

TBS 5925 DVB-S2 Receiver EUMETCast Windows Setup Guide

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EUMETSAT
Eumetsat-Allee 1, D-64295 Darmstadt, Germany
Tel: +49 6151 807-7
Fax: +49 6151 807 555
<http://www.eumetsat.int>

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Document Change Record

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v1	2 September 2014		First release
v1A	15 December 2014		Links Updated, Added BDADDataEx
v1B	19 December 2014		Added BDADDataEx Automatic Configuration, New Drivers Tested
v1C	16 April 2015		Links Updated, New version of IPTool & BDADDataEx software used
v1D	29 April 2015		Tuner Frequency changed
v1E	16 February 2016		EUMETCast Europe PID table updated (§4.2e, p13), C-Band Africa IPTool Configuration added (§4.4, p16)
v1F	18 February 2016		Paragraph structure updated (§4.4, p16), Tellicast Setup Updated (§6.1, §6.3, p25)

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1 INTRODUCTION



Figure 1: TBS-5925 Receiver

The purpose of this manual is to guide a user through the minimum necessary steps to allow the reception of EUMETCast data (DVB-S2) on the TBS-5925 **satellite receiver**.

Please refer also to TBS “TBS Devices Manual_Version xxx” for more details, it is provided at the following link:

<http://www.tbsdtv.com/download/document/common/tbs-quick-install-guide.zip>

2 PREREQUISITES

Before performing the configuration please ensure the following steps have been addressed:

- A PC with a USB 2.0 port is available for connecting the receiver;
- Operating System is compliant;
- Internet explorer 7 and higher, Firefox 3 and higher or any other compatible browser;
- Administrator or Root access to the reception host system;
- The EUMETCast antenna pointing has been performed correctly to EUTELSAT10A for DVB-S2 reception. (For DVB-S2 reception the antenna pointing and LNB quality are crucial);
- An EKU has been obtained from the EUMETSAT user help desk;
- The reception host has the latest EUMETCast reception software installed;

3 DEVICE INSTALLATION

3.1 Physical Connections



Figure 2: TBS-5925 Connectors

The connectors used in the TBS-5925 device configuration are described in the following table:

Number	Connector
1	Power Supply
2	RF In
3	USB 2.0 Connector

- Connect the power adaptor to connector 1 on the TBS-5925;
- Connect the antenna cable to the connector 2 ;
- Install the windows drivers (see paragraph 3.2) and then once the driver has installed successfully connect the device using the connector 3 to the PC using a usb cable;
- Install and Configure IP Tool (see paragraph 4) ;
- Instead of IP tool you can use BDADDataEx (see paragraph 5) ;
- Configure Tellicast (see paragraph 6.1) ;

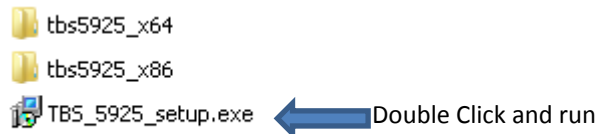
3.2 Windows Drivers Installation

- a) You can find the latest windows driver at the tbsdtv web site :

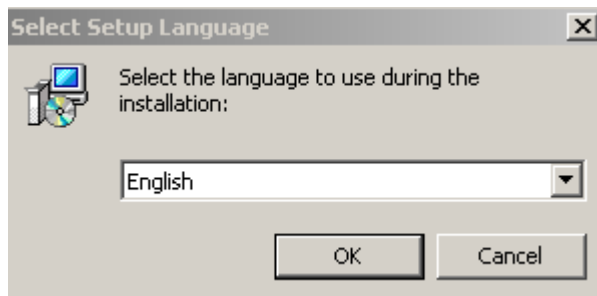
<http://www.tbsdtv.com/download/>

The version used for EUMETSAT testing was v.2.0.0.4

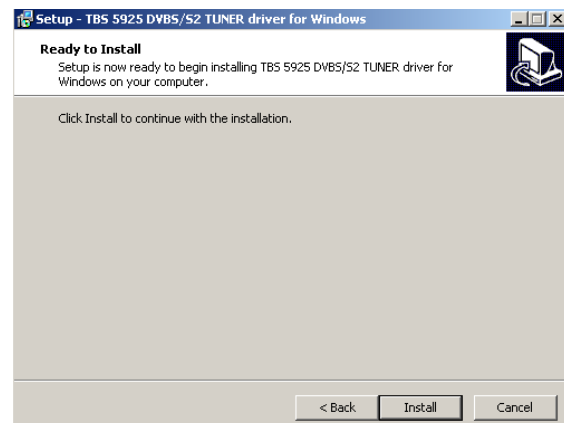
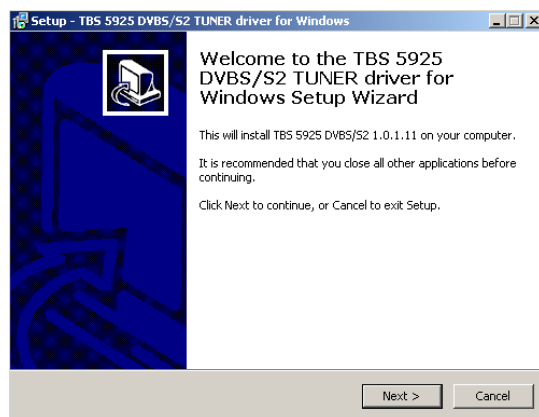
- b) Run the driver installer



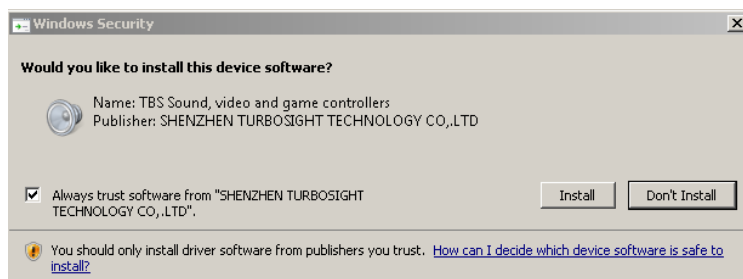
- c) Select the preferred language to use during the installation



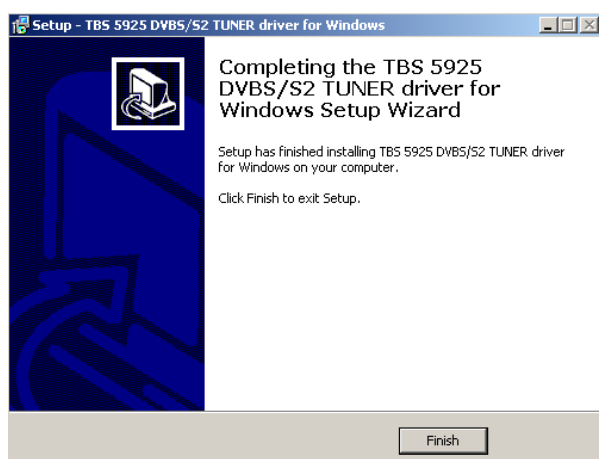
- d) Select “Next” & “Install” to start the installation



- e) If you see a “Windows Security” warning, select “Always trust” and “Install”



- f) Select “finish”. You have now installed the drivers for the TBS-5925 device



- g) Ensure the device is connected to the pc with a usb cable

Note: You may get a notice about new device found or installing drivers. Click OK and proceed.

- h) You can now see the TBS-5925 under the Windows Device Manager :



4 CHANNEL TUNING USING IP TOOL

4.1 IP Tool Installation

- a) You can find the latest IPTool software at the tbsdtv web site :

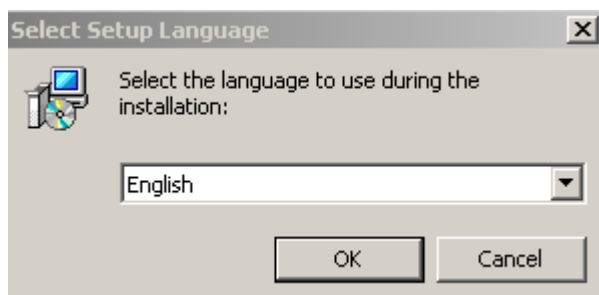
<http://www.tbsdtv.com/download/>

The version used for EUMETSAT testing was v.3.0.4.6

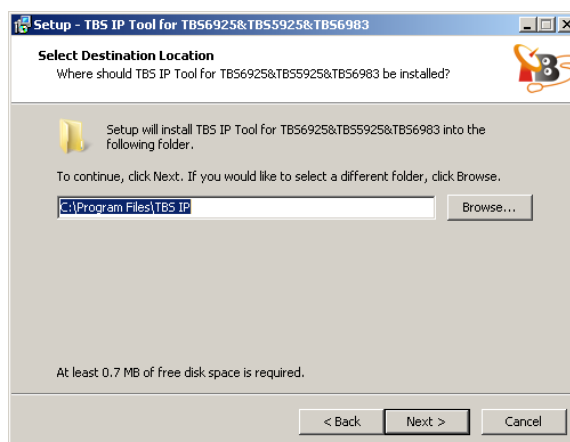
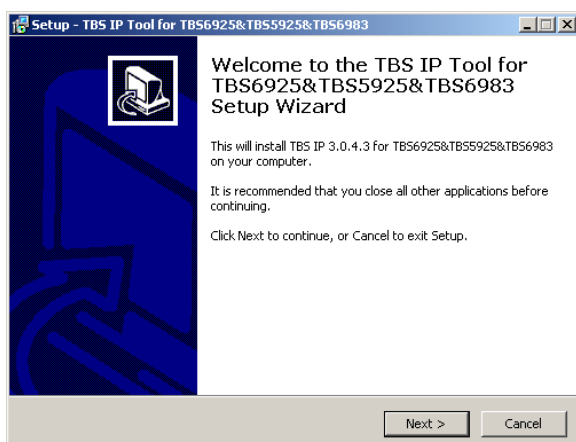
- a) Run the IP Tool installer

 **TBS_IP_TOOL_V3.0.4.6** ← Double Click and run

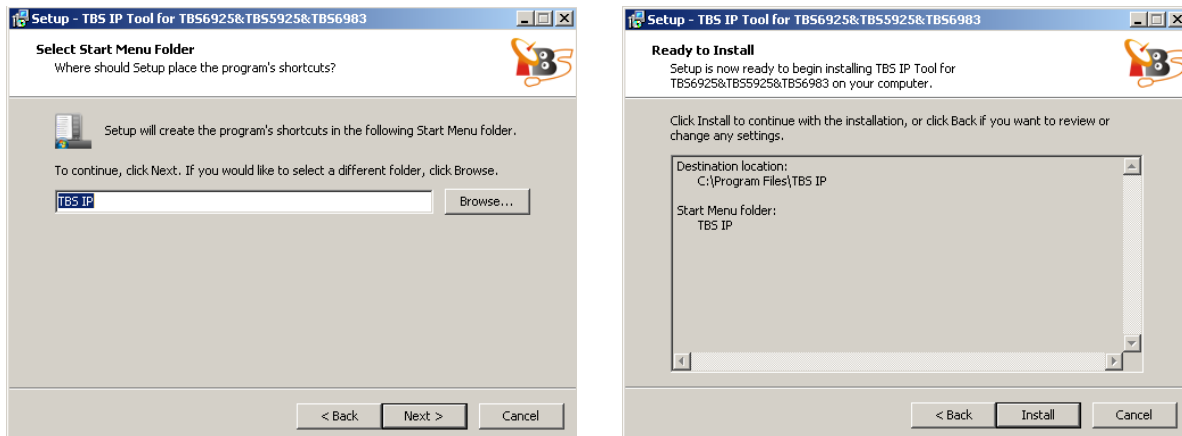
- b) Select the preferred language to use during the installation



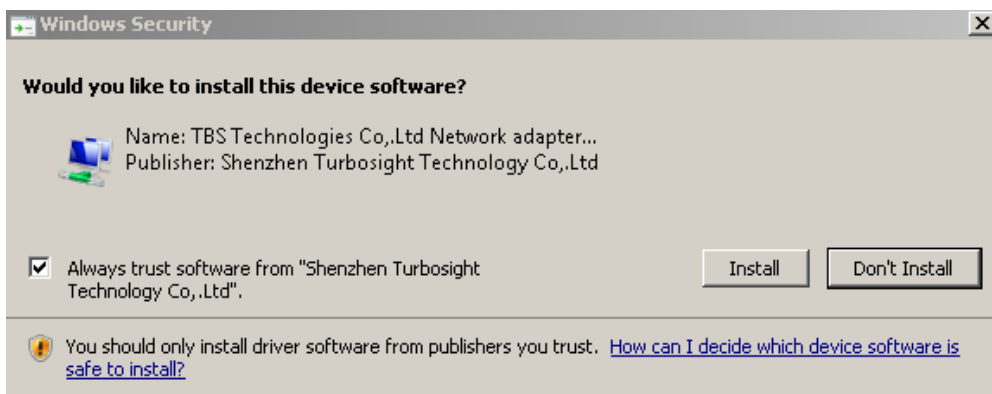
- c) Select “Next” to start the Installation & then “Next” again to select the installation directory :



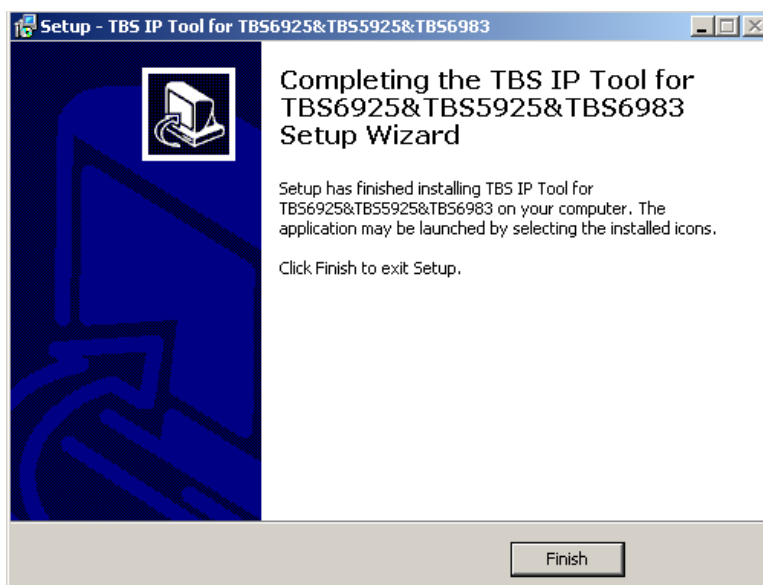
- d) Select “Next” to create the programs shortcut & “Install” to continue the installation :



- e) If you see a “Windows Security” warning, select “Always trust” and “Install”



- f) Select “finish”. You have now installed the TBS IP TOOL for the TBS-5925 device



4.2 IP Tool Ku Band Europe Configuration

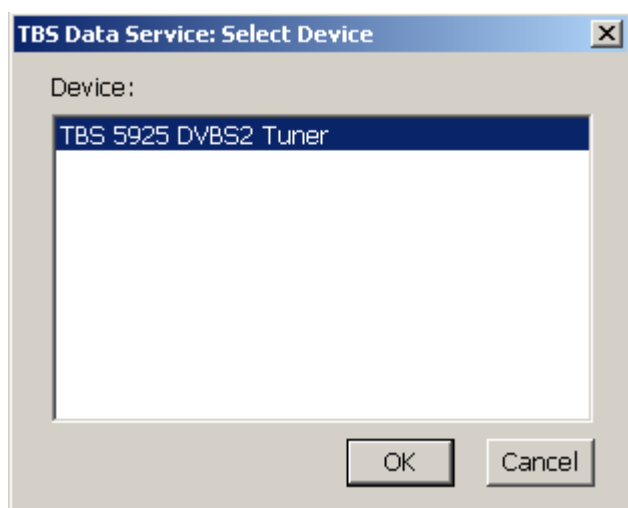
- a) Run the IP Tool software



← Double Click and run

Note: After the double-click, you may get a security warning, which you should accept.

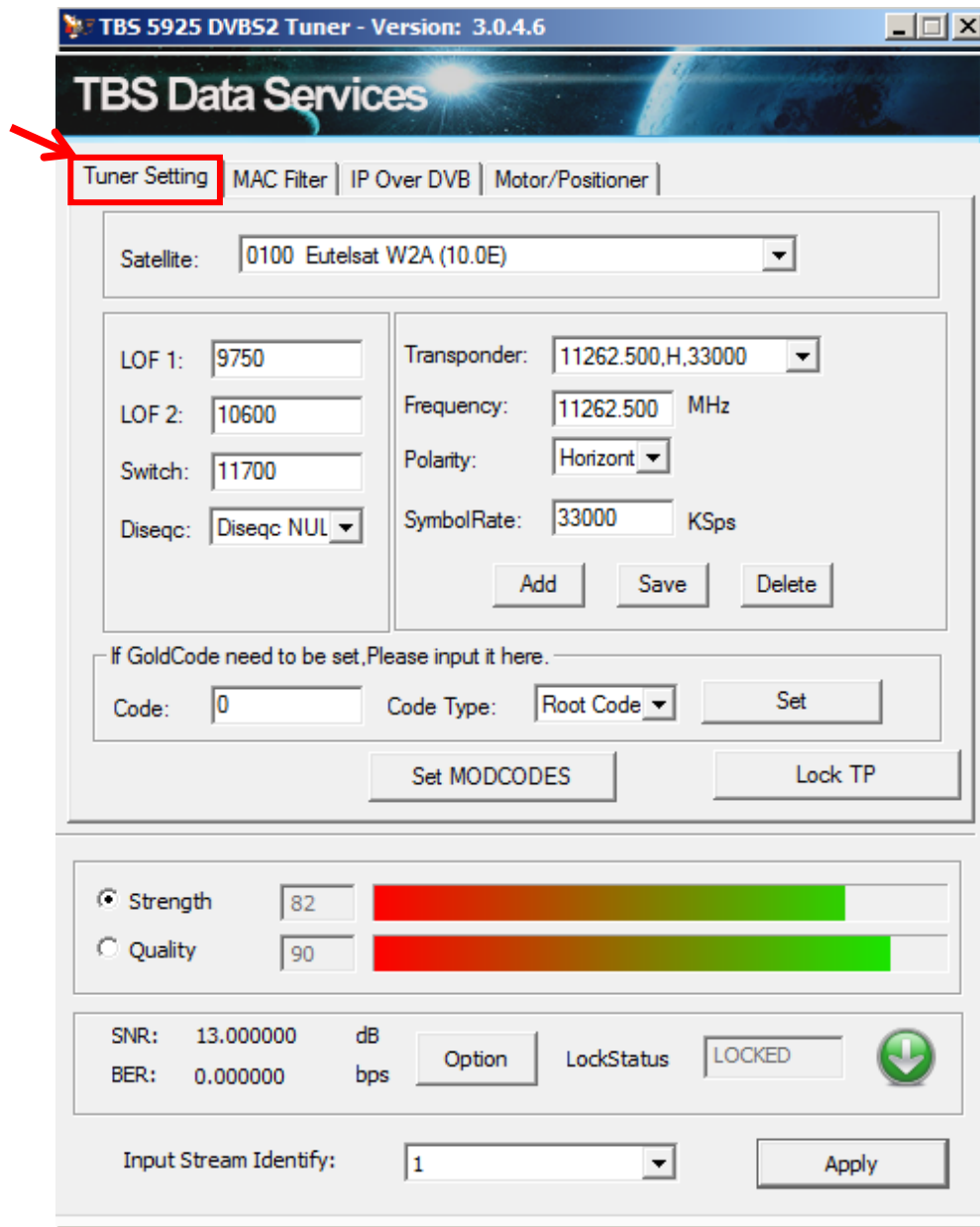
- b) Select the used DVB Device and “OK”



- c) Input the correct parameters into **Tuner Setting**, and select **Lock TP**. When you have a signal lock the device LOCK LED lights green.

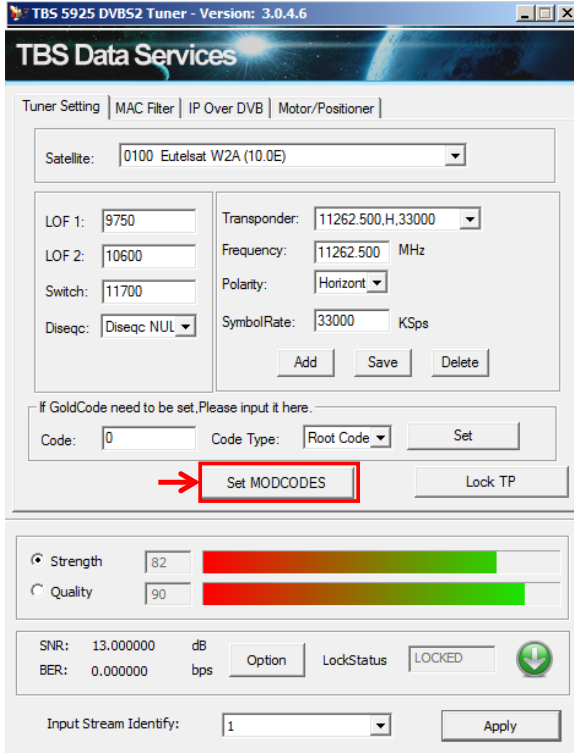
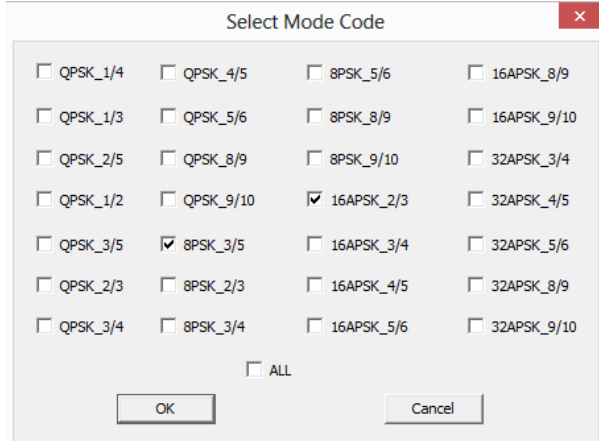
The following settings should be entered:

- select Eutelsat W2A (10.0E) Satellite
- Frequency 11262.500 MHz
- Polarity: Horizontal
- Symbol rate: 33000 KSps
- press “Add”
- press: “Save”
- Code : 0, Code Type : Root Code and then press “Set”

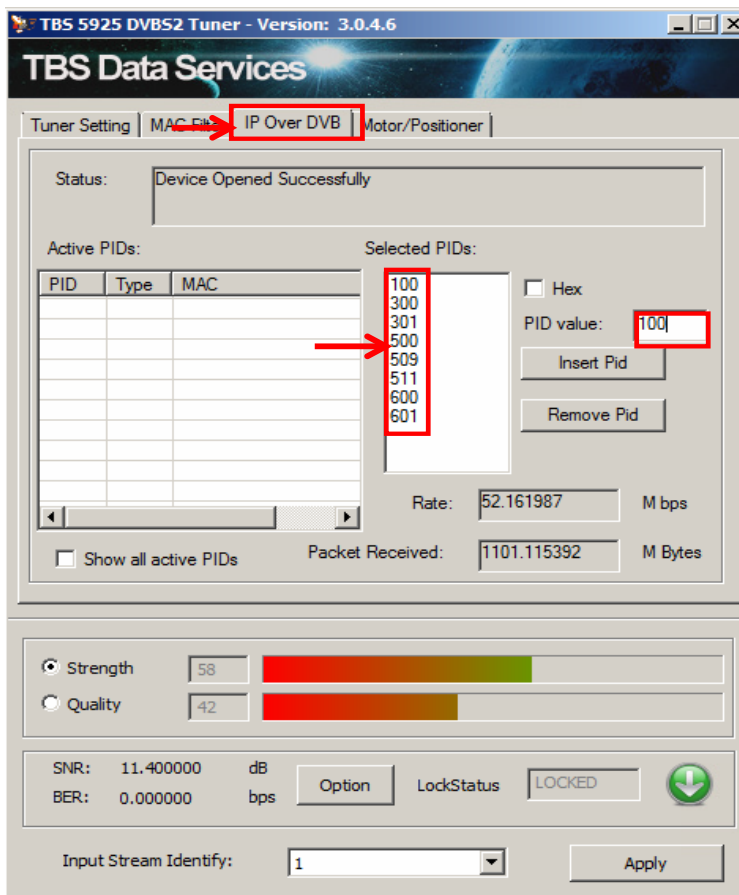


- Now press "Lock TP" to lock the signal.

- d) Click the **Set MODCODs** button, and then select the MODCODs you want to receive. For Basic Service (BS) select 8PSK_3/5 and for High Volume Service (HVS) select 16APSK_2/3. Select **OK**

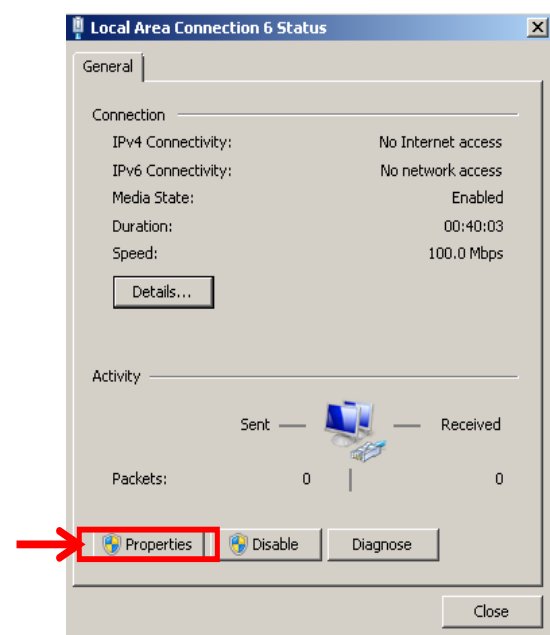
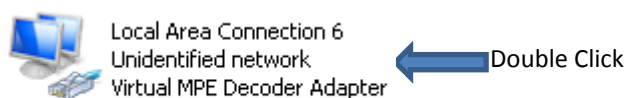
- e) After setting the MODCODS filters, press "Lock TP" to lock the signal again and then click on the IP Over DVB. Add the selected PIDs :
- Ensure the Hex box is unchecked.
 - Enter a PID value starting with 100 in the PID value box, and press the Insert PID button. It should appear in the Selected PIDs list.
 - Repeat this for all the remaining PIDs you need, typically: 300, 301, 500, 509, 511, 600 & 601 (600 & 601 are for the HVS).



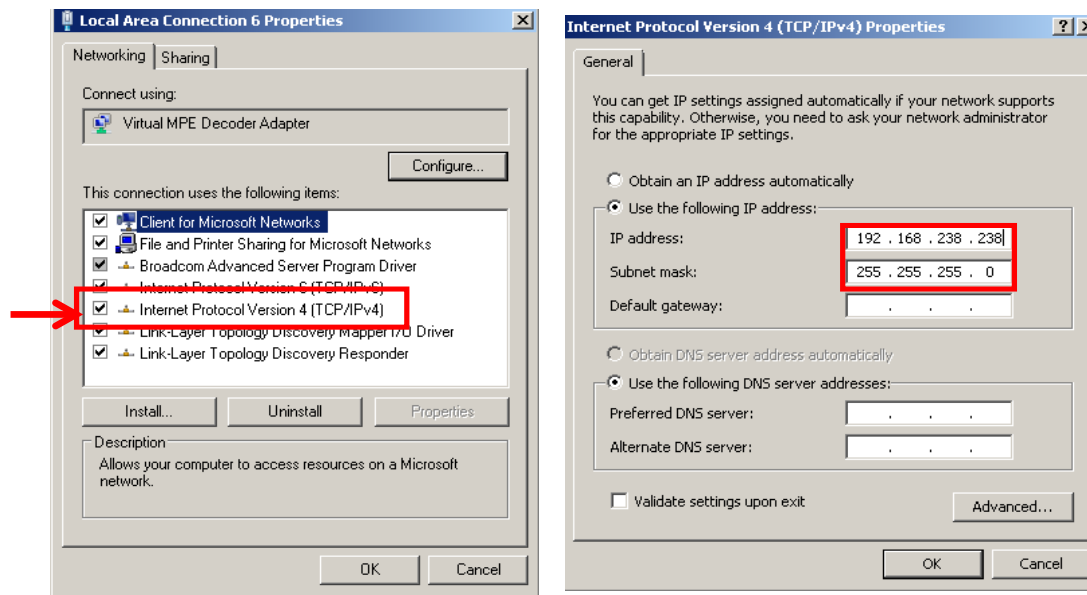
f) Virtual MPE Decoder Adapter Configuration.

We now need to define the network address of the virtual network card presented by the software so that TelliCast knows where to find its data

Open "Network & sharing Center". Go to "Change adapter Settings". Double Click on the "Virtual MPE Decoder Adapter" and select properties.



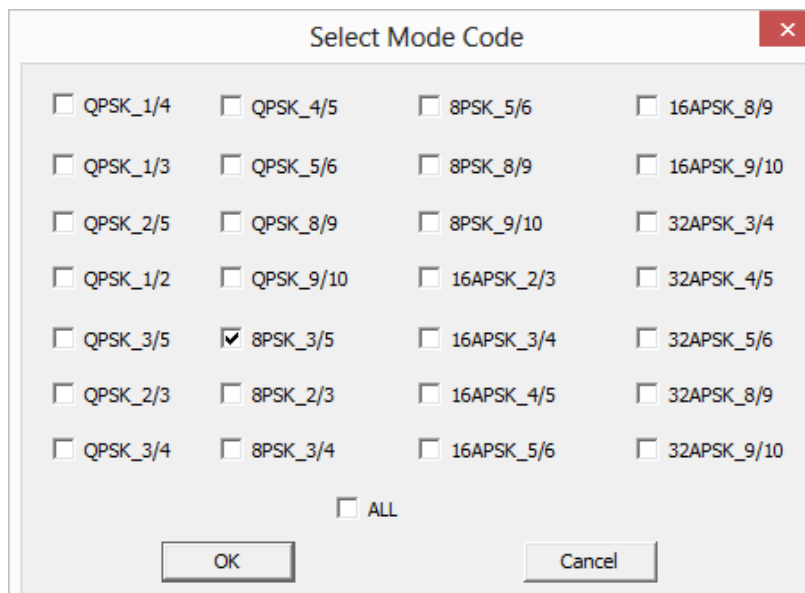
g) Change the IP address to 192.168.238.238 and the subnet mask to 255.255.255.0



Note : It is suggested to uncheck all the items in the items list, except Internet Protocol Version 4 (TCP/IPv4). This may reduce the load on the network "card".

4.3 Disabling the High Volume Service

To disable the High Volume Service (HVS) and receive only the Basic Service (BS) change the “Set MODCODES” selecting only “8PSK,3/5” and click on “Apply settings”. (see 4.2 d)



4.4 IP Tool C-Band Africa Configuration

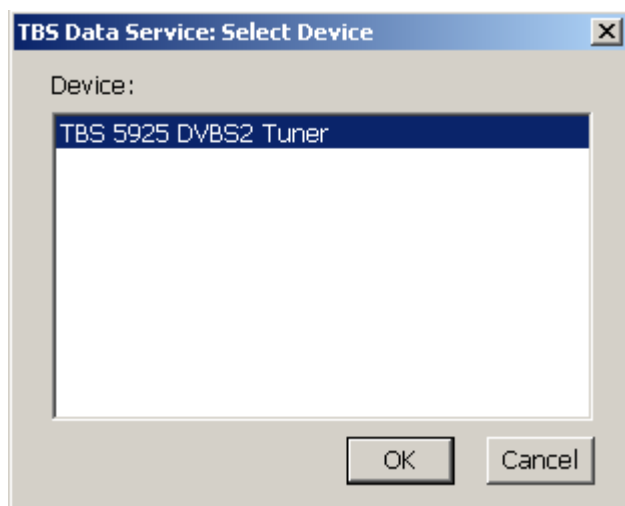
- a) Run the IP Tool software



← Double Click and run

Note: After the double-click, you may get a security warning, which you should accept.

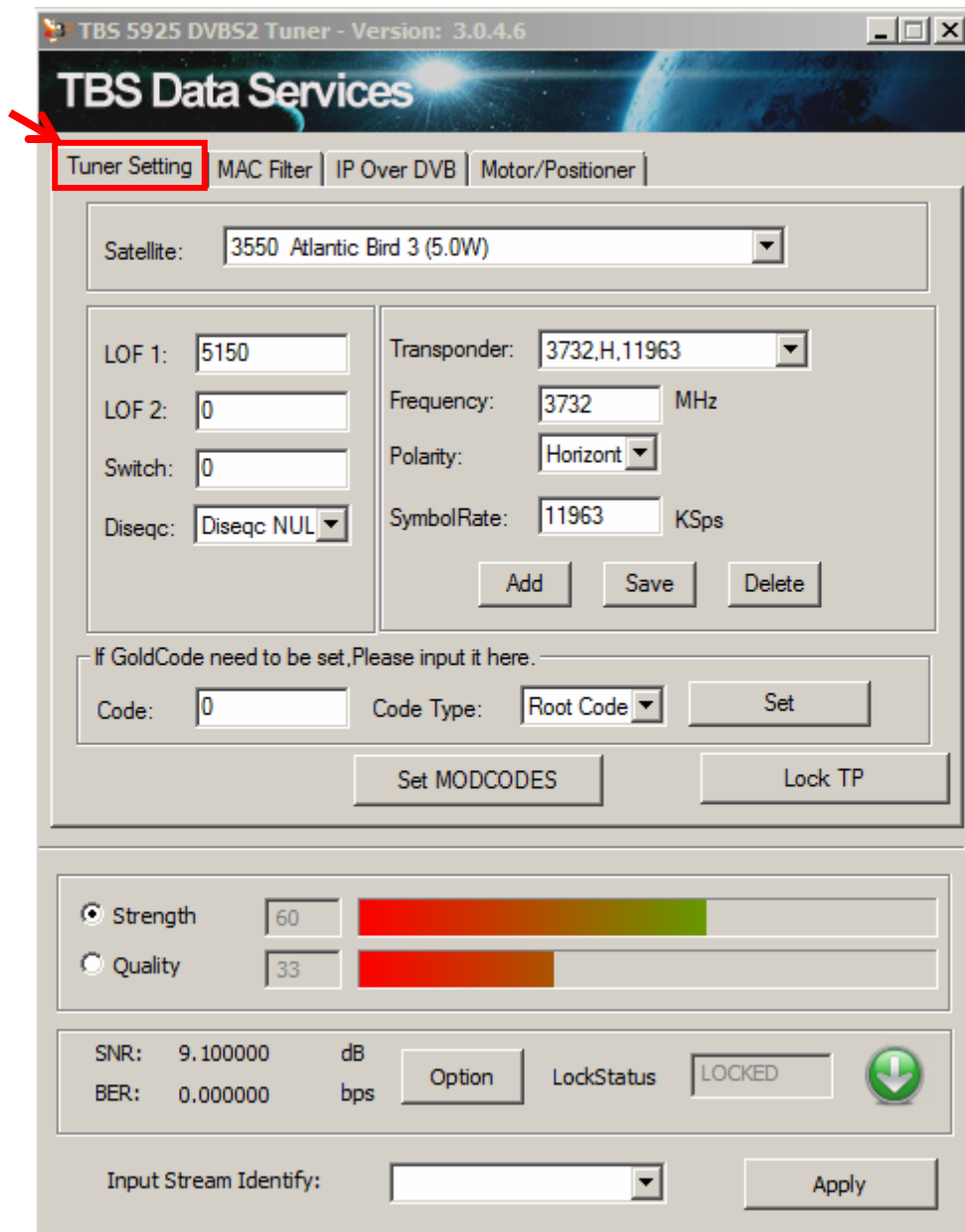
- b) Select the used DVB Device and “OK”



- c) Input the correct parameters into **Tuner Setting**, and select **Lock TP**. When you have a signal lock the device LOCK LED lights green.

The following settings should be entered:

- select Atlantic Bird 3 (5.0W) Satellite
- Frequency 3732 MHz
- Polarity: Horizontal
- Symbol rate: 11963 KSps
- press “Add”
- press: “Save”
- Code : 0, Code Type : Root Code and then press “Set”



TBS 5925 DVB-S2 Tuner - Version: 3.0.4.6

TBS Data Services

Tuner Setting | MAC Filter | IP Over DVB | Motor/Positioner

Satellite: 3550 Atlantic Bird 3 (5.0W)

LOF 1: 5150 Transponder: 3732,H,11963

LOF 2: 0 Frequency: 3732 MHz

Switch: 0 Polarity: Horizont

Diseqc: Diseqc NUL SymbolRate: 11963 KSps

Add Save Delete

If GoldCode need to be set, Please input it here.

Code: 0 Code Type: Root Code Set

Set MODCODES Lock TP

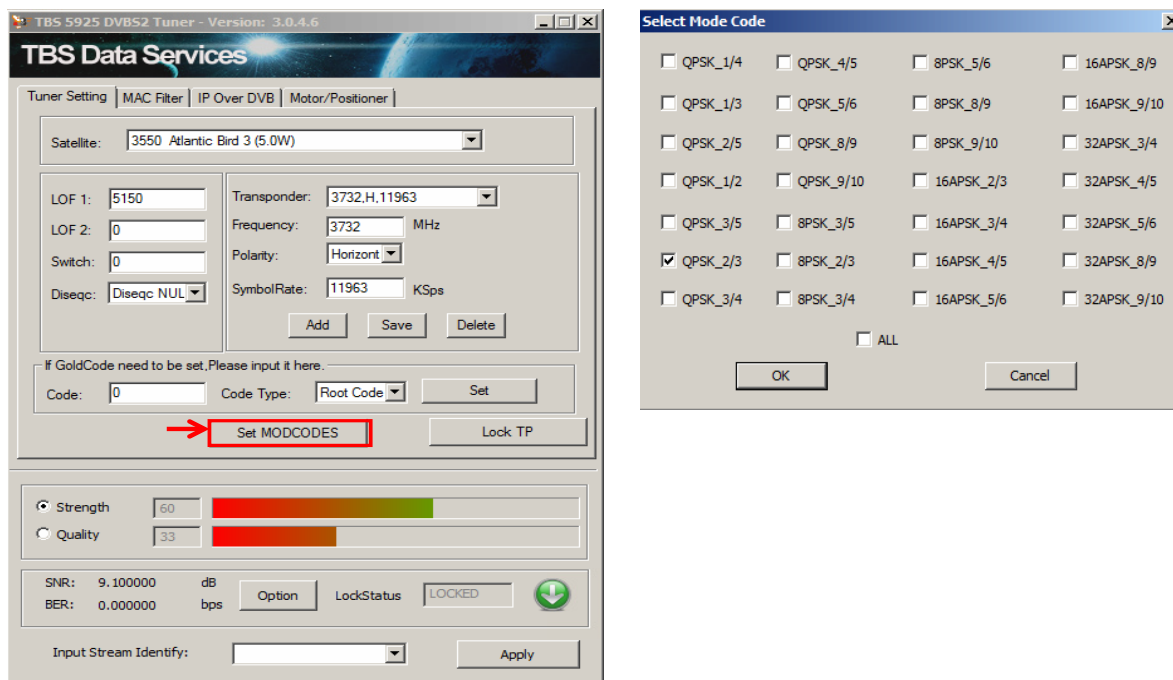
Strength 60 Quality 33

SNR: 9.100000 dB BER: 0.000000 bps Option LockStatus: LOCKED

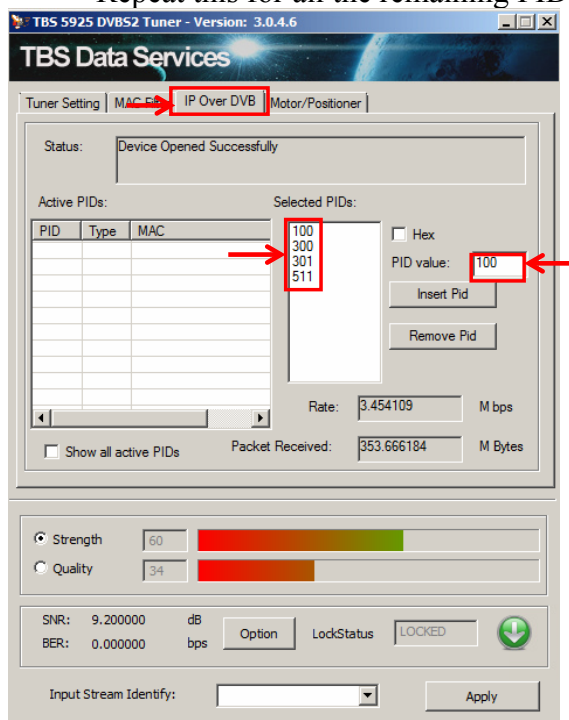
Input Stream Identify: Apply

- Now press "Lock TP" to lock the signal.

- d) Click the **Set MODCODs** button, and then select the MODCOD QPSK_2/3.
Select **OK**



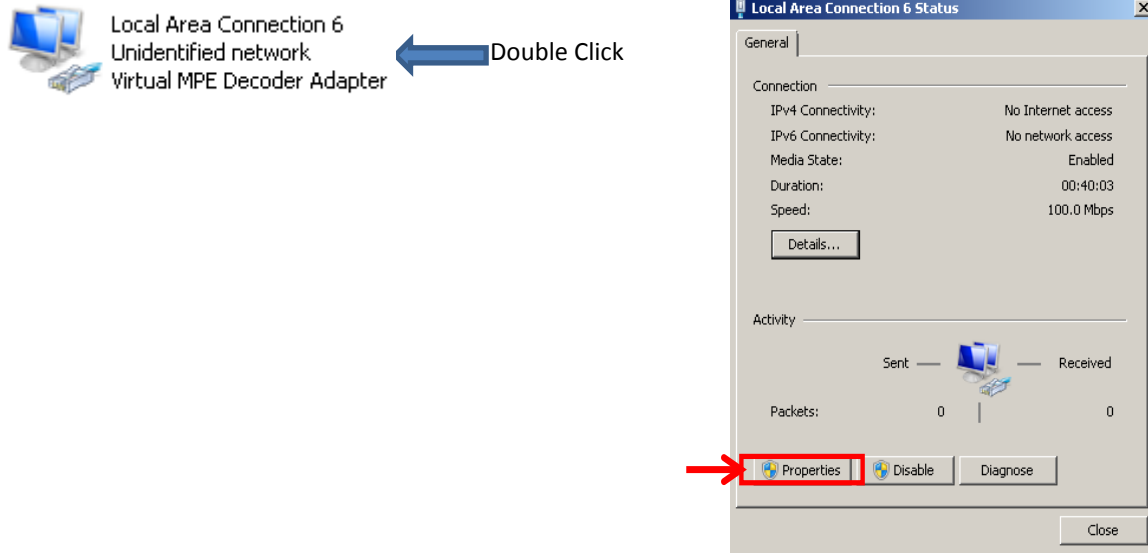
- e) After setting the MODCOD filter, press "Lock TP" to lock the signal again and then click on the IP Over DVB. Add the selected PIDs :
- Ensure the Hex box is unchecked.
 - Enter a PID value starting with 100 in the PID value box, and press the Insert PID button. It should appear in the Selected PIDs list.
 - Repeat this for all the remaining PIDs you need, typically: 300, 301 and 511.



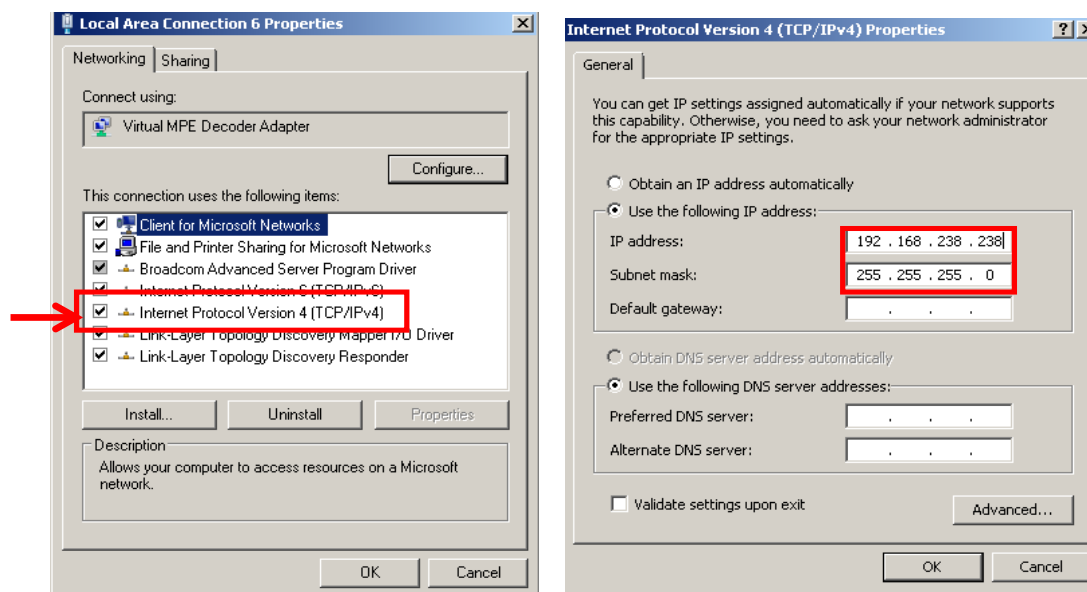
- f) Virtual MPE Decoder Adapter Configuration.

We now need to define the network address of the virtual network card presented by the software so that TelliCast knows where to find its data

Open “Network & sharing Center”. Go to “Change adapter Settings”. Double Click on the “Virtual MPE Decoder Adapter” and select properties.



g) Change the IP address to 192.168.238.238 and the subnet mask to 255.255.255.0



Note : It is suggested to uncheck all the items in the items list, except Internet Protocol Version 4 (TCP/IPv4). This may reduce the load on the network "card".

5 CHANNEL TUNING USING BDADATAEX

As an alternative to the TBS IP Tool, a generic IP tool made by CrazyCat can be used. It works with many DVB devices. The choice is up to the users.

5.1 BDADDataEx installation

You can find the latest BDADDataEx software at the CrazyCat BDADDataEx web site :

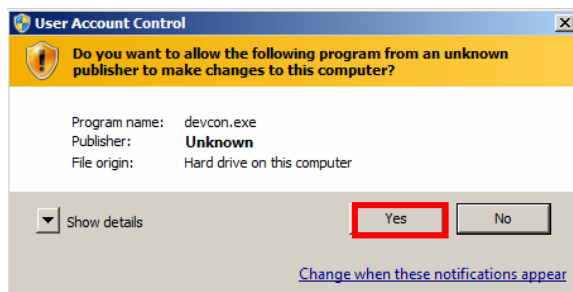
<http://crazycatlab.sat-fishers.com/bdadataex.html>

The version used for EUMETSAT testing was v.1.1.2.1240

- Download / unzip BDADDataEx.exe and Common files BDADDataEx (Tap-Win32-driver, dll, sounds) on your disk
- Under the tap-win-dvb subdirectory there are two directories (i386 and amd64). If your system is a 32bit WIN OS go to the i386 otherwise if it is a 64bit WIN OS go to the amd64.
- Install the TAP drivers

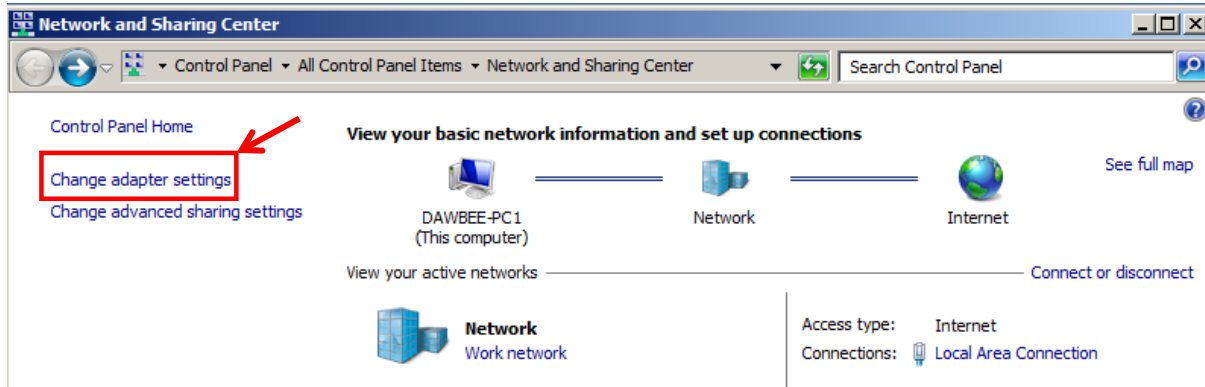
 **install.cmd** ← Double Click and run

- If you see a Security Warning just click “Yes”

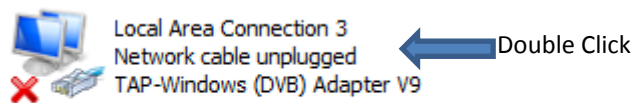


5.2 Windows Emulated Network Adapter Configuration

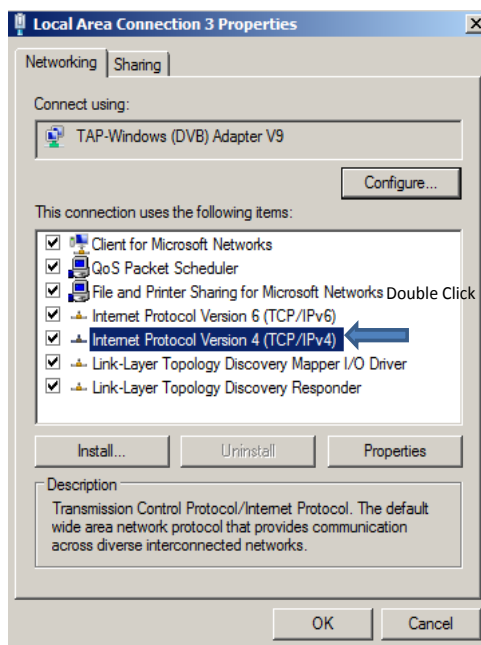
- a) Open Network & Sharing Center & select “Change adapter settings”



- b) Double click on TAP Network Connection. We will define the network address of the virtual network card presented by the software so that TelliCast knows where to find its data.

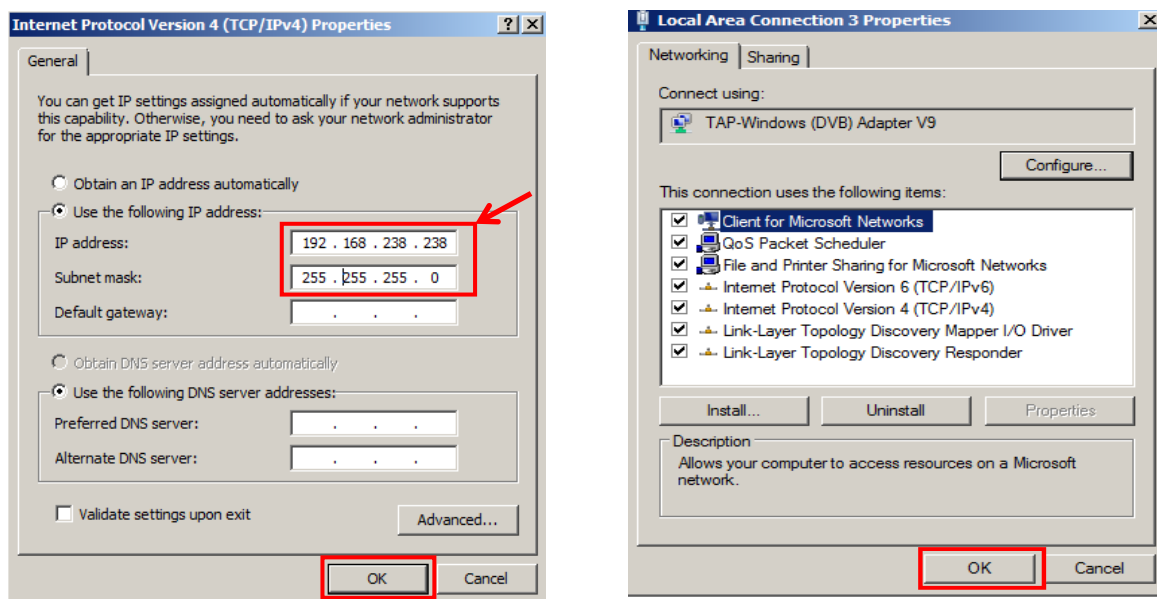


- c) Double click on the “TCP/IPv4”



- d) Use 192.168.238.238 for IP address & Subnet Mask 255.255.255.0 and click OK.

Close the main Local Area Connection Properties window by clicking on “OK”



5.3 BDADDataEx Configuration

5.3.1 Automatic Configuration

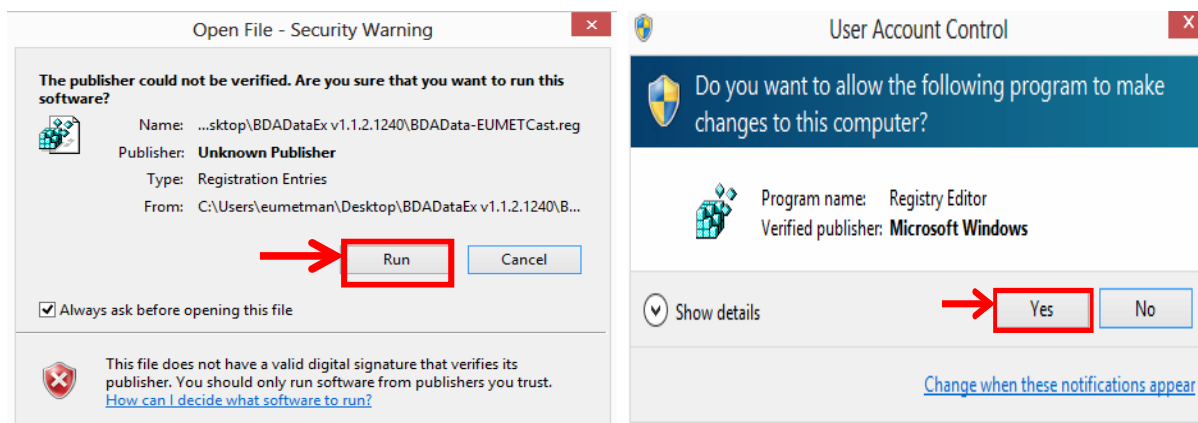
- a) Download the BDADData-EUMETCast.reg file from the EUMETSAT ftp site :

ftp://ftp.eumetsat.int/pub/OPS/out/user/EUMETCast_Support/EUMETCast_Licence_cd/Windows/DVB_devices/TOOLS/

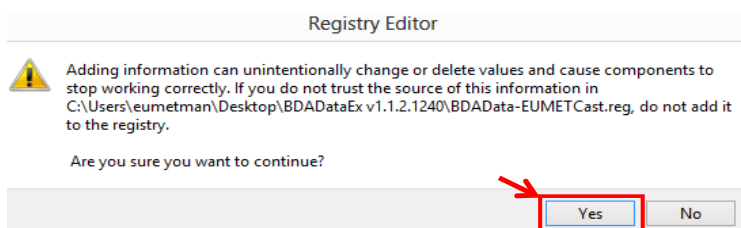
- b) Double click on the BDADData-EUMETCast.reg file.



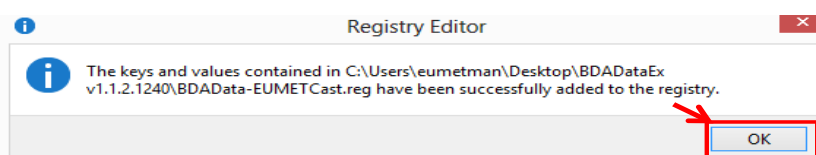
- c) If you see the following security messages just click “Run” and “Yes”



- d) On the “Registry Editor” Window click on “YES”



- e) If settings successfully added to the registry, you get the following message. Click then on “OK”.

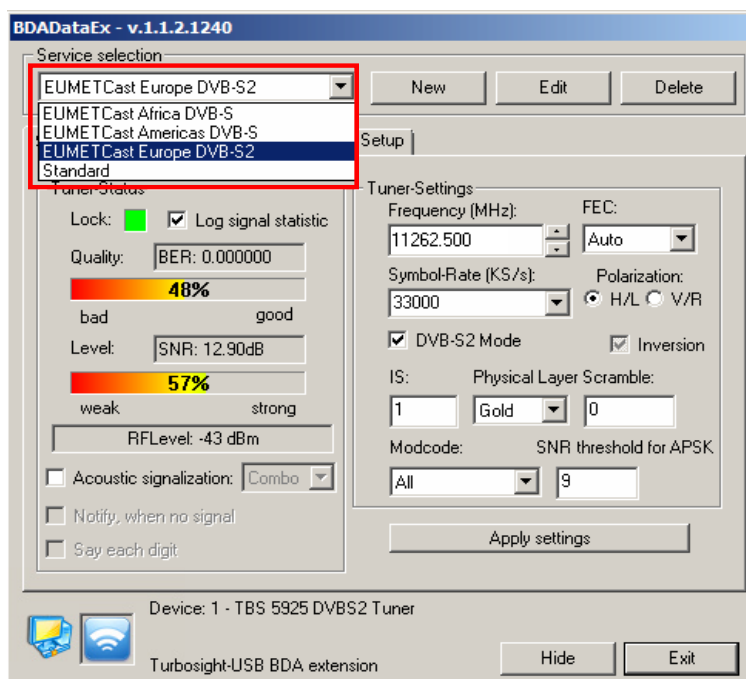


- f) Start the BDADDataEx program

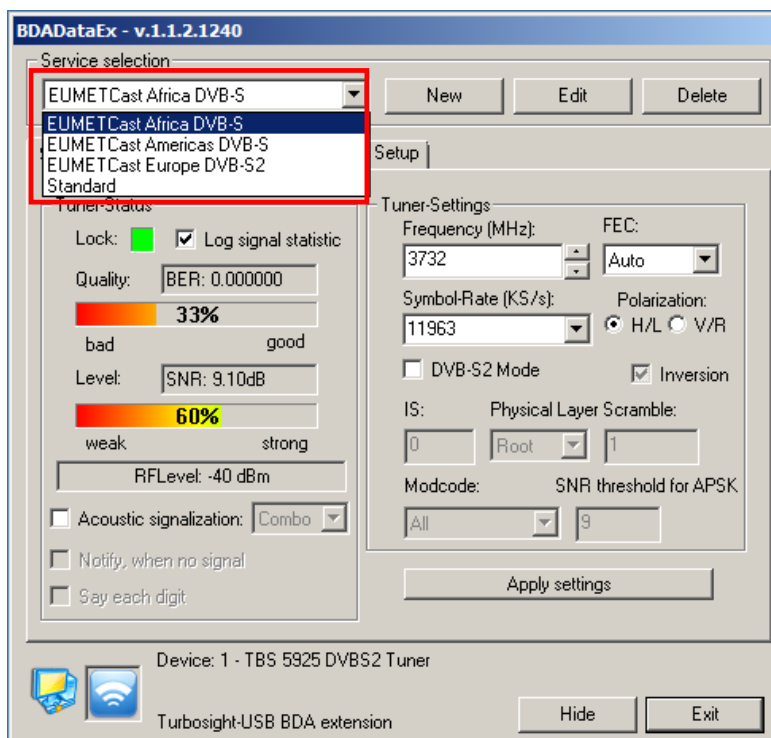


- g) In the pop up window and in the first TAB “Status/Tuner” select the needed Service. (EUMETCast Europe DVB-S2, EUMETCast Africa DVB-S, EUMETCast America DVB-S).

If everything is OK the “Tuner-Status” should be green, if not check your reception (antenna pointing, optimization, cabling etc) :



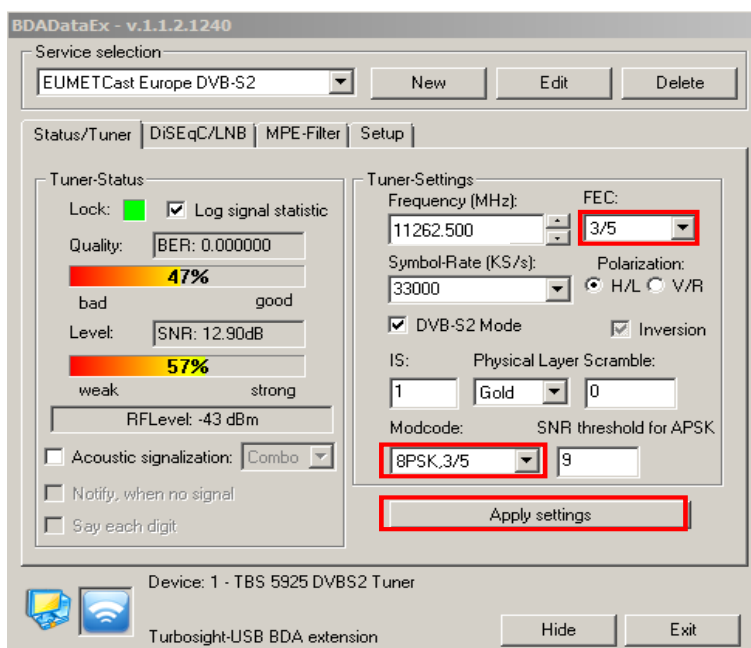
EUMETCast Europe, DVB-S2, Ku-Band



EUMETCast Africa, DVB-S, C-Band

5.3.2 Disabling the High Volume Service

To disable the High Volume Service (HVS) on EUMETCast Europe and receive only the Basic Service (BS) change the FEC from “All” → “3/5”, “Modcode” from “All” → “8PSK,3/5” and click on “Apply settings”.



6 TELICAST AND SYSTEM CONFIGURATION SETUP

6.1 Tellicast Setup

After the steps above have been completed, the Tellicast application must be given the fixed IP from which the data can be taken:

Into the configuration file `cast-client_XXX.ini` the "`interface_address`" must be set to the reception host local IP Address:

`interface_address=192.168.238.<nnn>`

e.g.

`interface_address=192.168.238.238`

N-B: The `interface_address` parameter can be commented or deleted from `cast-client_XXX.ini` and the Tellicast application will search the multicast data on all the interfaces available on the host; that is not recommended when the reception host is used to receive another data flow, the Tellicast client application is not able to distinguish between the flows a priori!

6.2 Firewall

Make sure the firewall allows traffic from the interface address in 6.1!

6.3 Windows Routing Table

If the TelliCast fails to work, being either stuck in the yellow T-icon state or, if the network cable is connected after the system was working, the icon alternates between the "pink" and "red" states.

This may be related to the default multicast entries in the TCP/IP routing table.

To solve this problem, you need to tell Windows that the addresses handled by Tellicast must always be reached through the `interface_address` which you set up in `cast-client_XXX.ini` file (192.168.238.nnn).

In the Start menu, All Programs, Accessories menu, you will find an item named Command Prompt.

Right-click on this item, and select Run as administrator. Enter the following command (replace `IP_address` with the local IP address of 6.1) :

`route delete 224.0.0.0` (Please note that this might disable services which use multicast as protocol e.g. streaming services.

`route -p ADD 224.0.0.0 mask 240.0.0.0 IP_address metric 1`

e.g., if `IP_address` = 192.168.238.238

`route delete 224.0.0.0`

`route -p ADD 224.0.0.0 mask 240.0.0.0 192.168.238.238 metric 1`

Then restart the computer

7 ACRONYMS

BS	Basic Service
DVB-S, DVB-S2	Digital Video Broadcast, a broadcast standard
EUMETCast	EUMETSAT multicast based broadcast system
EUMETSAT	European Meteorological Satellite Organisation
HVS	High Volume Service
ISI	Input Stream Identifier
LNB	low-noise block downconverter
MODCOD	Modulation & Coding
PID	Packet IDentification