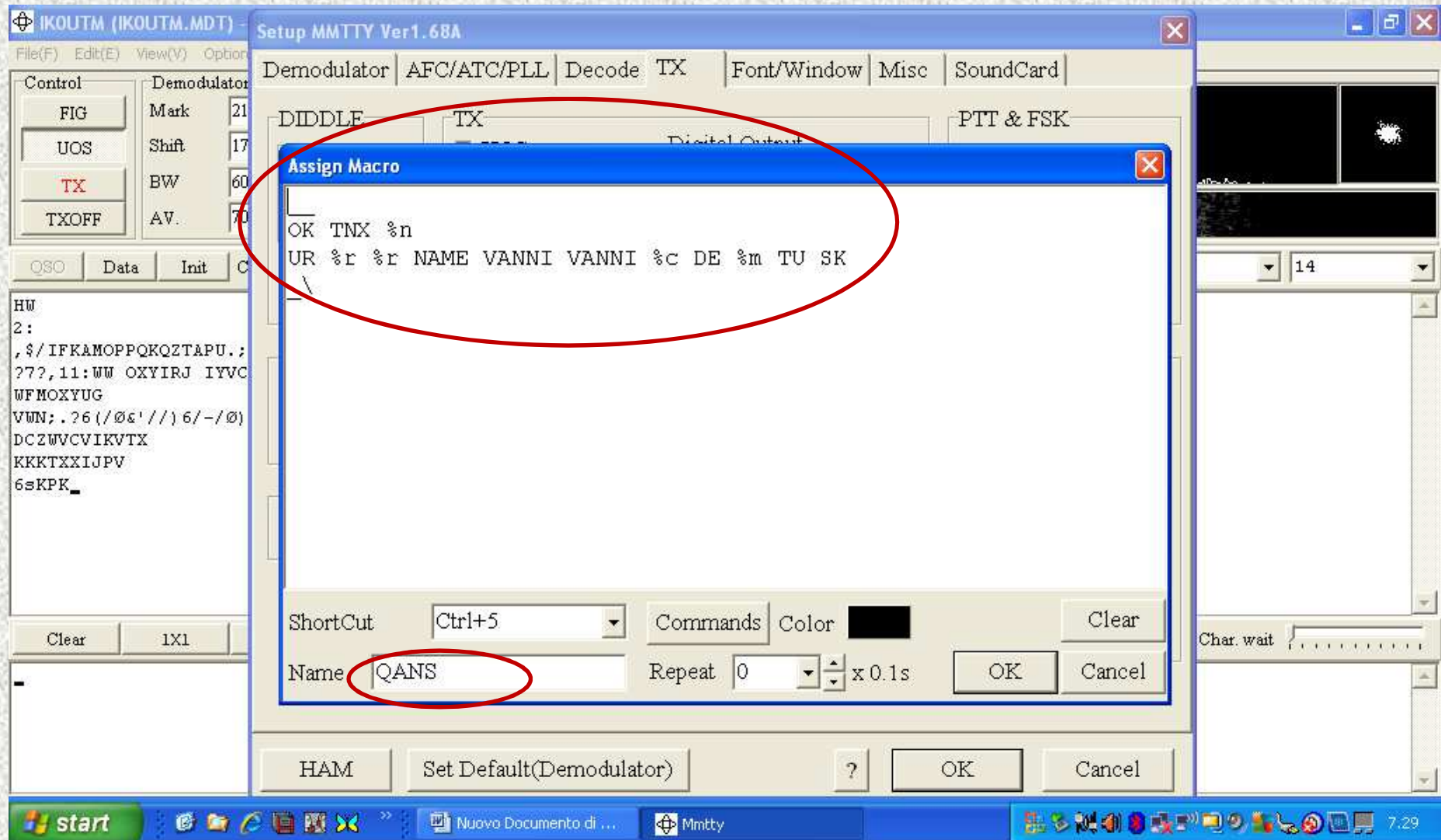




# MMTTY



# MMTTY





# MMTTY

