UT-100/PT-100 DVBT
TS Player User Guide

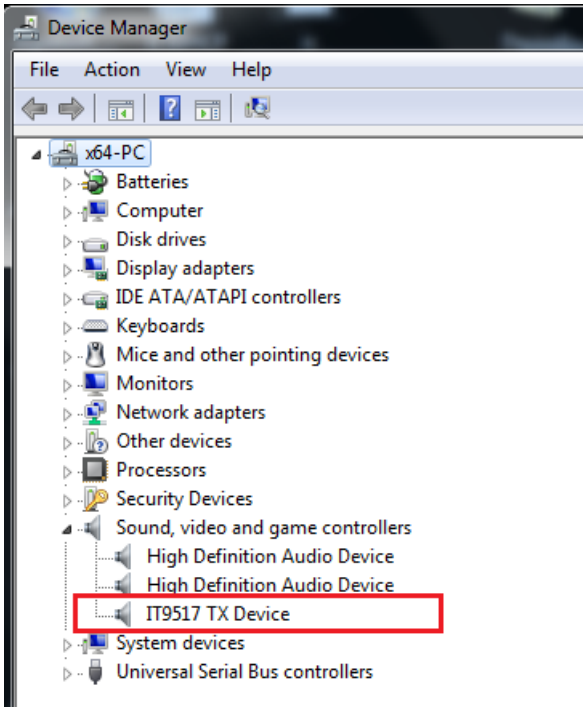
1. Introduction

HiDes TS Player is an intuitive transport stream player for Windows. It is designed to feed the TS to UT-100A/B/C modulator for EN 300 744 DVB-T transmission. TS player can read and play MPEG-2 compliant transport streams. You can get the TS file from live digital TV signal or from 3'rd party conversion tools.
A cost-effect commercial conversion tool, MediaExpresso from Cyberlink (www.cyberlink.com) is recommended, and a brief guide about converting TS files for TS Player from regular media files with MediaExpresso is included.
Besides, a simple trans-coding tool "Media2TS" is included in this package release. For more details, please refer to the user's guide in the package folder \Media2Ts.

Some sample TS files can be found in the package folder \TS Files.

2. Quick Start Guide

Step 1: Following UT-100 QIG to install device and driver.
Please double check if the driver is installed well,
"Control Panel" -> "Device Manager", there should be a device named "IT9507 TX Device" in "Sound, video and game controllers" category, as shown below,

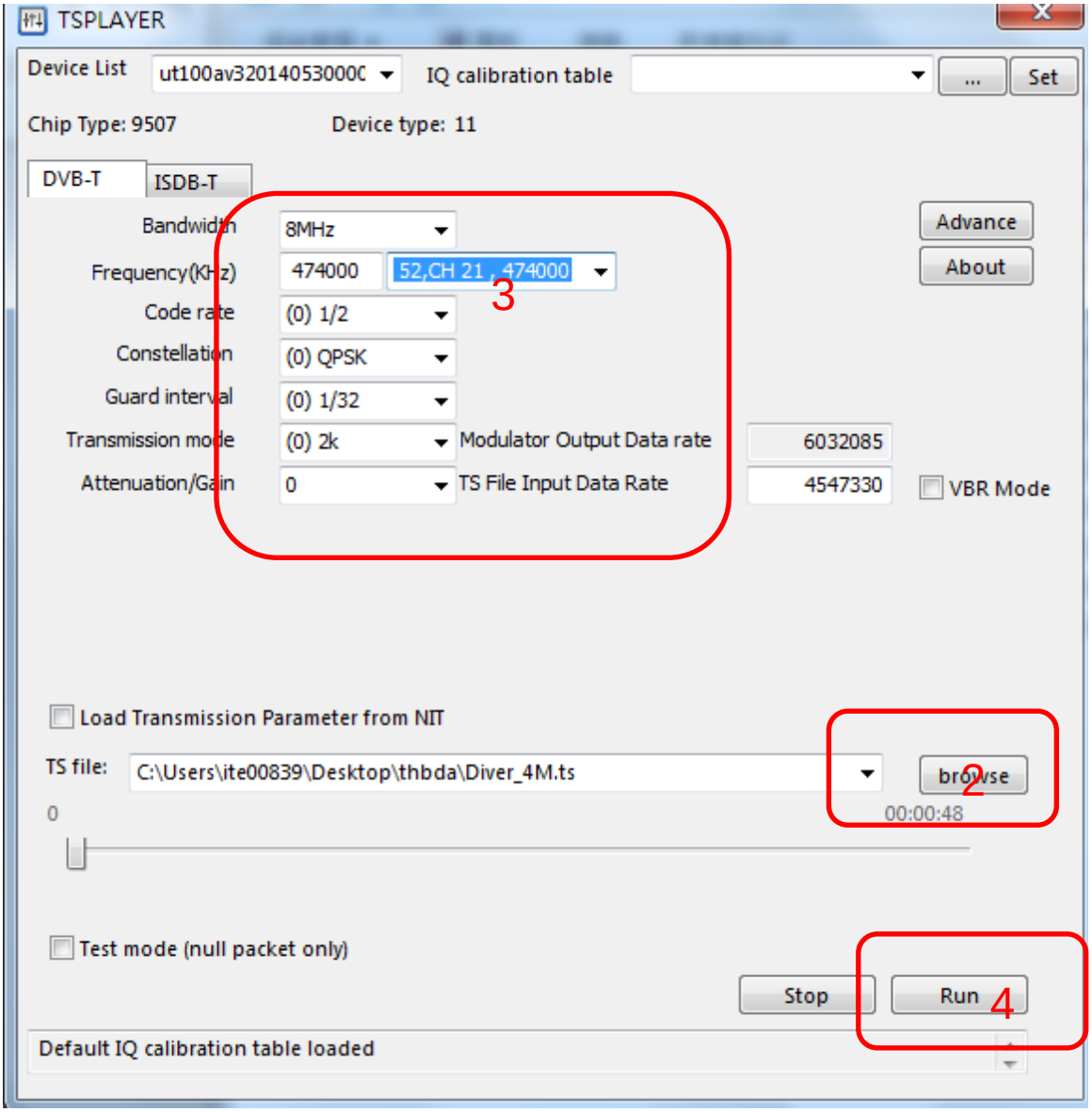


Step 2: Copy the folder "\TsPlayer" on the CD to your local hard disk, then run TsPlayer.exe in the hard disk folder and click on "browse" button to select a TS

file.

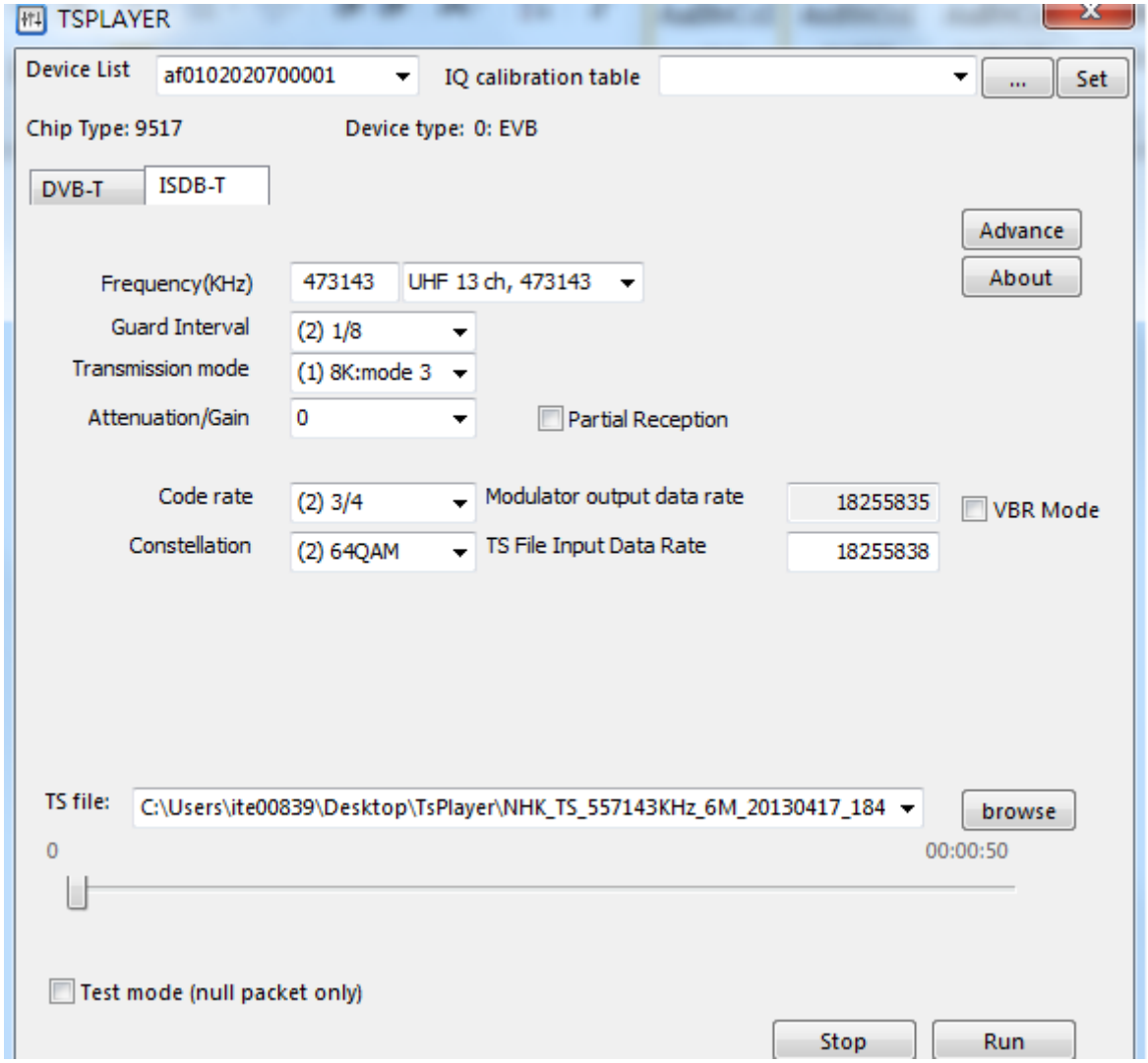
Step 3: Setting transmission parameters in “Configuration”. You can set Frequency, Bandwidth, Code rate, Guard interval, etc. Please be noted the transport stream may not be decoded properly by your receiver if you change the configuration.

Step 4: Click on “Run” button to start streaming the transport stream file.



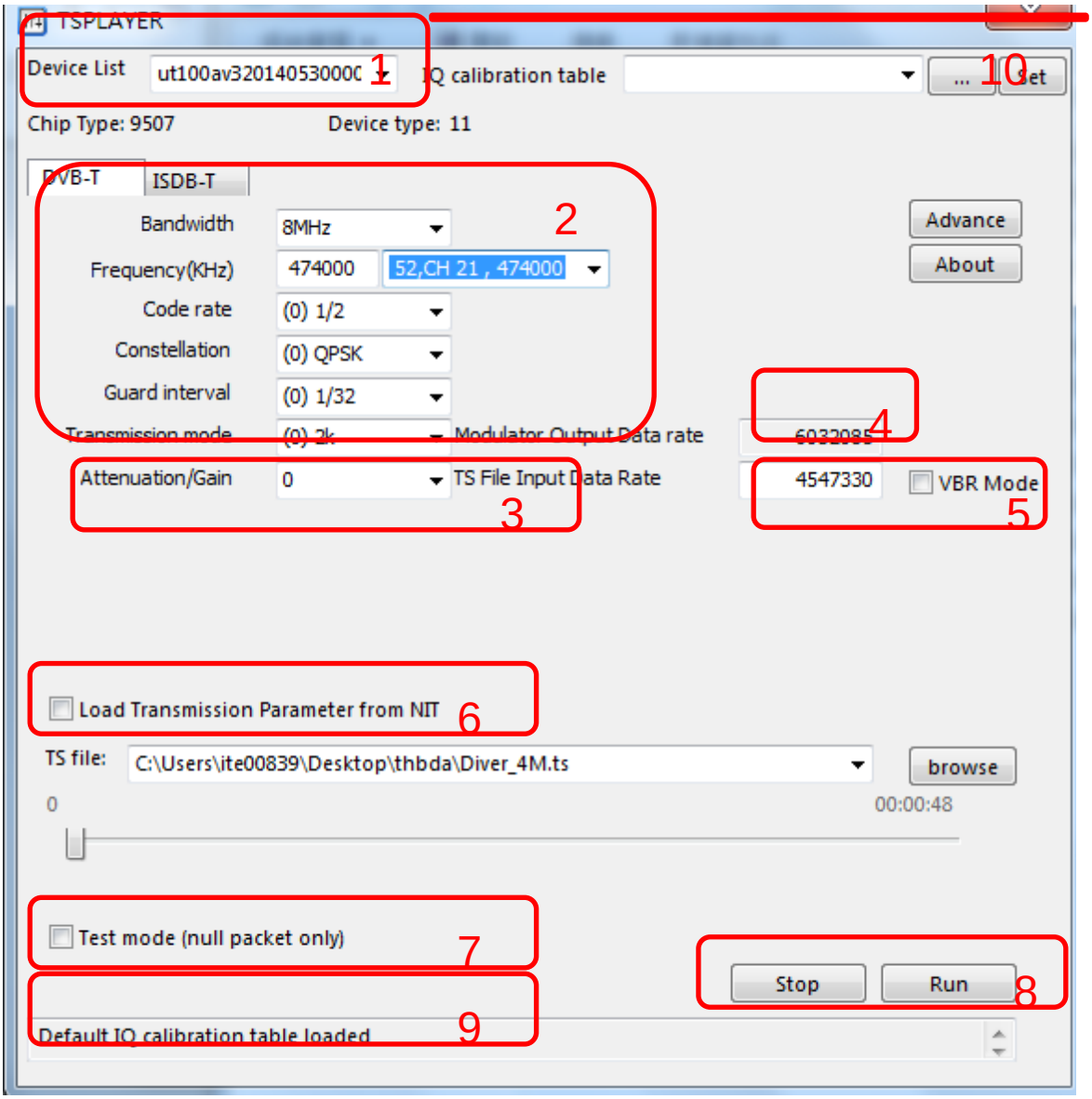
3. Operation Guide

You can click on the “Browse” button to import a TS file. After analyzing a transport stream file, you will see the following window. You can see the device list, and configuration menu



TS PLAYER User’s Interface

3.1. Streaming control panel



Group Number	Function	Description
1	Device List	It shows all UT-100 installed on your PC. User can select either device and select it as the active one. The active device's information is shown, including the chip and device type.
2	Modulator Transmission Settings	You can change the modulator settings by selecting different bandwidth, frequency, code rate, constellation mode, guard interval, and the transmittion mode. Different modulator settings will change the Modulator Output Data rate. Basically, the Modulator Output Data rate should be equal to or larger than the TS file input data rate (group 4).
3	Attenuation/Gain for output power control	The RF output power is configurable, from -25dB~+12dB, step size 1 dB. In most practical configurations, the maximum gain may only be up to +6 dB.
4	Modulator output data rate	The transmitter output data rate of modulator settings in group 2.
5	TS file input data rate	The data rate of the TS file. When a TS file is read, TS Player will calculate its default data rate by checking PCR's in the file automatically. In case of wrong calculation, the input data rate can be entered manually. TSPlayer will push the stream in constant data rate based on this value. **If the stream is variable data rate, please check the "VBR mode" box, then TSPlayer will push the stream based on PCR value. The TS files generated by Media2TS or Cyberlink MediaExpresso should be in VBR mode.**

		The sample files in the folder \TS Files are constant data rate, and VBR mode can be disabled.
6	Load Transmission Parameters from NIT	It's optional to get the default transmission settings in the stream's NIT table.
7	Test mode (Null Packet only)	If checked, no TS input file is required. It will only transmit null packets.
8	Stop/ Run for playback control	This group provides controls for the playback, including run, stop, and scrolling.
9	Message	Messages for system status
10	IQ calibration table	It can be loaded to further optimize UT-100 RF output quality. By default, IQ_Table.bin will be loaded if it exists with TsPlayer.exe in the same folder. ● Refer to details below:

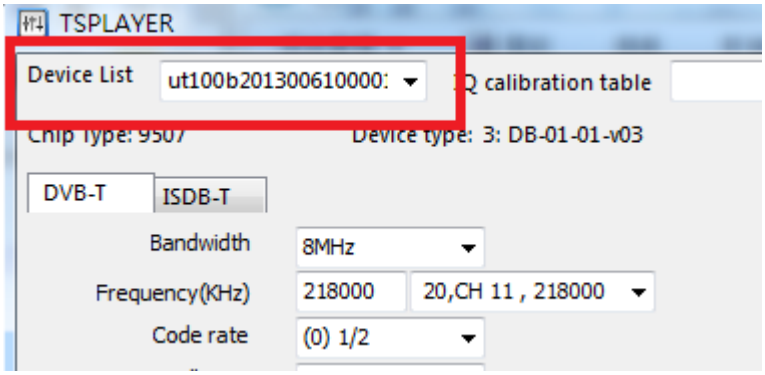
*IQ Table list

IQtable_PT100: IQ

	File name	Device
1	IQtable_PT100.bin	PT-100 4 channel PCIe Tx card
2	IQtable_UT100V03.bin	UT-100 V03 USB dongle
3	IQtable_UT100V04-v2.bin	UT-100 V04 USB dongle, v2 production lot
4	IQtable_UT100V04-v3.bin	UT-100 V04 USB dongle, v3 production lot

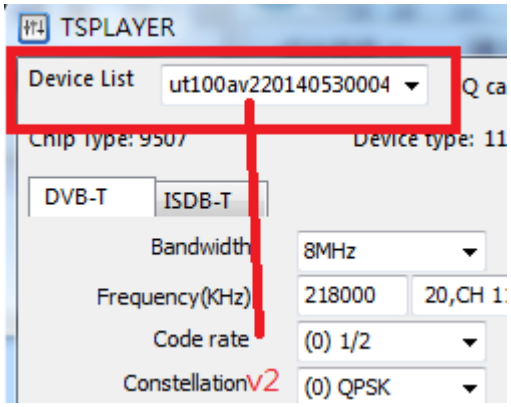
From the device name shown in the device list box, you can identify the types of UT-100 dongles.

UT-100 v03, the device type is 3



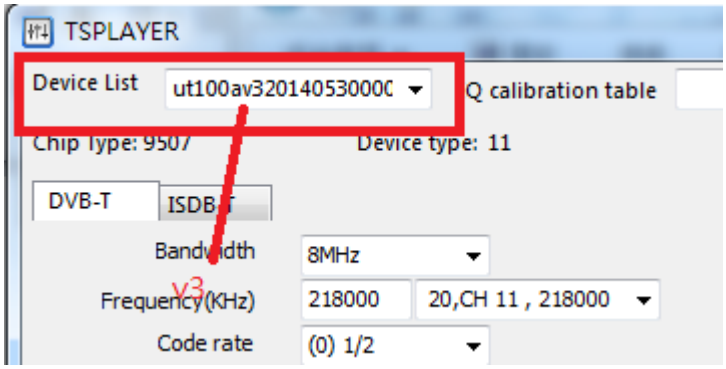
UT-100 v04, the device type is 11

The name in device list shows the production lot is “v2”, “UT-100A v2”

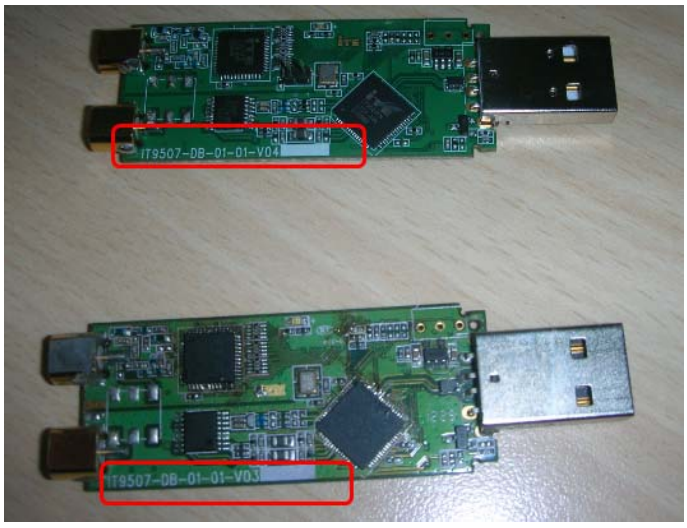


UT-100 v04, the device type is 11

The name in device list shows the production lot is “v3”, “UT-100A v3”



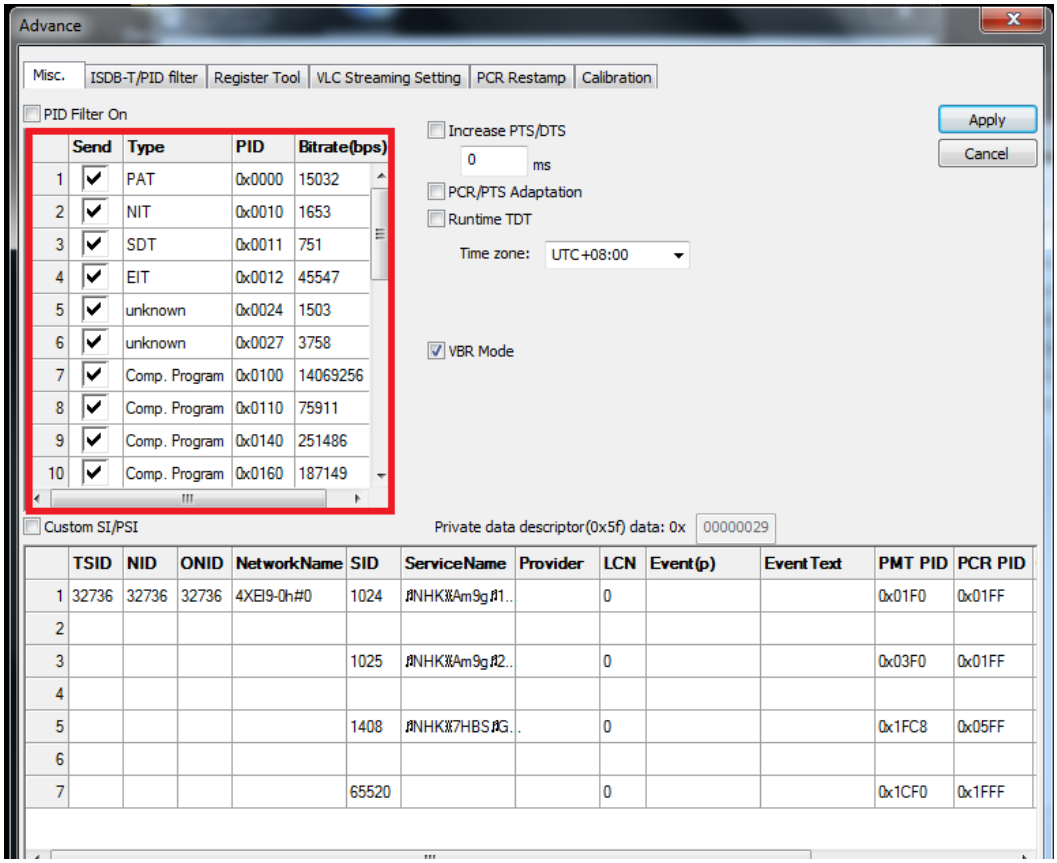
Refer to the following picture to identify between UT-100 V03 and UT-100 V04



3.2. Advance functions

After clicking on “Advance” button, you can see the window for advanced functions such as PID filter, custom SI/PSI, PCR/PTS adaptation, etc.

3.2.1 PID Table

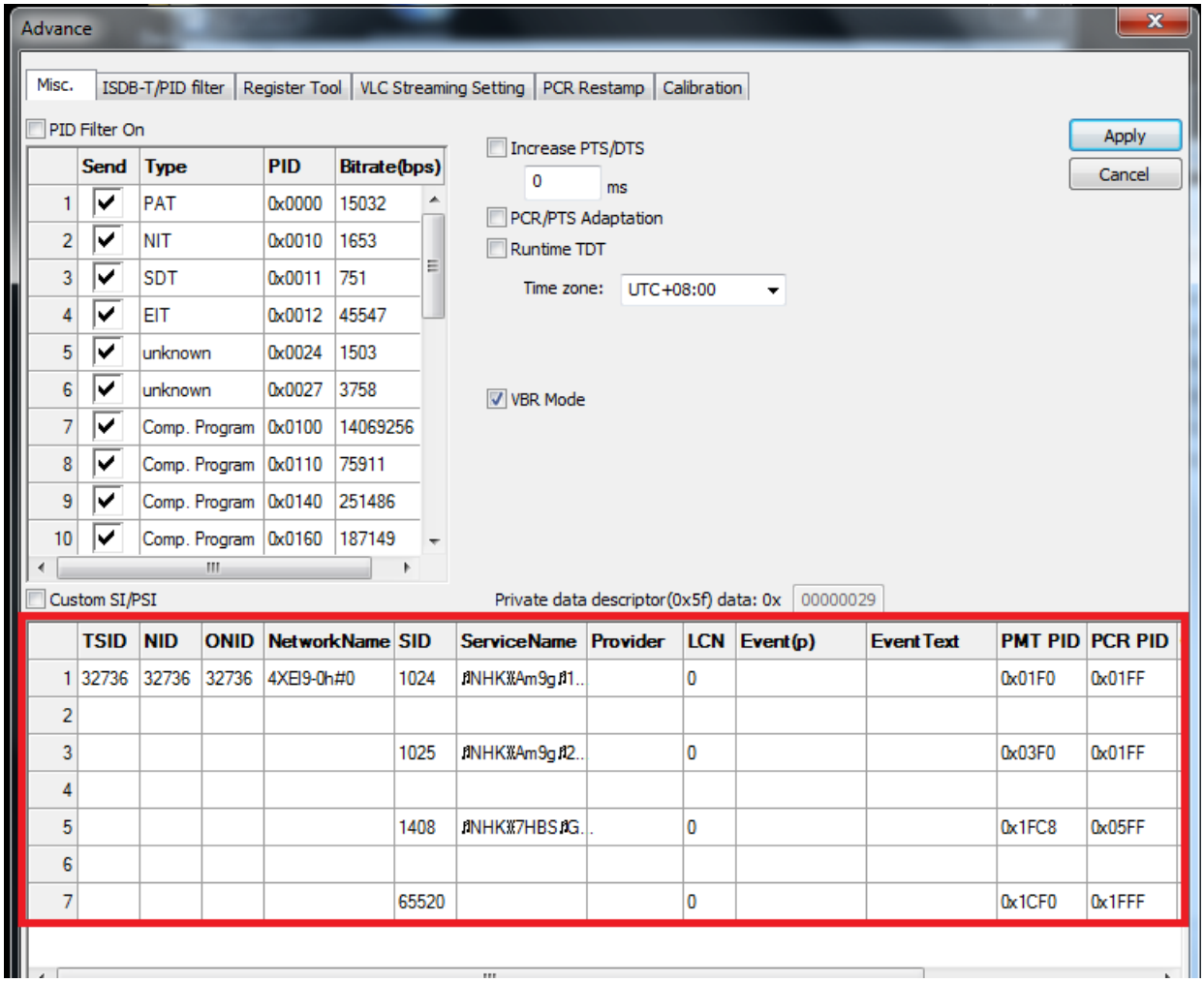


	Send	Type	PID	Bitrate(bps)
1	✓	PAT	0x0000	15032
2	✓	NIT	0x0010	1653
3	✓	SDT	0x0011	751
4	✓	EIT	0x0012	45547
5	✓	unknown	0x0024	1503
6	✓	unknown	0x0027	3758
7	✓	Comp. Program	0x0100	14069256
8	✓	Comp. Program	0x0110	75911
9	✓	Comp. Program	0x0140	251486
10	✓	Comp. Program	0x0160	187149

	TSID	NID	ONID	NetworkName	SID	ServiceName	Provider	LCN	Event(p)	Event Text	PMT PID	PCR PID
1	32736	32736	32736	4XEI9-0h#0	1024	⁋NHK⁑Am9g⁋1..		0			0x01F0	0x01FF
2												
3					1025	⁋NHK⁑Am9g⁋2..		0			0x03F0	0x01FF
4												
5					1408	⁋NHK⁑7HBS⁋G..		0			0x1FC8	0x05FF
6												
7					65520			0			0x1CF0	0x1FFF

TS PLAYER can parse the TS file and list all PID’s inside, including types, PID values, and the bit rate. If necessary, user can filter (block) PID’s by checking “PID Filter On” and then unchecking PID’s “Send” box to filter them out during transmission.

3.2.2 SI/ PSI information



TS PLAYER will read and parse the PSI/ SI data from within the TS file and display following information if it's available in the stream:

-Transport Stream ID.

-Original Network ID.

-Network Name.

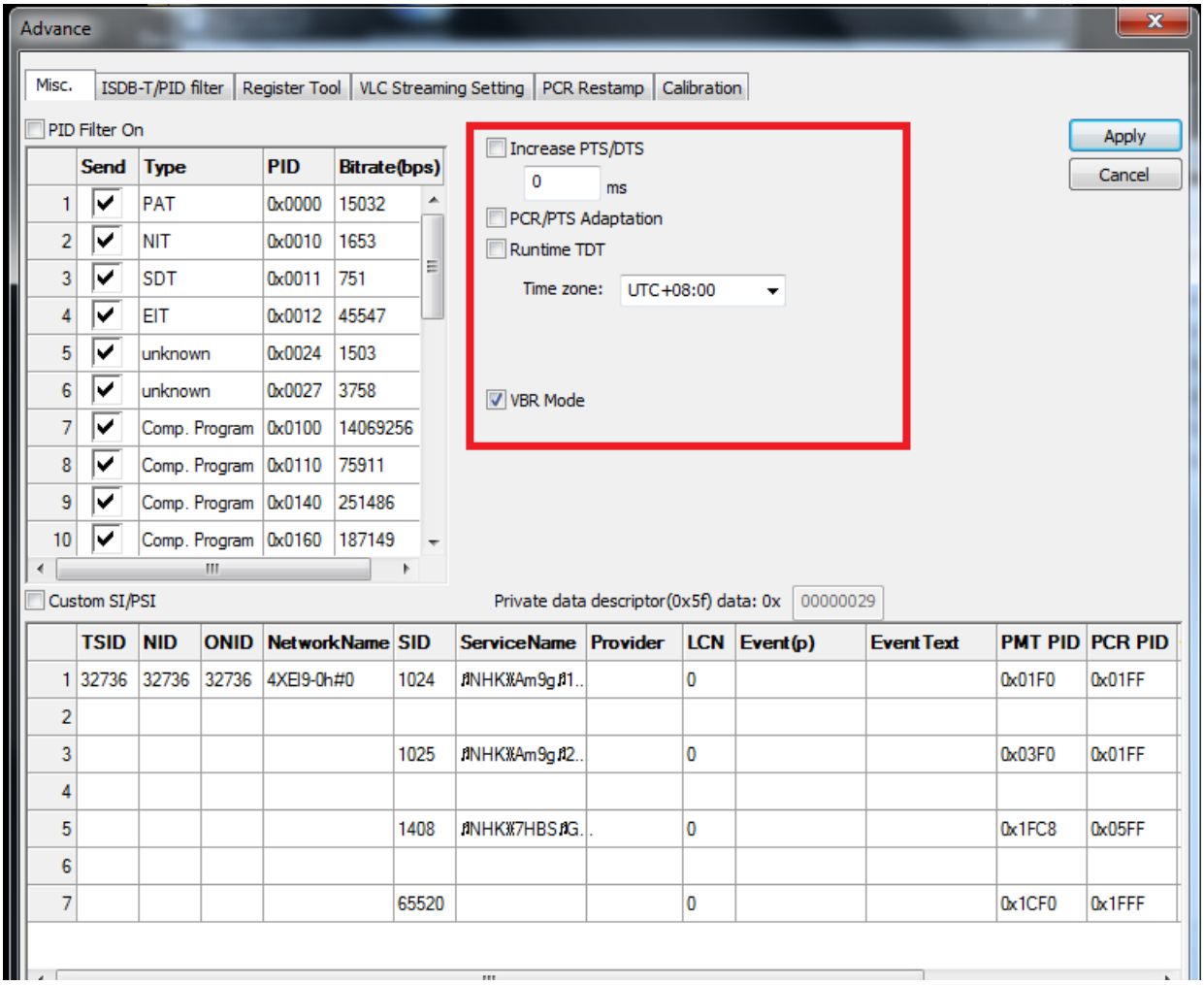
-Each program detected in the stream.

-Service ID, Service Name, Provider Name, PMT PID, PCR PID, and LCN for each program.

-Under each program: PID#, Stream_type, Stream_ID and bitrate of each PID.

If "Custom SI/PSI" is checked, user can edit the SI/PSI table, and TS PLAYER will replace SI/PSI tables with updated information.

3.2.3 Miscellaneous options



Increase PTS/DTS: Increase the time gap between PCR and PTS/DTS.

PCR/PTS Adaptation: This feature is still under verification and should be unchecked.

Runtime TDT: Replace the TDT table with the PC system time.

4. Reset to System Default

All the settings of TSPlayer are saved under the registry key

[HKEY_CURRENT_USER\Software\TSPlayer]

You may run “regedit.exe” and delete the whole key to reset TSPlayer to system default.