

## How to adjust the Sound card's CLOCK and TX OFFSET frequency on MMSSTV

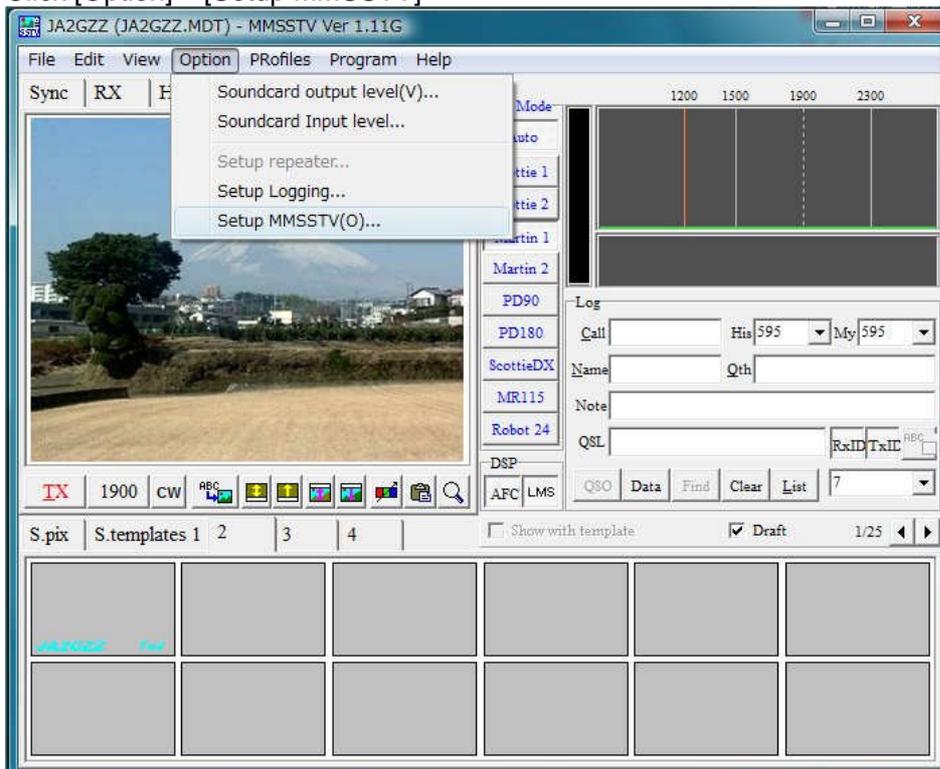
Version 20081129

### Basic theory of SSTV signal:

The SSTV signal must be extremely precise frequency. So before using MMSTV, we have to adjustment the won Sound card's "**Clock**" and "**TX Offset**" frequency. At first you have to improve the precision of something, below.

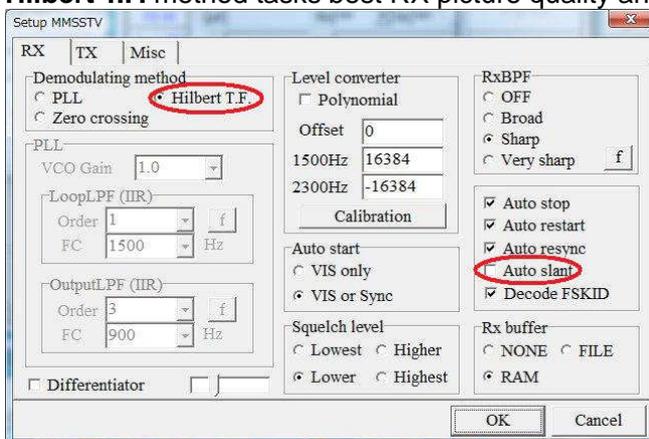
NOTES: "**Clock**" and "**TX Offset**" are not common value, but **unique value**. So it depends on PC.

Click [Option] – [Setup MMSSTV]



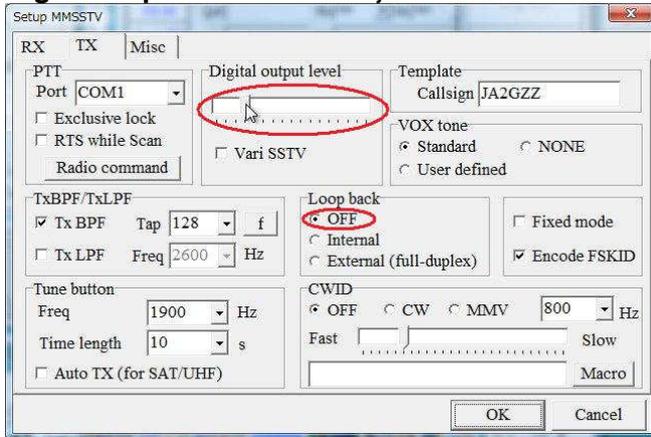
### RX tab

**Hilbert T.F.** method tasks best RX picture quality and **DO NOT** check **Auto slant** for adjustment.



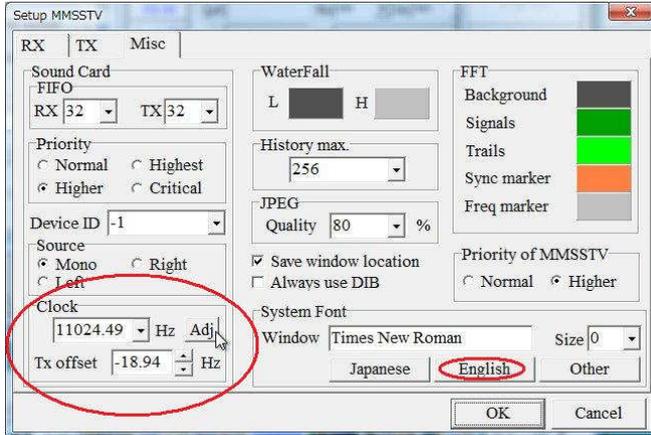
## TX tab

**Digital output level:** Allow adjustments XMIT audio level with out Windows audio mixer.



## Misc tab

**#1:** You memoires current **Clock** value and **TX offset** value of your PC.

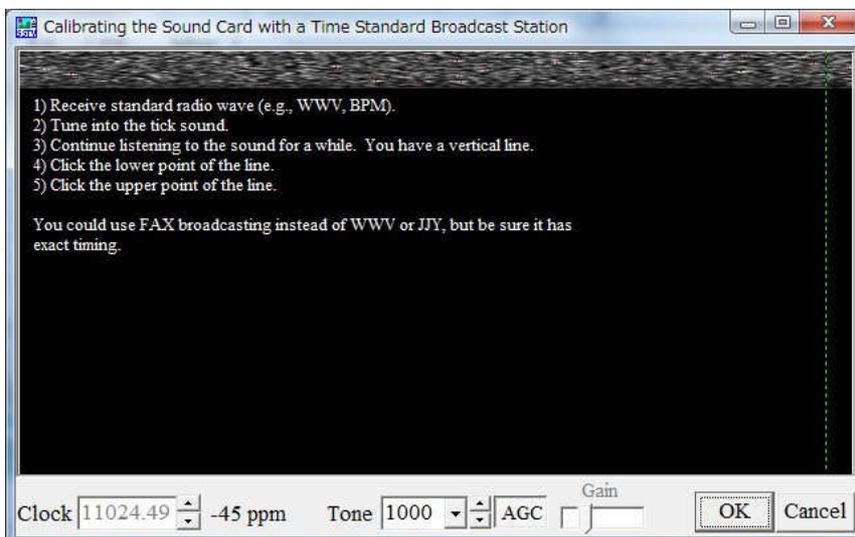


**#2:** There is two ways for **Clock** adjustment.

**Case1:** If you have a HF transceiver and /or HF radio: ... *Recommended*

Connected a HF **rig** and **Line input** of your PC, and then click **Adj** icon.

Receive WWV (standard time broadcasting station, on 5MHz, 10MHz, 15MHz) couples of minutes, then fix slant using by Mouse drag.



You might have extremely precise frequency after this adjustment.

(END of **CLOCK ADJ**)

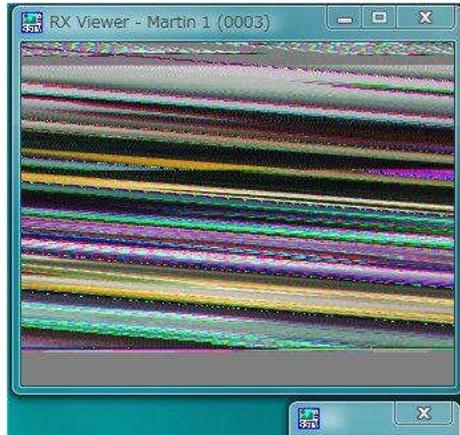
**Case2:** If you have no HF radio:

Find the station, who has extremely precise frequency; ask to him that “Did you already adjustment your Sound card frequency, used by WWV?”

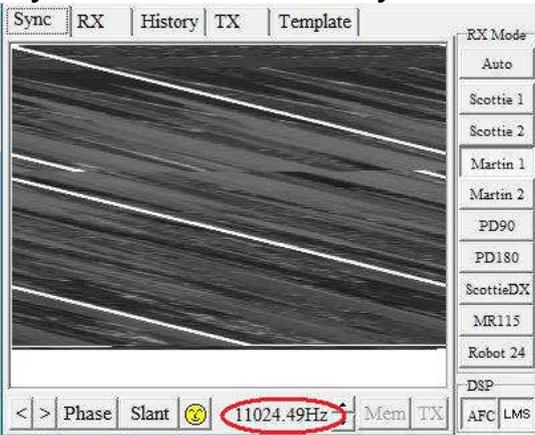
(Confirm! **Auto slant** function must be OFF at **RX** tab.)

Receive a reference picture (**Martin 1**) form him. Then click **Sync** tab, below.

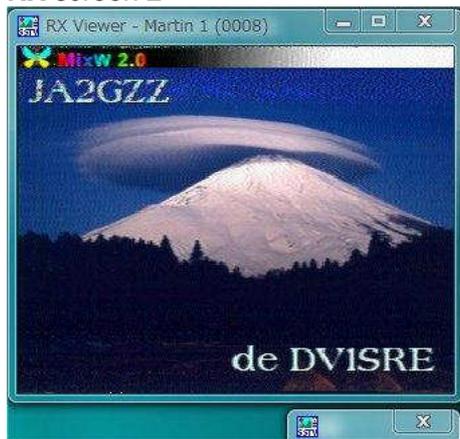
**RX screen 1**



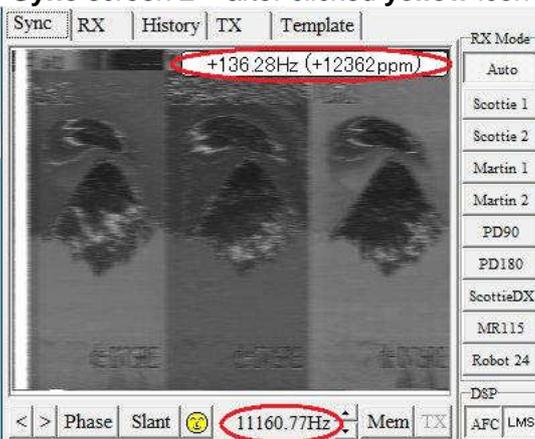
**Sync screen 1 – before click yellow icon**



**RX screen 2**



**Sync screen 2 – after clicked yellow icon**



When you clicked **yellow icon**, you might have “**Different frequency value**” +136.28Hz between you and him, then memories this value.

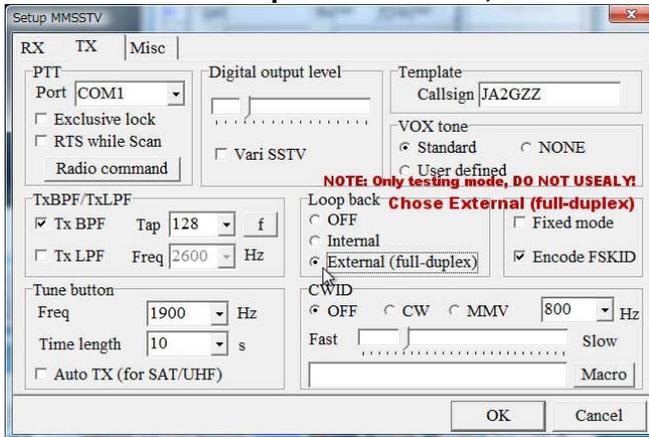
In this case, we decided “His picture as reference signal” means, true frequency=11160.77Hz, and your frequency (11024.49Hz) is temporally value. So you can set **11160.77** to the **Clock** value (see #1) Example:  $11024.49 + 136.26 = 11160.77$

Then, restart MMSSTV

(END of **CLOCK ADJ**)

### #3: How to adjustment TX offset value

At first, clear **TX offset** frequency value to **0.00Hz** (see **Misc** tab)  
Enable **External Loop Back** at **TX** tab, below.



The "Loop Back" means, it can be works it self, so no needs HamSphere and/or CQ100. Send the testing picture (**Martin 1**) on MMSSTV it self, after that, you might have received picture at MMSSTV RX screen. Then click **Sync** tab (see **#2:Case2**) ... and then click **yellow icon**, you might have "**Different frequency value**" between RX and TX, then memories this value.

You can use this "**Different frequency value**" for **TX offset**.

Example: if you had **-4.32Hz**, you have to set **+4.32Hz** for **TX offset**. (Opposite polarity)  
Then, reboots MMSSTV and then select **Loop Back** as **OFF** (see **TX** tab)

(END of **TX offset** ADJ)

#### APPEND:

You remember the **Basic theory of SSTV signal**

#### DENGERES FUNCTION OF **AUTO SLANT!**

On real HF QSO, we usually disable **Auto slant** function, and when received picture with **slant**, we report it immediately to him "You have **slant**", it same as "Your audio has distortion" or "It has hum" ...

Example: When you are watching football game on the TV, then you changed another TV channel, but unsynchronized TV screen (**slant**) ... How do you think about this matter?

**Auto slant** function hides wrong frequency SSTV signal, but easy to use...

Remember the **Basic theory of SSTV signal**

Thank you for reading this instruction manual.  
Ted, JA2GZZ