MAXEYE TECHNOLOGIES

DVB-S2 Analysis Toolkit
Data Sheet

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Contents

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1. Overview

MaxEye Technologies provides signal analysis functions in LabVIEW for analyzing the standard complaint signals for various digital video broadcasting standards. **Toolkit returns standard based demodulation and spectral measurements for analyzing the quality of the received signal.**

This document contains information about DVB-S2 analysis toolkit features and supported measurements

2. DVB-S2 Signal Analysis Toolkit

2.1. Technical Description

The MaxEye Digital Video Broadcasting Analysis Toolkits extends LabVIEW tools and functions with National Instruments RF Signal Analyzer (NIRFSA) and NI USRP to analyze digital video broadcasting test signals that confirm to their respective standard specifications for various standards. Table 1 gives the details of the standard specifications for each of the supported standard.

The toolkit coding, modulation and other parameters can be easily configured using the LabVIEW API VIs to analyze custom waveform for specific test requirements.

Table 1 Digital Video Broadcasting Standard Specifications

Sl.no	Standard Name	Specifications
1	DVB-S2	**ETSI EN 302 307 V1.3.1** (2013-03) (Digital Video Broadcasting (DVB); Second Generation framing structure, channel coding and modulation systems for Broadcasting, Interactive Services, News Gathering and other broadband satellite applications (DVB-S2)

2.2. Key Features

The following section has key features and measurements supported in the DVB-S2 signal analysis toolkit.
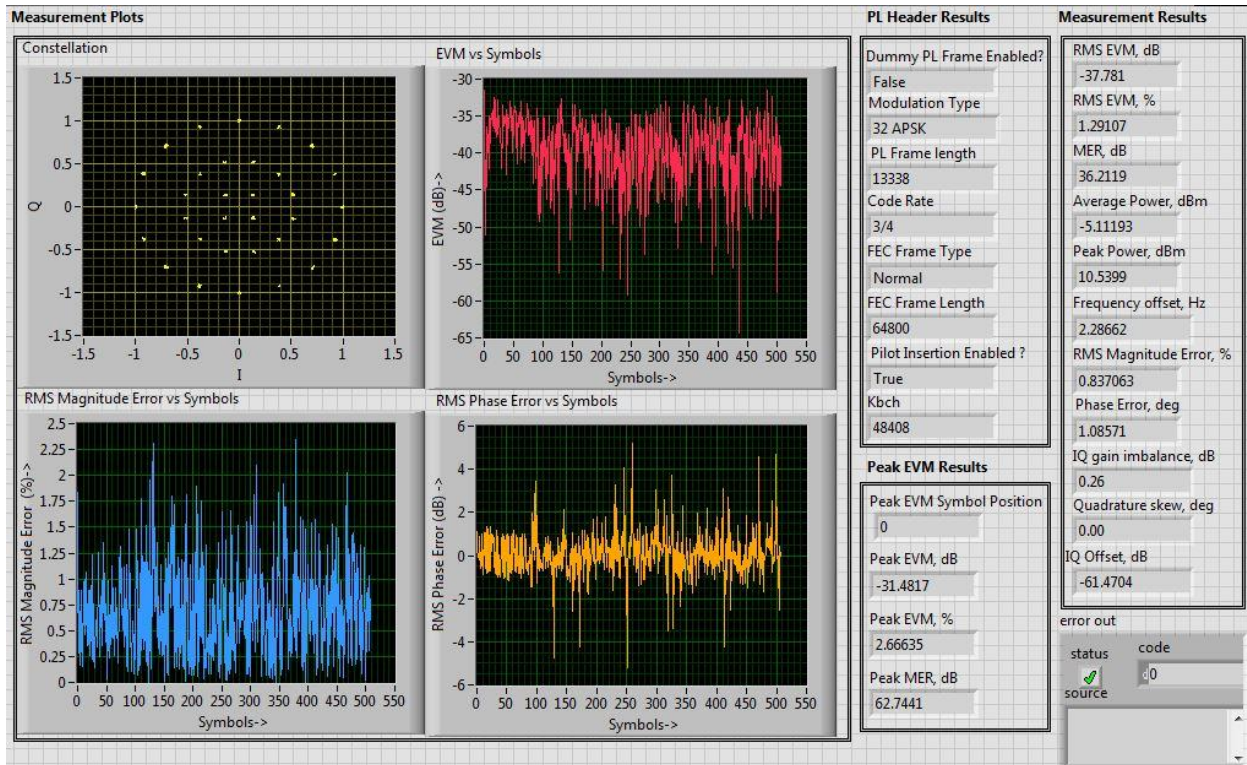
This toolkit offers standard based test solution for designing, evaluating and manufacturing Digital video broadcasting- satellite (DVB-S2) equipment's. Digital Video Broadcasting - Satellite - Second Generation (DVB-S2) is a digital television broadcast standard that has been designed as a successor for the popular DVB-S system. It was developed by the DVB Project, an international industry consortium, and ratified by ETSI (EN 302307) in March 2005. Features include enhanced modulation schemes up to 32APSK, additional code rates, Constant and Variable Coding Modulation and the introduction of a generic transport mechanism for IP packet data including MPEG-4 audio–video streams, while supporting backward compatibility with existing MPEG-2 TS based transmission.

MaxEye DVB-S2 analysis toolkit is an ideal tool for analyzing the signal quality of the transmitted signal. Toolkit provides various measurement traces to enable the engineers to analyze, troubleshoot and validate the transmitter signal issues. The toolkit measurements can be used to calibrate the DVB-S2 transmitter. The EVM vs Symbols enable the time domain analysis of the transmitted signal to identify the issues in the transmitted signal. Other traces that are supported include RMS Magnitude Error vs Symbols and RMS Phase Error vs Symbols.

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DVB-S2 Specific	Supported Configurations
Symbol Rate	Up to 80MHz
Roll-off Factor	0.20. 0.25, 0.35
Samples Per Symbol	User configurable
Code Rate	1/4, 1/3, 2/5, 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9 and 9/10
Modulations	QPSK, 8PSK, 16 APSK, 32 APSK
PL Header Handling	Decoding of PL Header Parameters
Pilot Insertion Enabled	False and True
FEC Frame Type	Normal and Short
Outer coder	BCH
Inner coder	LDPC
Measurements	

Demodulation Measurements	**Error Vector Magnitude**
	  RMS EVM
	  Peak EVM
	Modulation Error Ratio
	  MER
	  Peak MER
	RMS Magnitude and Phase Error
	Power Measurements
	  Average Power
	  Peak Power
	Frequency Offset
	Gain Imbalance
	Quadrature Skew
	IQ Offset
	PL Header Results
	  Dummy PL Frame
	  Modulation Type
	  Code Rate
	  PL Frame Length
	  FEC Frame Type
	  FEC Frame Length
	  Pilot Insertion Enabled
	  Kbch (BCH Uncoded Block)Length
	Measurement Traces
	  Constellation Graph
	  EVM Vs Symbols
	  MER Vs Symbols
	  RMS Magnitude Error vs Symbols
	  RMS Phase Error vs Symbols

Spectral Measurements	Center Channel Power
	Adjacent Channel Power
	Spectral Emission Mask
	Spectral Mask Margin
Common Toolkit Features	
LabView API	The toolkit properties are configured using the Set/Get LabVIEW API Vis. All API VIs has documentation support and Icons.
Programming Examples	Programming Examples to help users using the LabVIEW API VIs

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3. Software Maintenance and Support

MaxEye offers cost effective software maintenance and support for your application development and automated test environment with free software upgrade for all the supported features of the toolkits. MaxEye offers technical support through our engineers who are domain experts in the digital video broadcasting test solutions. For more details about our support program please contact us at info@maxeyetech.com.

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