

R&S[®]SMCVB-KV15

DVB-T2 Waveforms

User Manual



1179280202
Version 04

ROHDE & SCHWARZ
Make ideas real



This document describes the following software option:

- R&S®SMCVB-KV15 DVB-T2 Waveforms (1434.5492.xx)

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1179.2802.02 | Version 04 | R&S®SMCVB-KV15

Throughout this document, R&S® is indicated as R&S.

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1 Welcome to the R&S SMCVB-KV15 option

The R&S SMCVB-KV15 is a waveform library that provides waveform files in accordance with the DVB-T2 digital standard.

This user manual contains a reference description of the functionality that the waveform library provides. All functions not discussed in this manual are described in the R&S SMCV100B user manual. The latest version is available at:

www.rohde-schwarz.com/manual/SMCV100B

1.1 Key features

The R&S SMCVB-KV15 features:

- Numerous waveform files in accordance with DVB-T2 digital standard
- Efficient use with dedicated waveforms

1.2 Installation

Required options

The equipment layout for processing files of waveform libraries includes:

- R&S SMCV100B base unit, including arbitrary waveform generator (64 MSample ARB memory, 60 MHz RF bandwidth)
- Waveform library option (R&S SMCVB-KVxx)

For more information on ARB options, see chapter "Using the arbitrary waveform generator (ARB)" in the R&S SMCV100B user manual.

To register for access to the libraries

R&S SMCV100B stream and waveform libraries are available for download for registered users on the "Vector Signal Generator Customer Web" at the global Rohde & Schwarz information system (GLORIS).

1. For access, register at <https://gloris.rohde-schwarz.com>:
In the section "How to register", follow the instructions provided in the introduction video "How to register for GLORIS".
2. Register to GLORIS with the creation of a personal account.

Mr.
 Mrs.
 Ms.
 No information

First Name Last Name

Email

Country City

Company

Reason for registration
 Please tell us the reason for your registration (i.e. which product you have or what kind of information you want to get). If you already have a contact person at Rohde & Schwarz, please add the email address of your contact as well.

Password Retype Password

I accept the [Terms of Use](#) for a global Rohde & Schwarz Extranet account
 I accept the following [Marketing Permission](#)
 I want to register for e-commerce

Register Now

3. For access to the "Vector Signal Generator Customer Web", provide the following information:
- Specify that you want access to the "Vector Signal Generator Customer Web".
 - Include the material number and serial number of your device.
The label is located on the rear panel of the R&S SMCV100B.
- a) When using a new GLORIS account, fill the information in the "Reason for registration" field.

Reason for registration

Please tell us the reason for your registration (i.e. which product you have or what kind of information you want to get). If you already have a contact person at Rohde & Schwarz, please add the email address of your contact as well.

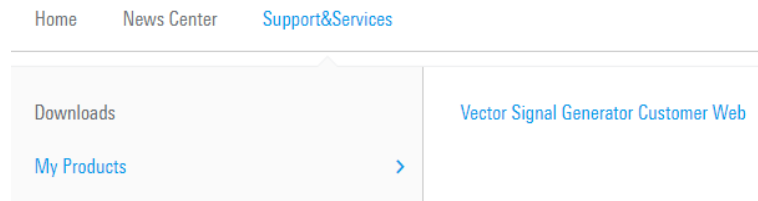
- b) When using an existing GLORIS account, click "Customer support" and fill in the information into an email.

Contact

E-Mail [Customer Support](#)

To access "Product Related Documents"

1. Log in to GLORIS.
2. In the menu bar, select "Support&Services > My Products > Vector Signal Generator Customer Web".



The "R&S SMCV100B Customer Web" page opens.

3. In the selection field "Product Selection for VSG", select "R&S®SMCV100B".

A webpage opens and displays search results for products related to the R&S SMCV100B.

Product Related Documents



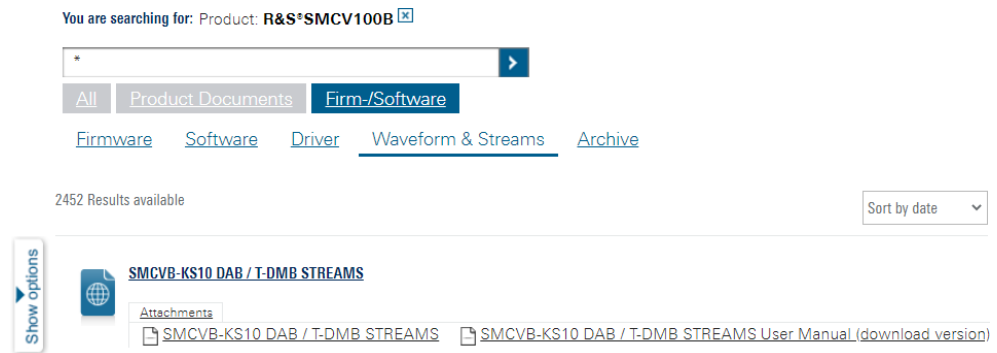
To download a library file

This procedure describes how to download library files. It provides a step-by-step description for download of a stream library file. The download of waveform library files is analogous.

1. Access the "Product Related Documents" webpage as described in "[To access "Product Related Documents"](#)" on page 6.
2. In the search navigation bar, select "Firm-/Software" > "Waveform & Streams".

The search lists all information related to stream and waveform libraries of the R&S SMCV100B:

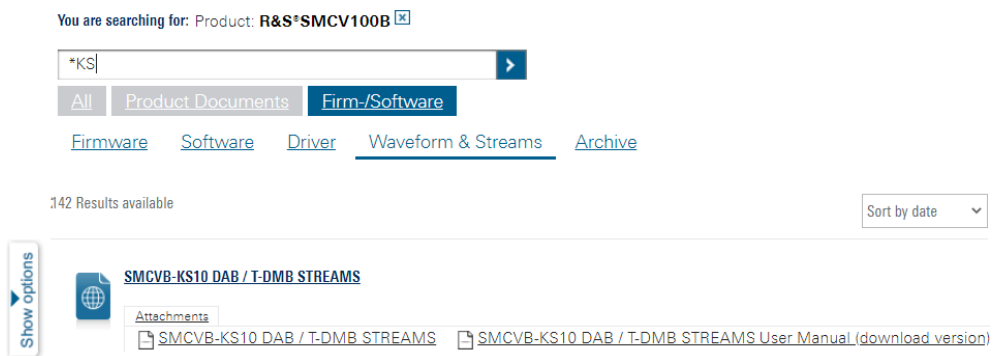
- R&S SMCVB-KSxx results relate to stream libraries.
- R&S SMCVB-KVxx results relate to waveform libraries.



3. Optionally, deactivate the filtering to display all waveform and stream library content.
 - a) On the left menu, select "Show options".
 - b) Click "Filtering on. Reset all filters."

Filtering on. Reset all filters.

4. Optionally, to filter for stream library content enter *KS in the search input field.



5. In the search result list, navigate to the required library.
6. To download required library files, click the download link in the "Attachments" section of the library product page.
For example, for DAB/T-DMB streams, click the download link "R&S SMCVB-KS10 DAB / T-DMB STREAMS".

A download dialog opens to select and save files of the stream library.

To save a library file

- ▶ Save the library file to one of the following storage locations:
 - External storage device (HDD, memory stick): Use an external USB storage device to save large files or complete libraries. Connect the storage device to one of the USB 3.0 connectors on the rear panel of the R&S SMCV100B. If detected correctly, you can access the files on the R&S SMCV100B in the /usb/ directory in the file-select dialogs.

The R&S SMCV100B supports the following storage formats: ext2/ext3/ext4, FAT16/FAT32, NTFS (read-only), ISO9660, UDF

- Internal memory (SSD): Use the internal memory to save single files to the user directory `/var/user/` of the R&S SMCV100B, for example, using FTP via a LAN connection.

To load and play a waveform library file

1. Load the waveform file from its storage location:
 - External storage device (HDD, memory stick): Load the file from the `/usb/` directory.
 - Internal memory (SSD): Load the file from the user directory `/var/user/`

Note: Library files are encrypted files. Loading the library file at the R&S SMCV100B requires installation of the corresponding library option. See "[Required options](#)" on page 5.
2. To load the file at the R&S SMCV100B, select the file in the dialog "Baseband" > "ARB" > "Load Waveform".
3. To select the file, navigate to the storage location (1).
4. Select "ARB" > "State" > "On".
The R&S SMCV100B processes the waveform file.
5. In the block diagram, select "RF" > "On"
The waveform file is modulated onto the RF carrier and output at the RF 50 Ω connector.

For more information on loading waveform files, see chapter "How to create, generate and play waveform files" in the R&S SMCV100B user manual.

1.3 What's new

Compared to the previous version the documentation provides updated installation instructions to access, download and play waveform library files, see [Chapter 1.2, "Installation"](#), on page 5.

1.4 Documentation overview

This section provides an overview of the R&S SMCV100B user documentation. Unless specified otherwise, you find the documents at:

www.rohde-schwarz.com/manual/smcv100b

1.4.1 Getting started manual

Introduces the R&S SMCV100B and describes how to set up and start working with the product. Includes basic operations, typical measurement examples, and general information, e.g. safety instructions, etc. A printed version is delivered with the instrument.

1.4.2 User manuals and help

Separate manuals for the base unit and the software options are provided for download:

- Base unit manual
Contains the description of all instrument modes and functions. It also provides an introduction to remote control, a complete description of the remote control commands with programming examples, and information on maintenance, instrument interfaces and error messages. Includes the contents of the getting started manual.
- Software option manual
Contains the description of the specific functions of an option. Basic information on operating the R&S SMCV100B is not included.

The contents of the user manuals are available as help in the R&S SMCV100B. The help offers quick, context-sensitive access to the complete information for the base unit and the software options.

All user manuals are also available for download or for immediate display on the internet.

1.4.3 Service manual

Describes the performance test for checking compliance with rated specifications, firmware update, troubleshooting, adjustments, installing options and maintenance.

The service manual is available for registered users on the global Rohde & Schwarz information system (GLORIS):

<https://gloris.rohde-schwarz.com>

1.4.4 Instrument security procedures

Deals with security issues when working with the R&S SMCV100B in secure areas. It is available for download on the internet.

1.4.5 Printed safety instructions

Provides safety information in many languages. The printed document is delivered with the product.

1.4.6 Specifications and product brochures

The specifications document, also known as the data sheet, contains the technical specifications of the R&S SMCV100B. It also lists the firmware applications and their order numbers, and optional accessories.

The brochure provides an overview of the instrument and deals with the specific characteristics.

See www.rohde-schwarz.com/brochure-datasheet/smcv100b

1.4.7 Calibration certificate

The document is available on <https://gloris.rohde-schwarz.com/calcert>. You need the device ID of your instrument, which you can find on a label on the rear panel.

1.4.8 Release notes and open source acknowledgment

The release notes list new features, improvements and known issues of the current software version, and describe the software installation.

The software uses several valuable open source software packages. An open source acknowledgment document provides verbatim license texts of the used open source software.

www.rohde-schwarz.com/firmware/smcv100b

1.4.9 Application notes, application cards, white papers, etc.

These documents deal with special applications or background information on particular topics.

For some application sheets, see also:

www.rohde-schwarz.com/application/smcv100b

1.4.10 Videos

Find various videos on Rohde & Schwarz products and test and measurement topics on YouTube: <https://www.youtube.com/@RohdeundSchwarz>

2 Available waveform files

This chapter contains descriptions (see [Chapter 2.3, "Description of the waveform files"](#), on page 14) and complete lists of the available waveform files, ordered by file name (see [Chapter 2.2, "Waveform files list, ordered by disk number"](#), on page 13) or disk number (see [Chapter 2.1, "Waveform files list, ordered by file name"](#), on page 12).

2.1 Waveform files list, ordered by file name

Waveform file	Description	Size/Mbyte
DVBT2_VV001_A_SF12.wv	V&V ref. no. 001	232
DVBT2_VV001_A_SF26.wv		504
DVBT2_VV001_A_SF52.wv		1007
DVBT2_VV001_B_SF12.wv	V&V ref. no. 001	232
DVBT2_VV001_B_SF26.wv		504
DVBT2_VV001_B_SF52.wv		1007
DVBT2_VV003_A_SF12.wv	V&V ref. no. 003	232
DVBT2_VV003_A_SF26.wv		504
DVBT2_VV003_A_SF52.wv		1007
DVBT2_VV003_B_SF12.wv	V&V ref. no. 003	232
DVBT2_VV003_B_SF26.wv		504
DVBT2_VV003_B_SF52.wv		1007
DVBT2_VV012_SF12.wv	V&V ref. no. 012	242
DVBT2_VV012_SF26.wv		524
DVBT2_VV012_SF52.wv		1048
DVBT2_VV013_SF12.wv	V&V ref. no. 013	242
DVBT2_VV013_SF26.wv		524
DVBT2_VV013_SF52.wv		1048
DVBT2_VV014_SF12.wv	V&V ref. no. 014	242
DVBT2_VV014_SF26.wv		524
DVBT2_VV014_SF52.wv		1048
DVBT2_VV015_SF12.wv	V&V ref. no. 015	238
DVBT2_VV015_SF26.wv		515
DVBT2_VV015_SF52.wv		1031
DVBT2_VV016_SF12.wv	V&V ref. no. 016	232
DVBT2_VV016_SF26.wv		504
DVBT2_VV016_SF52.wv		1007
DVBT2_VV018_MISO_TX1andTX2_SF76.wv	V&V ref. no. 018	518
DVBT2_VV018_MISO_TX1andTX2_SF152.wv		1037

Waveform files list, ordered by disk number

DVBT2_VV018_MISO_TX1only_SF76.wv DVBT2_VV018_MISO_TX1only_SF152.wv	V&V ref. no. 018	518 1037
DVBT2_VV018_MISO_TX2only_SF76.wv DVBT2_VV018_MISO_TX2only_SF152.wv	V&V ref. no. 018	518 1037
DVBT2_VV019_SF12.wv DVBT2_VV019_SF26.wv DVBT2_VV019_SF52.wv	V&V ref. no. 019	232 504 1007
DVBT2_VV021_MPLP_SF26.wv DVBT2_VV021_MPLP_SF52.wv	V&V ref. no. 021	504 1007
DVBT2_VV022_MPLP_SF26.wv DVBT2_VV022_MPLP_SF52.wv	V&V ref. no. 022	504 1007
DVBT2_VV023_MPLP_SF26.wv DVBT2_VV023_MPLP_SF52.wv	V&V ref. no. 023	504 1007
DVBT2_VV025_MPLP_SF48.wv DVBT2_VV025_MPLP_SF96.wv	V&V ref. no. 025	499 998
DVBT2_VV026_MPLP_SF26.wv DVBT2_VV026_MPLP_SF52.wv	V&V ref. no. 026	504 1007
DVBT2_VV400_SF52.wv DVBT2_VV400_SF104.wv	V&V ref. no. 400	471 941

2.2 Waveform files list, ordered by disk number

Waveform file	Description	Size/Mbyte
DVBT2_VV001_A_SF12.wv DVBT2_VV001_A_SF26.wv DVBT2_VV001_A_SF52.wv	V&V ref. no. 001	232 504 1007
DVBT2_VV001_B_SF12.wv DVBT2_VV001_B_SF26.wv DVBT2_VV001_B_SF52.wv	V&V ref. no. 001	232 504 1007
DVBT2_VV018_MISO_TX1andTX2_SF76.wv	V&V ref. no. 018	518
DVBT2_VV003_A_SF12.wv DVBT2_VV003_A_SF26.wv DVBT2_VV003_A_SF52.wv	V&V ref. no. 003	232 504 1007
DVBT2_VV003_B_SF12.wv DVBT2_VV003_B_SF26.wv DVBT2_VV003_B_SF52.wv	V&V ref. no. 003	232 504 1007
DVBT2_VV012_SF12.wv DVBT2_VV012_SF26.wv DVBT2_VV012_SF52.wv	V&V ref. no. 012	242 524 1048

Description of the waveform files

DVBT2_VV013_SF12.wv DVBT2_VV013_SF26.wv DVBT2_VV013_SF52.wv	V&V ref. no. 013	242 524 1048
DVBT2_VV014_SF12.wv DVBT2_VV014_SF26.wv DVBT2_VV014_SF52.wv	V&V ref. no. 014	242 524 1048
DVBT2_VV015_SF12.wv DVBT2_VV015_SF26.wv DVBT2_VV015_SF52.wv	V&V ref. no. 015	238 515 1031
DVBT2_VV016_SF12.wv DVBT2_VV016_SF26.wv DVBT2_VV016_SF52.wv	V&V ref. no. 016	232 504 1007
DVBT2_VV019_SF12.wv DVBT2_VV019_SF26.wv DVBT2_VV019_SF52.wv	V&V ref. no. 019	232 504 1007
DVBT2_VV018_MISO_TX1andTX2_SF152.wv	V&V ref. no. 018	1037
DVBT2_VV018_MISO_TX1only_SF76.wv DVBT2_VV018_MISO_TX1only_SF152.wv	V&V ref. no. 018	518 1037
DVBT2_VV018_MISO_TX2only_SF76.wv DVBT2_VV018_MISO_TX2only_SF152.wv	V&V ref. no. 018	518 1037
DVBT2_VV021_MPLP_SF26.wv DVBT2_VV021_MPLP_SF52.wv	V&V ref. no. 021	504 1007
DVBT2_VV022_MPLP_SF26.wv DVBT2_VV022_MPLP_SF52.wv	V&V ref. no. 022	504 1007
DVBT2_VV023_MPLP_SF26.wv DVBT2_VV023_MPLP_SF52.wv	V&V ref. no. 023	504 1007
DVBT2_VV025_MPLP_SF48.wv DVBT2_VV025_MPLP_SF96.wv	V&V ref. no. 025	499 998
DVBT2_VV026_MPLP_SF26.wv DVBT2_VV026_MPLP_SF52.wv	V&V ref. no. 026	504 1007
DVBT2_VV400_SF52.wv DVBT2_VV400_SF104.wv	V&V ref. no. 400	471 941

2.3 Description of the waveform files

When playing one of the waveform files, the following applies:

- Playing this ARB file locks a DVB-T2 receiver.
- Transmitting video and audio during ARB playback.
- Framing is continuous due to a whole number of super frames.

- An interruption in audio and video occurs at the wrap around of the ARB file.

2.3.1 DVBT2_VV001_A_SFxx.wv

ARB file name	DVBT2_VV001_A_SF12.wv DVBT2_VV001_A_SF26.wv DVBT2_VV001_A_SF52.wv
ARB file version	01.00
Date of generation	2009-01-16
ARB file size	256 Mbyte / 512 Mbyte / 1 Gbyte
ARB file play time (8 MHz CH BW)	5.2 s / 11.2 s / 22.5 s
ARB clock (8 MHz CH BW)	11.428570 MHz
Number of super frames	12 / 26 / 52

2.3.1.1 T2 transmission parameter

Table 2-1: Input mode

Parameter		Possible values
Input mode	A (single PLP)	[A (single PLP), B (multi PLP)]
Number of PLP	1	[1 to 255]
Mode adapt. type	CCM	[CCM, ACM]

Table 2-2: Mode adapt., stream adapt.

Parameter		Possible values
PLP 0		
Input format	TS	[TS, GSE, GCS, GFPS]
PLP ID	0x00	[0x00 to 0xff]
PLP type	Data Type 1	[Data Type 1, Data Type 2, Common]
Mode	HEM	[HEM, NM]
ISSY	Off	[On, Off]
Null packet deletion	Off	[On, Off]
In-band signaling	Off	[On, Off]
Input data rate	36.1407594 Mbit/s	

Table 2-3: BICM

Parameter		Possible values
PLP 0		

Description of the waveform files

FEC frame	Normal	[Normal, Short]
Code rate	3/5	[1/2, 3/5, 2/3, 3/4, 4/5, 5/6]
Constellation	256QAM	[QPSK, 16QAM, 64QAM, 256QAM]
Constellation rotation	On	[On, Off]
Time interleaver type	Type 0	[Type 0, Type 1]
Frame interval (lJump)	1	[1 to 255]
Time interleaver length	3	[0 to 255]

Table 2-4: Framing

Parameter		Possible values
T2 frames per super frame (NT2)	2	[2 to 255]
OFDM symbols per T2 frame (LF)	60	[4 to max.], max. -> EN302755
Data symbols per T2 frame (LData)	59	[3 to max.], max. -> EN302755
Subslices per T2 frame (NSub)	1	[1 to 6480]

Table 2-5: OFDM

Parameter		Possible values
Channel bandwidth	8 MHz	[1.7 MHz, 5 MHz, 6 MHz, 7 MHz, 8 MHz, 10 MHz]
FFT size	32K	[1K, 2K, 4K, 8K, 16K, 32K]
Extended carrier mode	On	[On, Off]
Guard interval	1/128	[1/4, 19/128, 1/8, 19/256, 1/16, 1/32, 1/128]
Pilot pattern	PP7	[PP1, PP2, PP3, PP4, PP5, PP6, PP7, PP8]

Table 2-6: T2 system

Parameter		Possible values
Transmission system	SISO	[SISO, MISO]
MISO group	---	[1, 2]
PAPR	Off	[On, Off]
PAPR function tag	---	
PAPR function length	---	
PAPR gain	---	
PAPR extension limit	---	
PAPR clipping threshold	---	
FEF	Off	[On, Off]

Description of the waveform files

FEF type	---	
FEF length	---	
FEF interval	---	
TFS	Off	[On, Off]
L1 post modulation	64QAM	[BPSK, QPSK, 16QAM, 64QAM]
L1 repetition	Off	[On, Off]
L1 post extension	Off	[On, Off]
Num. aux. streams	0	[0 to 15]
Cell ID	0x0000	[0x0000 to 0xffff]
Network ID	0x3085	[0x0000 to 0xffff]
T2 system ID	0x8001	[0x0000 to 0xffff]
TX ID state	Off	[On, Off]
TX ID	---	[0x0000 to 0xffff]

2.3.1.2 PLP content

PLP 0:

Flowers_36Mbps_MPEG1L2.trp

2.3.2 DVBT2_VV001_B_SFxx.wv

ARB file name	DVBT2_VV001_B_SF12.wv DVBT2_VV001_B_SF26.wv DVBT2_VV001_B_SF52.wv
ARB file version	01.00
Date of generation	2009-01-16
ARB file size	256 Mbyte / 512 Mbyte / 1 Gbyte
ARB file play time (8 MHz CH BW)	5.2 s / 11.2 s / 22.5 s
ARB clock (8 MHz CH BW)	11.428570 MHz
Number of super frames	12 / 26 / 52

2.3.2.1 T2 transmission parameter

Table 2-7: Input mode

Parameter		Possible values
Input mode	A (single PLP)	[A (single PLP), B (multi PLP)]
Number of PLP	1	[1 to 255]
Mode adapt. type	CCM	[CCM, ACM]

Table 2-8: Mode adapt., stream adapt.

Parameter		Possible values
PLP 0		
Input format	TS	[TS, GSE, GCS, GFPS]
PLP ID	0x00	[0x00 to 0xff]
PLP type	Data Type 1	[Data Type 1, Data Type 2, Common]
Mode	HEM	[HEM, NM]
ISSY	Off	[On, Off]
Null packet deletion	Off	[On, Off]
In-band signaling	Off	[On, Off]
Input data rate	36.1407594 Mbit/s	

Table 2-9: BICM

Parameter		Possible values
PLP 0		
FEC frame	Normal	[Normal, Short]
Code rate	3/5	[1/2, 3/5, 2/3, 3/4, 4/5, 5/6]
Constellation	256QAM	[QPSK, 16QAM, 64QAM, 256QAM]
Constellation rotation	On	[On, Off]
Time interleaver type	Type 0	[Type 0, Type 1]
Frame interval (lJump)	1	[1 to 255]
Time interleaver length	3	[0 to 255]

Table 2-10: Framing

Parameter		Possible values
T2 frames per super frame (NT2)	2	[2 to 255]
OFDM symbols per T2 frame (LF)	60	[4 to max.], max. -> EN302755
Data symbols per T2 frame (LData)	59	[3 to max.], max. -> EN302755
Subslices per T2 frame (NSub)	1	[1 to 6480]

Description of the waveform files

Table 2-11: OFDM

Parameter		Possible values
Channel bandwidth	8 MHz	[1.7 MHz, 5 MHz, 6 MHz, 7 MHz, 8 MHz, 10 MHz]
FFT size	32K	[1K, 2K, 4K, 8K, 16K, 32K]
Extended carrier mode	On	[On, Off]
Guard interval	1/128	[1/4, 19/128, 1/8, 19/256, 1/16, 1/32, 1/128]
Pilot pattern	PP7	[PP1, PP2, PP3, PP4, PP5, PP6, PP7, PP8]

Table 2-12: T2 system

Parameter		Possible values
Transmission system	SISO	[SISO, MISO]
MISO group	---	[1, 2]
PAPR	Off	[On, Off]
PAPR function tag	---	
PAPR function length	---	
PAPR gain	---	
PAPR extension limit	---	
PAPR clipping threshold	---	
FEF	Off	[On, Off]
FEF type	---	
FEF length	---	
FEF interval	---	
TFS	Off	[On, Off]
L1 post modulation	64QAM	[BPSK, QPSK, 16QAM, 64QAM]
L1 repetition	Off	[On, Off]
L1 post extension	Off	[On, Off]
Num. aux. streams	0	[0 to 15]
Cell ID	0x0000	[0x0000 to 0xffff]
Network ID	0x3085	[0x0000 to 0xffff]
T2 system ID	0x8001	[0x0000 to 0xffff]

TX ID state	Off	[On, Off]
TX ID	---	[0x0000 to 0xffff]

2.3.2.2 PLP content

PLP 0:

Pattern

2.3.3 DVBT2_VV003_A_SFxx.wv

ARB file name	DVBT2_VV003_A_SF12.wv DVBT2_VV003_A_SF26.wv DVBT2_VV003_A_SF52.wv
ARB file version	01.00
Date of generation	2009-01-16
ARB file size	256 Mbyte / 512 Mbyte / 1 Gbyte
ARB file play time (8 MHz CH BW)	5.2 s / 11.2 s / 22.5 s
ARB clock (8 MHz CH BW)	11.428570 MHz
Number of super frames	12 / 26 / 52

2.3.3.1 T2 transmission parameter

Table 2-13: Input mode

Parameter		Possible values
Input mode	A (single PLP)	[A (single PLP), B (multi PLP)]
Number of PLP	1	[1 to 255]
Mode adapt. type	CCM	[CCM, ACM]

Table 2-14: Mode adapt., stream adapt.

Parameter		Possible values
PLP 0		
Input format	TS	[TS, GSE, GCS, GFPS]
PLP ID	0x00	[0x00 to 0xff]
PLP type	Data Type 1	[Data Type 1, Data Type 2, Common]
Mode	HEM	[HEM, NM]
ISSY	Off	[On, Off]
Null packet deletion	Off	[On, Off]

Description of the waveform files

In-band signaling	Off	[On, Off]
Input data rate	40.2146452 Mbit/s	

Table 2-15: BICM

Parameter		Possible values
PLP 0		
FEC frame	Normal	[Normal, Short]
Code rate	2/3	[1/2, 3/5, 2/3, 3/4, 4/5, 5/6]
Constellation	256QAM	[QPSK, 16QAM, 64QAM, 256QAM]
Constellation rotation	On	[On, Off]
Time interleaver type	Type 0	[Type 0, Type 1]
Frame interval (lJump)	1	[1 to 255]
Time interleaver length	3	[0 to 255]

Table 2-16: Framing

Parameter		Possible values
T2 frames per super frame (NT2)	2	[2 to 255]
OFDM symbols per T2 frame (LF)	60	[4 to max.], max. -> EN302755
Data symbols per T2 frame (LData)	59	[3 to max.], max. -> EN302755
Subslices per T2 frame (NSub)	1	[1 to 6480]

Table 2-17: OFDM

Parameter		Possible values
Channel bandwidth	8 MHz	[1.7 MHz, 5 MHz, 6 MHz, 7 MHz, 8 MHz, 10 MHz]
FFT size	32K	[1K, 2K, 4K, 8K, 16K, 32K]
Extended carrier mode	On	[On, Off]
Guard interval	1/128	[1/4, 19/128, 1/8, 19/256, 1/16, 1/32, 1/128]
Pilot pattern	PP7	[PP1, PP2, PP3, PP4, PP5, PP6, PP7, PP8]

Table 2-18: T2 system

Parameter		Possible values
Transmission system	SISO	[SISO, MISO]
MISO group	---	[1, 2]
PAPR	Off	[On, Off]
PAPR function tag	---	

Description of the waveform files

PAPR function length	---	
PAPR gain	---	
PAPR extension limit	---	
PAPR clipping threshold	---	
FEF	Off	[On, Off]
FEF type	---	
FEF length	---	
FEF interval	---	
TFS	Off	[On, Off]
L1 post modulation	64QAM	[BPSK, QPSK, 16QAM, 64QAM]
L1 repetition	Off	[On, Off]
L1 post extension	Off	[On, Off]
Num. aux. streams	0	[0 to 15]
Cell ID	0x0000	[0x0000 to 0xffff]
Network ID	0x3085	[0x0000 to 0xffff]
T2 system ID	0x8001	[0x0000 to 0xffff]
TX ID state	Off	[On, Off]
TX ID	---	[0x0000 to 0xffff]

2.3.3.2 PLP content**PLP 0:**

Flowers

2.3.4 DVBT2_VV003_B_SFxx.wv

ARB file name	DVBT2_VV003_B_SF12.wv DVBT2_VV003_B_SF26.wv DVBT2_VV003_B_SF52.wv
ARB file version	01.00
Date of generation	2009-01-16
ARB file size	256 Mbyte / 512 Mbyte / 1 Gbyte

ARB file play time (8 MHz CH BW)	5.2 s / 11.2 s / 22.5 s
ARB clock (8 MHz CH BW)	11.428570 MHz
Number of super frames	12 / 26 / 52

2.3.4.1 T2 transmission parameter

Table 2-19: Input mode

Parameter		Possible values
Input mode	A (single PLP)	[A (single PLP), B (multi PLP)]
Number of PLP	1	[1 to 255]
Mode adapt. type	CCM	[CCM, ACM]

Table 2-20: Mode adapt., stream adapt.

Parameter		Possible values
PLP 0		
Input format	TS	[TS, GSE, GCS, GFPS]
PLP ID	0x00	[0x00 to 0xff]
PLP type	Data Type 1	[Data Type 1, Data Type 2, Common]
Mode	HEM	[HEM, NM]
ISSY	Off	[On, Off]
Null packet deletion	Off	[On, Off]
In-band signaling	Off	[On, Off]
Input data rate	40.2146452 Mbit/s	

Table 2-21: BICM

Parameter		Possible values
PLP 0		
FEC frame	Normal	[Normal, Short]
Code rate	2/3	[1/2, 3/5, 2/3, 3/4, 4/5, 5/6]
Constellation	256QAM	[QPSK, 16QAM, 64QAM, 256QAM]
Constellation rotation	On	[On, Off]
Time interleaver type	Type 0	[Type 0, Type 1]
Frame interval (lJump)	1	[1 to 255]
Time interleaver length	3	[0 to 255]

Description of the waveform files

Table 2-22: Framing

Parameter		Possible values
T2 frames per super frame (NT2)	2	[2 to 255]
OFDM symbols per T2 frame (LF)	60	[4 to max.], max. -> EN302755
Data symbols per T2 frame (LData)	59	[3 to max.], max. -> EN302755
Subslices per T2 frame (NSub)	1	[1 to 6480]

Table 2-23: OFDM

Parameter		Possible values
Channel bandwidth	8 MHz	[1.7 MHz, 5 MHz, 6 MHz, 7 MHz, 8 MHz, 10 MHz]
FFT size	32K	[1K, 2K, 4K, 8K, 16K, 32K]
Extended carrier mode	On	[On, Off]
Guard interval	1/128	[1/4, 19/128, 1/8, 19/256, 1/16, 1/32, 1/128]
Pilot pattern	PP7	[PP1, PP2, PP3, PP4, PP5, PP6, PP7, PP8]

Table 2-24: T2 system

Parameter		Possible values
Transmission system	SISO	[SISO, MISO]
MISO group	---	[1, 2]
PAPR	Off	[On, Off]
PAPR function tag	---	
PAPR function length	---	
PAPR gain	---	
PAPR extension limit	---	
PAPR clipping threshold	---	
FEF	Off	[On, Off]
FEF type	---	
FEF length	---	
FEF interval	---	
TFS	Off	[On, Off]
L1 post modulation	64QAM	[BPSK, QPSK, 16QAM, 64QAM]

Description of the waveform files

L1 repetition	Off	[On, Off]
L1 post extension	Off	[On, Off]
Num. aux. streams	0	[0 to 15]
Cell ID	0x0000	[0x0000 to 0xffff]
Network ID	0x3085	[0x0000 to 0xffff]
T2 system ID	0x8001	[0x0000 to 0xffff]
TX ID state	Off	[On, Off]
TX ID	---	[0x0000 to 0xffff]

2.3.4.2 PLP content

PLP 0:

Pattern

2.3.5 DVBT2_VV012_SFxx.wv

ARB file name	DVBT2_VV012_SF12.wv DVBT2_VV012_SF26.wv DVBT2_VV012_SF52.wv
ARB file version	01.00
Date of generation	2009-01-28
ARB file size	256 Mbyte / 512 Mbyte / 1 Gbyte
ARB file play time (8 MHz CH BW)	5.4 / 11.7 / 23.4 seconds
ARB clock (8 MHz CH BW)	11.428570 MHz
Number of super frames	12 / 26 / 52

2.3.5.1 T2 transmission parameter

Table 2-25: Input mode

Parameter		Possible values
Input mode	A	[A (single PLP), B (multi PLP)]
Number of PLP	1	[1 to 255]
Mode adapt. type	CCM	[CCM, ACM]

Description of the waveform files

Table 2-26: Mode adapt., stream adapt.

Parameter		Possible values
PLP 0		
Input format	TS	[TS, GSE, GCS, GFPS]
PLP ID	0x00	[0x00 to 0xff]
PLP type	Data Type 1	[Data Type 1, Data Type 2, Common]
Mode	HEM	[HEM, NM]
ISSY	Off	[On, Off]
Null packet deletion	Off	[On, Off]
In-band signaling	Off	[On, Off]
Input data rate	34.688091 Mbit/s	

Table 2-27: BICM

Parameter		Possible values
PLP 0		
FEC frame	Normal	[Normal, Short]
Code rate	4/5	[1/2, 3/5, 2/3, 3/4, 4/5, 5/6]
Constellation	64QAM	[QPSK, 16QAM, 64QAM, 256QAM]
Constellation rotation	On	[On, Off]
Time interleaver type	Type 0	[Type 0, Type 1]
Frame interval (lJump)	1	[1 to 255]
Time interleaver length	3	[0 to 255]

Table 2-28: Framing

Parameter		Possible values
T2 frames per super frame (NT2)	2	[2 to 255]
OFDM symbols per T2 frame (LF)	244	[4 to max.], max. -> EN302755
Data symbols per T2 frame (LData)	242	[3 to max.], max. -> EN302755
Subslices per T2 frame (NSub)	1	[1 to 6480]

Table 2-29: OFDM

Parameter		Possible values
Channel bandwidth	8 MHz	[1.7 MHz, 5 MHz, 6 MHz, 7 MHz, 8 MHz, 10 MHz]
FFT size	8K	[1K, 2K, 4K, 8K, 16K, 32K]
Extended carrier mode	On	[On, Off]

Description of the waveform files

Guard interval	1/32	[1/4, 19/128, 1/8, 19/256, 1/16, 1/32, 1/128]
Pilot pattern	PP7	[PP1, PP2, PP3, PP4, PP5, PP6, PP7, PP8]

Table 2-30: T2 system

Parameter		Possible values
Transmission system	SISO	[SISO, MISO]
MISO group	---	[1, 2]
PAPR	On (currently the reserved tones are modulated with complex 0 Symbols)	[On, Off]
PAPR function tag	---	
PAPR function length	---	
PAPR gain	---	
PAPR extension limit	---	
PAPR clipping threshold	---	
FEF	Off	[On, Off]
FEF type	---	
FEF length	---	
FEF interval	---	
TFS	Off	[On, Off]
L1 post modulation	64QAM	[BPSK, QPSK, 16QAM, 64QAM]
L1 repetition	Off	[On, Off]
L1 post extension	Off	[On, Off]
Num. aux. streams	0	[0 to 15]
Cell ID	0	[0x0000 to 0xffff]
Network ID	12421	[0x0000 to 0xffff]
T2 system ID	32769	[0x0000 to 0xffff]
TX ID state	Off	[On, Off]
TX ID	---	[0x0000 to 0xffff]

2.3.5.2 PLP content

PLP 0:

Video + Audio: VV012_34688091Bps.trp

2.3.6 DVBT2_VV013_SFxx.wv

ARB file name	DVBT2_VV013_SF12.wv DVBT2_VV013_SF26.wv DVBT2_VV013_SF52.wv
ARB file version	01.00
Date of generation	2009-01-28
ARB file size	256 Mbyte / 512 Mbyte / 1 Gbyte
ARB file play time (8 MHz CH BW)	5.4 s / 11.7 s / 23.4 s
ARB clock (8 MHz CH BW)	11.428570 MHz
Number of super frames	12 / 26 / 52

2.3.6.1 T2 transmission parameter

Table 2-31: Input mode

Parameter		Possible values
Input mode	A	[A (single PLP), B (multi PLP)]
Number of PLP	1	[1 to 255]
Mode adapt. type	CCM	[CCM, ACM]

Table 2-32: Mode adapt., stream adapt.

Parameter		Possible values
PLP 0		
Input format	TS	[TS, GSE, GCS, GFPS]
PLP ID	0x00	[0x00 to 0xff]
PLP type	Data Type 1	[Data Type 1, Data Type 2, Common]
Mode	HEM	[HEM, NM]
ISSY	Off	[On, Off]
Null packet deletion	Off	[On, Off]
In-band signaling	Off	[On, Off]
Input data rate	36.162577 Mbit/s	

Table 2-33: BICM

Parameter		Possible values
PLP 0		
FEC frame	Normal	[Normal, Short]
Code rate	5/6	[1/2, 3/5, 2/3, 3/4, 4/5, 5/6]
Constellation	64QAM	[QPSK, 16QAM, 64QAM, 256QAM]
Constellation rotation	On	[On, Off]
Time interleaver type	Type 0	[Type 0, Type 1]
Frame interval (lJump)	1	[1 to 255]
Time interleaver length	3	[0 to 255]

Table 2-34: Framing

Parameter		Possible values
T2 frames per super frame (NT2)	2	[2 to 255]
OFDM symbols per T2 frame (LF)	244	[4 to max.], max. -> EN302755
Data symbols per T2 frame (LData)	242	[3 to max.], max. -> EN302755
Subslices per T2 frame (NSub)	1	[1 to 6480]

Table 2-35: OFDM

Parameter		Possible values
Channel bandwidth	8 MHz	[1.7 MHz, 5 MHz, 6 MHz, 7 MHz, 8 MHz, 10 MHz]
FFT size	8K	[1K, 2K, 4K, 8K, 16K, 32K]
Extended carrier mode	On	[On, Off]
Guard interval	1/32	[1/4, 19/128, 1/8, 19/256, 1/16, 1/32, 1/128]
Pilot pattern	PP7	[PP1, PP2, PP3, PP4, PP5, PP6, PP7, PP8]

Table 2-36: T2 system

Parameter		Possible values
Transmission system	SISO	[SISO, MISO]
MISO group	---	[1, 2]
PAPR	On (currently the reserved tones are modulated with complex 0 Symbols)	[On, Off]
PAPR function tag	---	
PAPR function length	---	

Description of the waveform files

PAPR gain	---	
PAPR extension limit	---	
PAPR clipping threshold	---	
FEF	Off	[On, Off]
FEF type	---	
FEF length	---	
FEF interval	---	
TFS	Off	[On, Off]
L1 post modulation	64QAM	[BPSK, QPSK, 16QAM, 64QAM]
L1 repetition	Off	[On, Off]
L1 post extension	Off	[On, Off]
Num. aux. streams	0	[0 to 15]
Cell ID	0	[0x0000 to 0xffff]
Network ID	12421	[0x0000 to 0xffff]
T2 system ID	32769	[0x0000 to 0xffff]
TX ID state	Off	[On, Off]
TX ID	---	[0x0000 to 0xffff]

2.3.6.2 PLP content**PLP 0:**

Video + Audio: VV013_36162577Bps.trp

2.3.7 DVBT2_VV014_SFxx.wv

ARB file name	DVBT2_VV014_SF12.wv DVBT2_VV014_SF26.wv DVBT2_VV014_SF52.wv
ARB file version	01.00
Date of generation	2009-01-28
ARB file size	256 Mbyte / 512 Mbyte / 1 Gbyte
ARB file play time (8 MHz CH BW)	5.4 s / 11.7 s / 23.4 s

ARB clock (8 MHz CH BW)	11.428570 MHz
Number of super frames	12 / 26 / 52

2.3.7.1 T2 transmission parameter

Table 2-37: Input mode

Parameter		Possible values
Input mode	A	[A (single PLP), B (multi PLP)]
Number of PLP	1	[1 to 255]
Mode adapt. type	CCM	[CCM, ACM]

Table 2-38: Mode adapt., stream adapt.

Parameter		Possible values
PLP 0		
Input format	TS	[TS, GSE, GCS, GFPS]
PLP ID	0x00	[0x00 to 0xff]
PLP type	Data Type 1	[Data Type 1, Data Type 2, Common]
Mode	HEM	[HEM, NM]
ISSY	Off	[On, Off]
Null packet deletion	Off	[On, Off]
In-band signaling	Off	[On, Off]
Input data rate	32.508650 Mbit/s	

Table 2-39: BICM

Parameter		Possible values
PLP 0		
FEC frame	Normal	[Normal, Short]
Code rate	3/4	[1/2, 3/5, 2/3, 3/4, 4/5, 5/6]
Constellation	64QAM	[QPSK, 16QAM, 64QAM, 256QAM]
Constellation rotation	On	[On, Off]
Time interleaver type	Type 0	[Type 0, Type 1]
Frame interval (lJump)	1	[1 to 255]
Time interleaver length	3	[0 to 255]

Table 2-40: Framing

Parameter		Possible values
T2 frames per super frame (NT2)	2	[2 to 255]

Description of the waveform files

OFDM symbols per T2 frame (LF)	244	[4 to max.], max. -> EN302755
Data symbols per T2 frame (LData)	242	[3 to max.], max. -> EN302755
Subslices per T2 frame (NSub)	1	[1 to 6480]

Table 2-41: OFDM

Parameter		Possible values
Channel bandwidth	8 MHz	[1.7 MHz, 5 MHz, 6 MHz, 7 MHz, 8 MHz, 10 MHz]
FFT size	8K	[1K, 2K, 4K, 8K, 16K, 32K]
Extended carrier mode	On	[On, Off]
Guard interval	1/32	[1/4, 19/128, 1/8, 19/256, 1/16, 1/32, 1/128]
Pilot pattern	PP7	[PP1, PP2, PP3, PP4, PP5, PP6, PP7, PP8]

Table 2-42: T2 system

Parameter		Possible values
Transmission system	SISO	[SISO, MISO]
MISO group	---	[1, 2]
PAPR	On (currently the reserved tones are modulated with complex 0 Symbols)	[On, Off]
PAPR function tag	---	
PAPR function length	---	
PAPR gain	---	
PAPR extension limit	---	
PAPR clipping threshold	---	
FEF	Off	[On, Off]
FEF type	---	
FEF length	---	
FEF interval	---	
TFS	Off	[On, Off]
L1 post modulation	64QAM	[BPSK, QPSK, 16QAM, 64QAM]
L1 repetition	Off	[On, Off]

Description of the waveform files

L1 post extension	Off	[On, Off]
Num. aux. streams	0	[0 to 15]
Cell ID	0	[0x0000 to 0xffff]
Network ID	12421	[0x0000 to 0xffff]
T2 system ID	32769	[0x0000 to 0xffff]
TX ID state	Off	[On, Off]
TX ID	---	[0x0000 to 0xffff]

2.3.7.2 PLP content

PLP 0:

Video + Audio: VV014_32508650Bps.trp

2.3.8 DVBT2_VV015_SFxx.wv

ARB file name	DVBT2_VV015_SF12.wv DVBT2_VV015_SF26.wv DVBT2_VV015_SF52.wv
ARB file version	01.00
Date of generation	2009-01-28
ARB file size	256 Mbyte / 512 Mbyte / 1 Gbyte
ARB file play time (8 MHz CH BW)	5.3 s / 11.5 s / 23.1 s
ARB clock (8 MHz CH BW)	11.428570 MHz
Number of super frames	12 / 26 / 52

2.3.8.1 T2 transmission parameter

Table 2-43: Input mode

Parameter		Possible values
Input mode	A	[A (single PLP), B (multi PLP)]
Number of PLP	1	[1 to 255]
Mode adapt. type	CCM	[CCM, ACM]

Table 2-44: Mode adapt., stream adapt.

Parameter		Possible values
PLP 0		

Description of the waveform files

Input format	TS	[TS, GSE, GCS, GFPS]
PLP ID	0x00	[0x00 to 0xff]
PLP type	Data Type 1	[Data Type 1, Data Type 2, Common]
Mode	HEM	[HEM, NM]
ISSY	Off	[On, Off]
Null packet deletion	Off	[On, Off]
In-band signaling	Off	[On, Off]
Input data rate	34.970502 Mbit/s	

Table 2-45: BICM

Parameter		Possible values
PLP 0		
FEC frame	Normal	[Normal, Short]
Code rate	3/5	[1/2, 3/5, 2/3, 3/4, 4/5, 5/6]
Constellation	256QAM	[QPSK, 16QAM, 64QAM, 256QAM]
Constellation rotation	On	[On, Off]
Time interleaver type	Type 0	[Type 0, Type 1]
Frame interval (lJump)	1	[1 to 255]
Time interleaver length	3	[0 to 255]

Table 2-46: Framing

Parameter		Possible values
T2 frames per super frame (NT2)	2	[2 to 255]
OFDM symbols per T2 frame (LF)	240	[4 to max.], max. -> EN302755
Data symbols per T2 frame (LData)	238	[3 to max.], max. -> EN302755
Subslices per T2 frame (NSub)	1	[1 to 6480]

Table 2-47: OFDM

Parameter		Possible values
Channel bandwidth	8 MHz	[1.7 MHz, 5 MHz, 6 MHz, 7 MHz, 8 MHz, 10 MHz]
FFT size	8K	[1K, 2K, 4K, 8K, 16K, 32K]
Extended carrier mode	On	[On, Off]
Guard interval	1/32	[1/4, 19/128, 1/8, 19/256, 1/16, 1/32, 1/128]
Pilot pattern	PP7	[PP1, PP2, PP3, PP4, PP5, PP6, PP7, PP8]

Table 2-48: T2 system

Parameter		Possible values
Transmission system	SISO	[SISO, MISO]
MISO group	---	[1, 2]
PAPR	Off	[On, Off]
PAPR function tag	---	
PAPR function length	---	
PAPR gain	---	
PAPR extension limit	---	
PAPR clipping threshold	---	
FEF	Off	[On, Off]
FEF type	---	
FEF length	---	
FEF interval	---	
TFS	Off	[On, Off]
L1 post modulation	64QAM	[BPSK, QPSK, 16QAM, 64QAM]
L1 repetition	Off	[On, Off]
L1 post extension	Off	[On, Off]
Num. aux. streams	0	[0 to 15]
Cell ID	0	[0x0000 to 0xffff]
Network ID	12421	[0x0000 to 0xffff]
T2 system ID	32769	[0x0000 to 0xffff]
TX ID state	Off	[On, Off]
TX ID	---	[0x0000 to 0xffff]

2.3.8.2 PLP content

PLP 0:

Video + Audio: VV015_34970502Bps.trp

2.3.9 DVBT2_VV016_SFxx.wv

ARB file name	DVBT2_VV016_SF12.wv DVBT2_VV016_SF26.wv DVBT2_VV016_SF52.wv
ARB file version	01.00
Date of generation	2009-01-28
ARB file size	256 Mbyte / 512 Mbyte / 1 Gbyte
ARB file play time (8 MHz CH BW)	5.21 s / 11.28 s / 22.56 s
ARB clock (8 MHz CH BW)	11.428570 MHz
Number of super frames	12 / 26 / 52

2.3.9.1 T2 transmission parameter

Table 2-49: Input mode

Parameter		Possible values
Input mode	A	[A (single PLP), B (multi PLP)]
Number of PLP	1	[1 to 255]
Mode adapt. type	CCM	[CCM, ACM]

Table 2-50: Mode adapt., stream adapt.

Parameter		Possible values
PLP 0		
Input format	TS	[TS, GSE, GCS, GFPS]
PLP ID	0x00	[0x00 to 0xff]
PLP type	Data Type 1	[Data Type 1, Data Type 2, Common]
Mode	HEM	[HEM, NM]
ISSY	Off	[On, Off]
Null packet deletion	Off	[On, Off]
In-band signaling	Off	[On, Off]
Input data rate	44.791686 Mbit/s	

Table 2-51: BICM

Parameter		Possible values
PLP 0		
FEC frame	Normal	[Normal, Short]
Code rate	3/4	[1/2, 3/5, 2/3, 3/4, 4/5, 5/6]

Description of the waveform files

Constellation	256QAM	[QPSK, 16QAM, 64QAM, 256QAM]
Constellation rotation	On	[On, Off]
Time interleaver type	Type 0	[Type 0, Type 1]
Frame interval (lJump)	1	[1 to 255]
Time interleaver length	3	[0 to 255]

Table 2-52: Framing

Parameter		Possible values
T2 frames per super frame (NT2)	2	[2 to 255]
OFDM symbols per T2 frame (LF)	59	[4 to max.], max. -> EN302755
Data symbols per T2 frame (LData)	60	[3 to max.], max. -> EN302755
Subslices per T2 frame (NSub)	1	[1 to 6480]

Table 2-53: OFDM

Parameter		Possible values
Channel bandwidth	8 MHz	[1.7 MHz, 5 MHz, 6 MHz, 7 MHz, 8 MHz, 10 MHz]
FFT size	32K	[1K, 2K, 4K, 8K, 16K, 32K]
Extended carrier mode	On	[On, Off]
Guard interval	1/128	[1/4, 19/128, 1/8, 19/256, 1/16, 1/32, 1/128]
Pilot pattern	PP7	[PP1, PP2, PP3, PP4, PP5, PP6, PP7, PP8]

Table 2-54: T2 system

Parameter		Possible values
Transmission system	SISO	[SISO, MISO]
MISO group	---	[1, 2]
PAPR	On (currently the reserved tones are modulated with complex 0 Symbols)	[On, Off]
PAPR function tag	---	
PAPR function length	---	
PAPR gain	---	
PAPR extension limit	---	
PAPR clipping threshold	---	

Description of the waveform files

FEF	Off	[On, Off]
FEF type	---	
FEF length	---	
FEF interval	---	
TFS	Off	[On, Off]
L1 post modulation	64QAM	[BPSK, QPSK, 16QAM, 64QAM]
L1 repetition	Off	[On, Off]
L1 post extension	Off	[On, Off]
Num. aux. streams	0	[0 to 15]
Cell ID	0	[0x0000 to 0xffff]
Network ID	12421	[0x0000 to 0xffff]
T2 system ID	32769	[0x0000 to 0xffff]
TX ID state	Off	[On, Off]
TX ID	---	[0x0000 to 0xffff]

2.3.9.2 PLP content**PLP 0:**

Video + Audio: VV016_44791686Bps.trp

2.3.10 DVBT2_VV018_MISO_TX1andTX2_SFxx.wv

ARB file name	DVBT2_VV018_MISO_TX1andTX2_SF76.wv DVBT2_VV018_MISO_TX1andTX2_SF152.wv
ARB file version	01.00
Date of generation	2009-04-14
ARB file size	854.802432 Mbyte
ARB file play time (8 MHz CH BW)	11.6 s / 23.2 s
ARB clock (8 MHz CH BW)	11.428570 MHz
Number of super frames	76 / 152

2.3.10.1 T2 transmission parameter

Table 2-55: Input mode

Parameter		Possible values
Input mode	A	[A (single PLP), B (multi PLP)]
Number of PLP	1	[1 to 255]
Mode adapt. type	CCM	[CCM, ACM]

Table 2-56: Mode adapt., stream adapt.

Parameter		Possible values
PLP 0		
Input format	TS	[TS, GSE, GCS, GFPS]
PLP ID	0x00	[0x00 to 0xff]
PLP type	Data Type 1	[Data Type 1, Data Type 2, Common]
Mode	HEM	[HEM, NM]
ISSY	Off	[On, Off]
Null packet deletion	Off	[On, Off]
In-band signaling	Off	[On, Off]
Input data rate	43.162136 Mbit/s	

Table 2-57: BICM

Parameter		Possible values
PLP 0		
FEC frame	Normal	[Normal, Short]
Code rate	5/6	[1/2, 3/5, 2/3, 3/4, 4/5, 5/6]
Constellation	256QAM	[QPSK, 16QAM, 64QAM, 256QAM]
Constellation rotation	On	[On, Off]
Time interleaver type	Type 0	[Type 0, Type 1]
Frame interval (lJump)	1	[1 to 255]
Time interleaver length	1	[0 to 255]
FEC blocks per interleaving frame	61	

Table 2-58: Framing

Parameter		Possible values
T2 frames per super frame (NT2)	2	[2 to 255]
OFDM symbols per T2 frame (LF)	20	[4 to max.], max. -> EN302755

Description of the waveform files

Data symbols per T2 frame (LData)	19	[3 to max.], max. -> EN302755
Subslices per T2 frame (NSub)	1	[1 to 6480]

Table 2-59: OFDM

Parameter		Possible values
Channel bandwidth	8 MHz	[1.7 MHz, 5 MHz, 6 MHz, 7 MHz, 8 MHz, 10 MHz]
FFT size	32K	[1K, 2K, 4K, 8K, 16K, 32K]
Extended carrier mode	On	[On, Off]
Guard interval	1/16	[1/4, 19/128, 1/8, 19/256, 1/16, 1/32, 1/128]
Pilot pattern	PP2	[PP1, PP2, PP3, PP4, PP5, PP6, PP7, PP8]

Table 2-60: T2 system

Parameter		Possible values
Transmission system	MISO	[SISO, MISO]
MISO group	1+2	[1, 2]
PAPR	Off	[On, Off]
PAPR function tag	---	
PAPR function length	---	
PAPR gain	---	
PAPR extension limit	---	
PAPR clipping threshold	---	
FEF	Off	[On, Off]
FEF type	---	
FEF length	---	
FEF interval	---	
TFS	Off	[On, Off]
L1 post modulation	64QAM	[BPSK, QPSK, 16QAM, 64QAM]
L1 repetition	Off	[On, Off]
L1 post extension	Off	[On, Off]
Num. aux. streams	0	[0 to 15]

Description of the waveform files

Cell ID	0	[0x0000 to 0xffff]
Network ID	12421	[0x0000 to 0xffff]
T2 system ID	32769	[0x0000 to 0xffff]
TX ID state	Off	[On, Off]
TX ID	---	[0x0000 to 0xffff]

2.3.10.2 PLP content

PLP 0:

Video + Audio: Stream_1.trp

2.3.11 DVBT2_VV018_MISO_TX1only_SFxx.wv

ARB file name	DVBT2_VV018_MISO_TX1only_SF76.wv DVBT2_VV018_MISO_TX1only_SF152.wv
ARB file version	01.00
Date of generation	2009-04-14
ARB file size	854.802432 Mbyte
ARB file play time (8 MHz CH BW)	11.6 s / 23.2 s
ARB clock (8 MHz CH BW)	11.428570 MHz
Number of super frames	76 / 152

2.3.11.1 T2 transmission parameter

Table 2-61: Input mode

Parameter		Possible values
Input mode	A	[A (single PLP), B (multi PLP)]
Number of PLP	1	[1 to 255]
Mode adapt. type	CCM	[CCM, ACM]

Table 2-62: Mode adapt., stream adapt.

Parameter		Possible values
PLP 0		
Input format	TS	[TS, GSE, GCS, GFPS]
PLP ID	0x00	[0x00 to 0xff]
PLP type	Data Type 1	[Data Type 1, Data Type 2, Common]
Mode	HEM	[HEM, NM]

Description of the waveform files

ISSY	Off	[On, Off]
Null packet deletion	Off	[On, Off]
In-band signaling	Off	[On, Off]
Input data rate	43.162136 Mbit/s	

Table 2-63: BICM

Parameter		Possible values
PLP 0		
FEC frame	Normal	[Normal, Short]
Code rate	5/6	[1/2, 3/5, 2/3, 3/4, 4/5, 5/6]
Constellation	256QAM	[QPSK, 16QAM, 64QAM, 256QAM]
Constellation rotation	On	[On, Off]
Time interleaver type	Type 0	[Type 0, Type 1]
Frame interval (lJump)	1	[1 to 255]
Time interleaver length	1	[0 to 255]
FEC blocks per interleaving frame	61	

Table 2-64: Framing

Parameter		Possible values
T2 frames per super frame (NT2)	2	[2 to 255]
OFDM symbols per T2 frame (LF)	20	[4 to max.], max. -> EN302755
Data symbols per T2 frame (LData)	19	[3 to max.], max. -> EN302755
Subslices per T2 frame (NSub)	1	[1 to 6480]

Table 2-65: OFDM

Parameter		Possible values
Channel bandwidth	8 MHz	[1.7 MHz, 5 MHz, 6 MHz, 7 MHz, 8 MHz, 10 MHz]
FFT size	32K	[1K, 2K, 4K, 8K, 16K, 32K]
Extended carrier mode	On	[On, Off]
Guard interval	1/16	[1/4, 19/128, 1/8, 19/256, 1/16, 1/32, 1/128]
Pilot pattern	PP2	[PP1, PP2, PP3, PP4, PP5, PP6, PP7, PP8]

Table 2-66: T2 system

Parameter		Possible values
Transmission system	MISO	[SISO, MISO]
MISO group	1	[1, 2]

Description of the waveform files

PAPR	Off	[On, Off]
PAPR function tag	---	
PAPR function length	---	
PAPR gain	---	
PAPR extension limit	---	
PAPR clipping threshold	---	
FEF	Off	[On, Off]
FEF type	---	
FEF length	---	
FEF interval	---	
TFS	Off	[On, Off]
L1 post modulation	64QAM	[BPSK, QPSK, 16QAM, 64QAM]
L1 repetition	Off	[On, Off]
L1 post extension	Off	[On, Off]
Num. aux. streams	0	[0 to 15]
Cell ID	0	[0x0000 to 0xffff]
Network ID	12421	[0x0000 to 0xffff]
T2 system ID	32769	[0x0000 to 0xffff]
TX ID state	Off	[On, Off]
TX ID	---	[0x0000 to 0xffff]

2.3.11.2 PLP content**PLP 0:**

Video + Audio: Stream_1.trp

2.3.12 DVBT2_VV018_MISO_TX2only_SFxx.wv

ARB file name	DVBT2_VV018_MISO_TX2only_SF76.wv DVBT2_VV018_MISO_TX2only_SF152.wv
ARB file version	01.00

Description of the waveform files

Date of generation	2009-04-14
ARB file size	854.802432 Mbyte
ARB file play time (8 MHz CH BW)	11.6 s / 23.2 s
ARB clock (8 MHz CH BW)	11.428570 MHz
Number of super frames	76 / 152

2.3.12.1 T2 transmission parameter

Table 2-67: Input mode

Parameter		Possible values
Input mode	A	[A (single PLP), B (multi PLP)]
Number of PLP	1	[1 to 255]
Mode adapt. type	CCM	[CCM, ACM]

Table 2-68: Mode adapt., stream adapt.

Parameter		Possible values
PLP 0		
Input format	TS	[TS, GSE, GCS, GFPS]
PLP ID	0x00	[0x00 to 0xff]
PLP type	Data Type 1	[Data Type 1, Data Type 2, Common]
Mode	HEM	[HEM, NM]
ISSY	Off	[On, Off]
Null packet deletion	Off	[On, Off]
In-band signaling	Off	[On, Off]
Input data rate	43.162136 Mbit/s	

Table 2-69: BICM

Parameter		Possible values
PLP 0		
FEC frame	Normal	[Normal, Short]
Code rate	5/6	[1/2, 3/5, 2/3, 3/4, 4/5, 5/6]
Constellation	256QAM	[QPSK, 16QAM, 64QAM, 256QAM]
Constellation rotation	On	[On, Off]
Time interleaver type	Type 0	[Type 0, Type 1]
Frame interval (lJump)	1	[1 to 255]

Description of the waveform files

Time interleaver length	1	[0 to 255]
FEC blocks per interleaving frame	61	

Table 2-70: Framing

Parameter		Possible values
T2 frames per super frame (NT2)	2	[2 to 255]
OFDM symbols per T2 frame (LF)	20	[4 to max.], max. -> EN302755
Data symbols per T2 frame (LData)	19	[3 to max.], max. -> EN302755
Subslices per T2 frame (NSub)	1	[1 to 6480]

Table 2-71: OFDM

Parameter		Possible values
Channel bandwidth	8 MHz	[1.7 MHz, 5 MHz, 6 MHz, 7 MHz, 8 MHz, 10 MHz]
FFT size	32K	[1K, 2K, 4K, 8K, 16K, 32K]
Extended carrier mode	On	[On, Off]
Guard interval	1/16	[1/4, 19/128, 1/8, 19/256, 1/16, 1/32, 1/128]
Pilot pattern	PP2	[PP1, PP2, PP3, PP4, PP5, PP6, PP7, PP8]

Table 2-72: T2 system

Parameter		Possible values
Transmission system	MISO	[SISO, MISO]
MISO group	2	[1, 2]
PAPR	Off	[On, Off]
PAPR function tag	---	
PAPR function length	---	
PAPR gain	---	
PAPR extension limit	---	
PAPR clipping threshold	---	
FEF	Off	[On, Off]
FEF type	---	
FEF length	---	
FEF interval	---	
TFS	Off	[On, Off]

Description of the waveform files

L1 post modulation	64QAM	[BPSK, QPSK, 16QAM, 64QAM]
L1 repetition	Off	[On, Off]
L1 post extension	Off	[On, Off]
Num. aux. streams	0	[0 to 15]
Cell ID	0	[0x0000 to 0xffff]
Network ID	12421	[0x0000 to 0xffff]
T2 system ID	32769	[0x0000 to 0xffff]
TX ID state	Off	[On, Off]
TX ID	---	[0x0000 to 0xffff]

2.3.12.2 PLP content**PLP 0:**

Video + Audio: Stream_1.trp

2.3.13 DVBT2_VV019_SFxx.wv

ARB file name	DVBT2_VV019_SF12.wv DVBT2_VV019_SF26.wv DVBT2_VV019_SF52.wv
ARB file version	01.00
Date of generation	2009-01-25
ARB file size	256 Mbyte / 512 Mbyte / 1 Gbyte
ARB file play time (8 MHz CH BW)	5.2 s / 11.2 s / 22.5 s
ARB clock (8 MHz CH BW)	11.428570 MHz
Number of super frames	12 / 26 / 52

2.3.13.1 T2 transmission parameter*Table 2-73: Input mode*

Parameter		Possible values
Input mode	A (single PLP)	[A (single PLP), B (multi PLP)]
Number of PLP	1	[1 to 255]
Mode adapt. type	CCM	[CCM, ACM]

Description of the waveform files

Table 2-74: Mode adapt., stream adapt.

Parameter		Possible values
PLP 0		
Input format	TS	[TS, GSE, GCS, GFPS]
PLP ID	0x00	[0x00 to 0xff]
PLP type	Data Type 1	[Data Type 1, Data Type 2, Common]
Mode	HEM	[HEM, NM]
ISSY	Off	[On, Off]
Null packet deletion	Off	[On, Off]
In-band signaling	Off	[On, Off]
Input data rate	36.1407594 Mbit/s	

Table 2-75: BICM

Parameter		Possible values
PLP 0		
FEC frame	Normal	[Normal, Short]
Code rate	3/5	[1/2, 3/5, 2/3, 3/4, 4/5, 5/6]
Constellation	256QAM	[QPSK, 16QAM, 64QAM, 256QAM]
Constellation rotation	Off	[On, Off]
Time interleaver type	Type 0	[Type 0, Type 1]
Frame interval (lJump)	1	[1 to 255]
Time interleaver length	3	[0 to 255]

Table 2-76: Framing

Parameter		Possible values
T2 frames per super frame (NT2)	2	[2 to 255]
OFDM symbols per T2 frame (LF)	60	[4 to max.], max. -> EN302755
Data symbols per T2 frame (LData)	59	[3 to max.], max. -> EN302755
Subslices per T2 frame (NSub)	1	[1 to 6480]

Table 2-77: OFDM

Parameter		Possible values
Channel bandwidth	8 MHz	[1.7 MHz, 5 MHz, 6 MHz, 7 MHz, 8 MHz, 10 MHz]
FFT size	32K	[1K, 2K, 4K, 8K, 16K, 32K]
Extended carrier mode	On	[On, Off]

Description of the waveform files

Guard interval	1/128	[1/4, 19/128, 1/8, 19/256, 1/16, 1/32, 1/128]
Pilot pattern	PP7	[PP1, PP2, PP3, PP4, PP5, PP6, PP7, PP8]

Table 2-78: T2 system

Parameter		Possible values
Transmission system	SISO	[SISO, MISO]
MISO group	---	[1, 2]
PAPR	Off	[On, Off]
PAPR function tag	---	
PAPR function length	---	
PAPR gain	---	
PAPR extension limit	---	
PAPR clipping threshold	---	
FEF	Off	[On, Off]
FEF type	---	
FEF length	---	
FEF interval	---	
TFS	Off	[On, Off]
L1 post modulation	64QAM	[BPSK, QPSK, 16QAM, 64QAM]
L1 repetition	Off	[On, Off]
L1 post extension	Off	[On, Off]
Num. aux. streams	0	[0 to 15]
Cell ID	0x0000	[0x0000 to 0xffff]
Network ID	0x3085	[0x0000 to 0xffff]
T2 system ID	0x8001	[0x0000 to 0xffff]
TX ID state	Off	[On, Off]
TX ID	---	[0x0000 to 0xffff]

2.3.13.2 PLP content**PLP 0:**

Video + Audio: Flowers_36Mbps_MPEG1L2.trp

2.3.14 DVBT2_VV021_MPLP_SFxx.wv

ARB file name	DVBT2_VV021_MPLP_SF26.wv DVBT2_VV021_MPLP_SF52.wv
ARB file version	01.00
Date of generation	2009-03-17
ARB file size	512 Mbyte / 1 Gbyte
ARB file play time (8 MHz CH BW)	11.2 s / 22.5 s
ARB clock (8 MHz CH BW)	11.428570 MHz
Number of super frames	26 / 52

2.3.14.1 T2 transmission parameter

Table 2-79: Input mode

Parameter		Possible values
Input mode	B (multi PLP)	[A (single PLP), B (multi PLP)]
Number of PLP	2	[1 to 255]
Mode adapt. type	CCM	[CCM, ACM]

Table 2-80: Mode adapt., stream adapt.

Parameter		Possible values
PLP 0		
Input format	TS	[TS, GSE, GCS, GFPS]
PLP ID	0x00	[0x00 to 0xff]
PLP type	Data Type 2	[Data Type 1, Data Type 2, Common]
Mode	HEM	[HEM, NM]
ISSY	Off	[On, Off]
Null packet deletion	Off	[On, Off]
In-band signaling	On	[On, Off]
Number other in-band PLP	0	[0x00 to 0xfe]
Input data rate	11.986758 Mbit/s	
PLP 1		
Input format	TS	[TS, GSE, GCS, GFPS]
PLP ID	0x01	[0x00 to 0xff]

Description of the waveform files

PLP type	Data Type 2	[Data Type 1, Data Type 2, Common]
Mode	HEM	[HEM, NM]
ISSY	Off	[On, Off]
Null packet deletion	Off	[On, Off]
In-band signaling	On	[On, Off]
Number other in-band PLP	0	[0x00 to 0xfe]
Input data rate	24.152954 Mbit/s	

Table 2-81: BICM

Parameter		Possible values
PLP 0		
FEC frame	Normal	[Normal, Short]
Code rate	3/5	[1/2, 3/5, 2/3, 3/4, 4/5, 5/6]
Constellation	256QAM	[QPSK, 16QAM, 64QAM, 256QAM]
Constellation rotation	On	[On, Off]
Time interleaver type	Type 0	[Type 0, Type 1]
Frame interval (lJump)	1	[1 to 255]
Time interleaver length	3	[0 to 255]
FEC blocks per interleaving frame	67	
PLP 1		
FEC frame	Normal	[Normal, Short]
Code rate	3/5	[1/2, 3/5, 2/3, 3/4, 4/5, 5/6]
Constellation	256QAM	[QPSK, 16QAM, 64QAM, 256QAM]
Constellation rotation	On	[On, Off]
Time interleaver type	Type 0	[Type 0, Type 1]
Frame interval (lJump)	1	[1 to 255]
Time interleaver length	3	[0 to 255]
FEC blocks per interleaving frame	135	

Table 2-82: Framing

Parameter		Possible values
T2 frames per super frame (NT2)	2	[2 to 255]
OFDM symbols per T2 frame (LF)	60	[4 to max.], max. -> EN302755
Data symbols per T2 frame (LData)	59	[3 to max.], max. -> EN302755
Subslices per T2 frame (NSub)	3	[1 to 6480]

Description of the waveform files

Table 2-83: OFDM

Parameter		Possible values
Channel bandwidth	8 MHz	[1.7 MHz, 5 MHz, 6 MHz, 7 MHz, 8 MHz, 10 MHz]
FFT size	32K	[1K, 2K, 4K, 8K, 16K, 32K]
Extended carrier mode	On	[On, Off]
Guard interval	1/128	[1/4, 19/128, 1/8, 19/256, 1/16, 1/32, 1/128]
Pilot pattern	PP7	[PP1, PP2, PP3, PP4, PP5, PP6, PP7, PP8]

Table 2-84: T2 system

Parameter		Possible values
Transmission system	SISO	[SISO, MISO]
MISO group	---	[1, 2]
PAPR	Off	[On, Off]
PAPR function tag	---	
PAPR function length	---	
PAPR gain	---	
PAPR extension limit	---	
PAPR clipping threshold	---	
FEF	Off	[On, Off]
FEF type	---	
FEF length	---	
FEF interval	---	
TFS	Off	[On, Off]
L1 post modulation	64QAM	[BPSK, QPSK, 16QAM, 64QAM]
L1 repetition	Off	[On, Off]
L1 post extension	Off	[On, Off]
Num. aux. streams	0	[0 to 15]
Cell ID	0	[0x0000 to 0xffff]
Network ID	12421	[0x0000 to 0xffff]
T2 system ID	32769	[0x0000 to 0xffff]

TX ID state	Off	[On, Off]
TX ID	---	[0x0000 to 0xffff]

2.3.14.2 PLP content

PLP 0:

Video + Audio: VV021_TS1_11986758Bps.trp (DVTS 9 Mbit/s)

PLP 1:

Video + Audio: VV021_TS2_24152954Bps.trp (Grouper 4 Mbit/s, Flowergarden 6 Mbit/s)

2.3.15 DVBT2_VV022_MPLP_SFxx.wv

ARB file name	DVBT2_VV022_MPLP_SF26.wv DVBT2_VV022_MPLP_SF52.wv
ARB file version	01.00
Date of generation	2009-04-23
ARB file size	512 Mbyte / 1 Gbyte
ARB file play time (8 MHz CH BW)	11.2 s / 22.5 s
ARB clock (8 MHz CH BW)	11.428570 MHz
Number of super frames	26 / 52

2.3.15.1 T2 transmission parameter

Table 2-85: Input mode

Parameter		Possible values
Input mode	B	[A (single PLP), B (multi PLP)]
Number of PLP	2	[1 to 255]
Mode adapt. type	CCM	[CCM, ACM]

Table 2-86: Mode adapt., stream adapt.

Parameter		Possible values
PLP 0		
Input format	TS	[TS, GSE, GCS, GFPS]
PLP ID	0x00	[0x00 to 0xff]
PLP type	Data Type 1	[Data Type 1, Data Type 2, Common]
Mode	HEM	[HEM, NM]

Description of the waveform files

ISSY	Off	[On, Off]
Null packet deletion	Off	[On, Off]
In-band signaling	On	[On, Off]
Number other in-band PLP	1	[0x00 to 0xfe]
Input data rate	14.670255 Mbit/s	
PLP 1		
Input format	TS	[TS, GSE, GCS, GFPS]
PLP ID	0x01	[0x00 to 0xff]
PLP type	Data Type 1	[Data Type 1, Data Type 2, Common]
Mode	HEM	[HEM, NM]
ISSY	Off	[On, Off]
Null packet deletion	Off	[On, Off]
In-band signaling	On	[On, Off]
Number other in-band PLP	1	[0x00 to 0xfe]
Input data rate	21.469012Mbit/s	

Table 2-87: BICM

Parameter		Possible values
PLP 0		
FEC frame	Normal	[Normal, Short]
Code rate	3/5	[1/2, 3/5, 2/3, 3/4, 4/5, 5/6]
Constellation	256QAM	[QPSK, 16QAM, 64QAM, 256QAM]
Constellation rotation	On	[On, Off]
Time interleaver type	Type 0	[Type 0, Type 1]
Frame interval (lJump)	1	[1 to 255]
Time interleaver length	2	[0 to 255]
FEC blocks per interleaving frame	82	
PLP 1		
FEC frame	Normal	[Normal, Short]
Code rate	3/5	[1/2, 3/5, 2/3, 3/4, 4/5, 5/6]
Constellation	256QAM	[QPSK, 16QAM, 64QAM, 256QAM]
Constellation rotation	On	[On, Off]
Time interleaver type	Type 0	[Type 0, Type 1]
Frame interval (lJump)	1	[1 to 255]

Description of the waveform files

Time interleaver length	2	[0 to 255]
FEC blocks per interleaving frame	120	

Table 2-88: Framing

Parameter		Possible values
T2 frames per super frame (NT2)	2	[2 to 255]
OFDM symbols per T2 frame (LF)	60	[4 to max.], max. -> EN302755
Data symbols per T2 frame (LData)	59	[3 to max.], max. -> EN302755
Subslices per T2 frame (NSub)	1	[1 to 6480]

Table 2-89: OFDM

Parameter		Possible values
Channel bandwidth	8 MHz	[1.7 MHz, 5 MHz, 6 MHz, 7 MHz, 8 MHz, 10 MHz]
FFT size	32K	[1K, 2K, 4K, 8K, 16K, 32K]
Extended carrier mode	On	[On, Off]
Guard interval	1/128	[1/4, 19/128, 1/8, 19/256, 1/16, 1/32, 1/128]
Pilot pattern	PP7	[PP1, PP2, PP3, PP4, PP5, PP6, PP7, PP8]

Table 2-90: T2 system

Parameter		Possible values
Transmission system	SISO	[SISO, MISO]
MISO group	---	[1, 2]
PAPR	Off	[On, Off]
PAPR function tag	---	
PAPR function length	---	
PAPR gain	---	
PAPR extension limit	---	
PAPR clipping threshold	---	
FEF	Off	[On, Off]
FEF type	---	
FEF length	---	
FEF interval	---	
TFS	Off	[On, Off]

Description of the waveform files

L1 post modulation	QPSK	[BPSK, QPSK, 16QAM, 64QAM]
L1 repetition	Off	[On, Off]
L1 post extension	Off	[On, Off]
Num. aux. streams	0	[0 to 15]
Cell ID	0	[0x0000 to 0xffff]
Network ID	12421	[0x0000 to 0xffff]
T2 system ID	32769	[0x0000 to 0xffff]
TX ID state	Off	[On, Off]
TX ID	---	[0x0000 to 0xffff]

2.3.15.2 PLP content

PLP 0:

Video + Audio: VV022_TS1_14670255Bps.trp
(Squirrel, Grouper)

PLP 1:

Video + Audio: VV022_TS2_21469012Bps.trp
(Flowergarden, Flowers - HDTV)

2.3.16 DVBT2_VV023_MPLP_SFxx.wv

ARB file name	DVBT2_VV023_MPLP_SF26.wv DVBT2_VV023_MPLP_SF52.wv
ARB file version	01.00
Date of generation	2009-04-23
ARB file play time (8 MHz CH BW)	11.2 s / 22.5 s
ARB clock (8 MHz CH BW)	11.428570 MHz
Number of super frames	26 / 52

2.3.16.1 T2 transmission parameter

Table 2-91: Input mode

Parameter		Possible values
Input mode	B	[A (single PLP), B (multi PLP)]

Description of the waveform files

Number of PLP	3	[1 to 255]
Mode adapt. type	CCM	[CCM, ACM]

Table 2-92: Mode adapt., stream adapt.

Parameter		Possible values
PLP 0		
Input format	TS	[TS, GSE, GCS, GFPS]
PLP ID	0x00	[0x00 to 0xff]
PLP type	Data Type 2	[Data Type 1, Data Type 2, Common]
Mode	HEM	[HEM, NM]
ISSY	Off	[On, Off]
Null packet deletion	Off	[On, Off]
In-band signaling	On	[On, Off]
Number other in-band PLP	2	[0x00 to 0xfe]
Input data rate	8.050191 Mbit/s	
PLP 1		
Input format	TS	[TS, GSE, GCS, GFPS]
PLP ID	0x01	[0x00 to 0xff]
PLP type	Data Type 2	[Data Type 1, Data Type 2, Common]
Mode	HEM	[HEM, NM]
ISSY	Off	[On, Off]
Null packet deletion	Off	[On, Off]
In-band signaling	On	[On, Off]
Number other in-band PLP	2	[0x00 to 0xfe]
Input data rate	18.427240 Mbit/s	
PLP 2		
Input format	TS	[TS, GSE, GCS, GFPS]
PLP ID	0x02	[0x00 to 0xff]
PLP type	Data Type 1	[Data Type 1, Data Type 2, Common]
Mode	HEM	[HEM, NM]
ISSY	Off	[On, Off]
Null packet deletion	Off	[On, Off]
In-band signaling	On	[On, Off]
Number other in-band PLP	2	[0x00 to 0xfe]
Input data rate	9.660422 Mbit/s	

Description of the waveform files

Table 2-93: BICM

Parameter		Possible values
PLP 0		
FEC frame	Normal	[Normal, Short]
Code rate	3/5	[1/2, 3/5, 2/3, 3/4, 4/5, 5/6]
Constellation	256QAM	[QPSK, 16QAM, 64QAM, 256QAM]
Constellation rotation	On	[On, Off]
Time interleaver type	Type 0	[Type 0, Type 1]
Frame interval (lJump)	1	[1 to 255]
Time interleaver length	3	[0 to 255]
FEC blocks per interleaving frame	45	
PLP 1		
FEC frame	Normal	[Normal, Short]
Code rate	3/5	[1/2, 3/5, 2/3, 3/4, 4/5, 5/6]
Constellation	256QAM	[QPSK, 16QAM, 64QAM, 256QAM]
Constellation rotation	On	[On, Off]
Time interleaver type	Type 0	[Type 0, Type 1]
Frame interval (lJump)	1	[1 to 255]
Time interleaver length	3	[0 to 255]
FEC blocks per interleaving frame	103	
PLP 2		
FEC frame	Normal	[Normal, Short]
Code rate	3/5	[1/2, 3/5, 2/3, 3/4, 4/5, 5/6]
Constellation	256QAM	[QPSK, 16QAM, 64QAM, 256QAM]
Constellation rotation	On	[On, Off]
Time interleaver type	Type 0	[Type 0, Type 1]
Frame interval (lJump)	1	[1 to 255]
Time interleaver length	1	[0 to 255]
FEC blocks per interleaving frame	54	

Table 2-94: Framing

Parameter		Possible values
T2 frames per super frame (NT2)	2	[2 to 255]
OFDM symbols per T2 frame (LF)	60	[4 to max.], max. -> EN302755

Description of the waveform files

Data symbols per T2 frame (LData)	59	[3 to max.], max. -> EN302755
Subslices per T2 frame (NSub)	5	[1 to 6480]

Table 2-95: OFDM

Parameter		Possible values
Channel bandwidth	8 MHz	[1.7 MHz, 5 MHz, 6 MHz, 7 MHz, 8 MHz, 10 MHz]
FFT size	32K	[1K, 2K, 4K, 8K, 16K, 32K]
Extended carrier mode	On	[On, Off]
Guard interval	1/128	[1/4, 19/128, 1/8, 19/256, 1/16, 1/32, 1/128]
Pilot pattern	PP7	[PP1, PP2, PP3, PP4, PP5, PP6, PP7, PP8]

Table 2-96: T2 system

Parameter		Possible values
Transmission system	SISO	[SISO, MISO]
MISO group	---	[1, 2]
PAPR	Off	[On, Off]
PAPR function tag	---	
PAPR function length	---	
PAPR gain	---	
PAPR extension limit	---	
PAPR clipping threshold	---	
FEF	Off	[On, Off]
FEF type	---	
FEF length	---	
FEF interval	---	
TFS	Off	[On, Off]
L1 post modulation	16 QAM	[BPSK, QPSK, 16QAM, 64QAM]
L1 repetition	Off	[On, Off]
L1 post extension	Off	[On, Off]
Num. aux. streams	0	[0 to 15]

Description of the waveform files

Cell ID	0	[0x0000 to 0xffff]
Network ID	12421	[0x0000 to 0xffff]
T2 system ID	32769	[0x0000 to 0xffff]
TX ID state	Off	[On, Off]
TX ID	---	[0x0000 to 0xffff]

2.3.16.2 PLP content**PLP 0:**

Video + Audio: VV023_TS1_8050191Bps.trp

PLP 1:

Video + Audio: VV023_TS2_18427240Bps.trp

PLP 2:

Video + Audio: VV023_TS3_9660422Bps.trp

2.3.17 DVBT2_VV025_MPLP_SFxx.wv

ARB file name	DVBT2_VV025_MPLP_SF48.wv DVBT2_VV025_MPLP_SF96.wv
ARB file version	01.00
Date of generation	2009-04-24
ARB file play time (8 MHz CH BW)	11.2 / 22.4 seconds
ARB clock (8 MHz CH BW)	11.428570 MHz
Number of super frames	48 / 96

2.3.17.1 T2 transmission parameter*Table 2-97: Input mode*

Parameter		Possible values
Input mode	B	[A (single PLP), B (multi PLP)]
Number of PLP	4	[1 to 255]
Mode adapt. type	CCM	[CCM, ACM]

Table 2-98: Mode adapt., stream adapt.

Parameter		Possible values
PLP 0		
Input format	TS	[TS, GSE, GCS, GFPS]

Description of the waveform files

PLP ID	0x00	[0x00 to 0xff]
PLP type	Data Type 2	[Data Type 1, Data Type 2, Common]
Mode	HEM	[HEM, NM]
ISSY	Off	[On, Off]
Null packet deletion	Off	[On, Off]
In-band signaling	On	[On, Off]
Number other in-band PLP	3	[0x00 to 0xfe]
Input data rate	9.974674 Mbit/s	
PLP 1		
Input format	TS	[TS, GSE, GCS, GFPS]
PLP ID	0x01	[0x00 to 0xff]
PLP type	Data Type 2	[Data Type 1, Data Type 2, Common]
Mode	HEM	[HEM, NM]
ISSY	Off	[On, Off]
Null packet deletion	Off	[On, Off]
In-band signaling	Off	[On, Off]
Number other in-band PLP	0	[0x00 to 0xfe]
Input data rate	2.499214 Mbit/s	
PLP 2		
Input format	TS	[TS, GSE, GCS, GFPS]
PLP ID	0x02	[0x00 to 0xff]
PLP type	Data Type 2	[Data Type 1, Data Type 2, Common]
Mode	HEM	[HEM, NM]
ISSY	Off	[On, Off]
Null packet deletion	Off	[On, Off]
In-band signaling	Off	[On, Off]
Number other in-band PLP	0	[0x00 to 0xfe]
Input data rate	0.333228 Mbit/s	
PLP 3		
Input format	TS	[TS, GSE, GCS, GFPS]
PLP ID	0x03	[0x00 to 0xff]
PLP type	Data Type 1	[Data Type 1, Data Type 2, Common]
Mode	HEM	[HEM, NM]
ISSY	Off	[On, Off]

Description of the waveform files

Null packet deletion	Off	[On, Off]
In-band signaling	On	[On, Off]
Number other in-band PLP	3	[0x00 to 0xfe]
Input data rate	9.974674 Mbit/s	

Table 2-99: BICM

Parameter		Possible values
PLP 0		
FEC frame	Normal	[Normal, Short]
Code rate	3/5	[1/2, 3/5, 2/3, 3/4, 4/5, 5/6]
Constellation	256QAM	[QPSK, 16QAM, 64QAM, 256QAM]
Constellation rotation	On	[On, Off]
Time interleaver type	Type 0	[Type 0, Type 1]
Frame interval (lJump)	1	[1 to 255]
Time interleaver length	1	[0 to 255]
FEC blocks per interleaving frame	3	
PLP 1		
FEC frame	Normal	[Normal, Short]
Code rate	3/5	[1/2, 3/5, 2/3, 3/4, 4/5, 5/6]
Constellation	256QAM	[QPSK, 16QAM, 64QAM, 256QAM]
Constellation rotation	On	[On, Off]
Time interleaver type	Type 1	[Type 0, Type 1]
Frame interval (lJump)	2	[1 to 255]
Time interleaver length	2	[0 to 255]
FEC blocks per interleaving frame	3	
PLP 2		
FEC frame	Normal	[Normal, Short]
Code rate	3/5	[1/2, 3/5, 2/3, 3/4, 4/5, 5/6]
Constellation	256QAM	[QPSK, 16QAM, 64QAM, 256QAM]
Constellation rotation	On	[On, Off]
Time interleaver type	Type 1	[Type 0, Type 1]
Frame interval (lJump)	5	[1 to 255]
Time interleaver length	4	[0 to 255]
FEC blocks per interleaving frame	2	
PLP 3		

Description of the waveform files

FEC frame	Normal	[Normal, Short]
Code rate	3/5	[1/2, 3/5, 2/3, 3/4, 4/5, 5/6]
Constellation	256QAM	[QPSK, 16QAM, 64QAM, 256QAM]
Constellation rotation	On	[On, Off]
Time interleaver type	Type 0	[Type 0, Type 1]
Frame interval (lJump)	1	[1 to 255]
Time interleaver length	3	[0 to 255]
FEC blocks per interleaving frame	3	

Table 2-100: Framing

Parameter		Possible values
T2 frames per super frame (NT2)	20	[2 to 255]
OFDM symbols per T2 frame (LF)	96	[4 to max.], max. -> EN302755
Data symbols per T2 frame (LData)	80	[3 to max.], max. -> EN302755
Subslices per T2 frame (NSub)	3	[1 to 6480]

Table 2-101: OFDM

Parameter		Possible values
Channel bandwidth	8 MHz	[1.7 MHz, 5 MHz, 6 MHz, 7 MHz, 8 MHz, 10 MHz]
FFT size	1K	[1K, 2K, 4K, 8K, 16K, 32K]
Extended carrier mode	Off	[On, Off]
Guard interval	1/16	[1/4, 19/128, 1/8, 19/256, 1/16, 1/32, 1/128]
Pilot pattern	PP4	[PP1, PP2, PP3, PP4, PP5, PP6, PP7, PP8]

Table 2-102: T2 system

Parameter		Possible values
Transmission system	SISO	[SISO, MISO]
MISO group	---	[1, 2]
PAPR	Off	[On, Off]
PAPR function tag	---	
PAPR function length	---	
PAPR gain	---	
PAPR extension limit	---	
PAPR clipping threshold	---	

Description of the waveform files

FEF	Off	[On, Off]
FEF type	---	
FEF length	---	
FEF interval	---	
TFS	Off	[On, Off]
L1 post modulation	64 QAM	[BPSK, QPSK, 16QAM, 64QAM]
L1 repetition	Off	[On, Off]
L1 post extension	Off	[On, Off]
Num. aux. streams	0	[0 to 15]
Cell ID	0	[0x0000 to 0xffff]
Network ID	12421	[0x0000 to 0xffff]
T2 system ID	32769	[0x0000 to 0xffff]
TX ID state	Off	[On, Off]
TX ID	---	[0x0000 to 0xffff]

2.3.17.2 PLP content**PLP 0:**

Video + Audio: VV025_TS1_9974674Bps.trp

PLP 1:

Video + Audio: VV025_TS2_2499214Bps.trp

PLP 2:

Video + Audio: VV025_TS3_333228Bps.trp

PLP 3:

Video + Audio: VV025_TS4_9974674Bps.trp

2.3.18 DVBT2_VV026_MPLP_SFxx.wv

ARB file name	DVBT2_VV026_MPLP_SF26.wv DVBT2_VV026_MPLP_SF52.wv
ARB file version	01.00
Date of generation	2009-04-23

ARB file play time (8 MHz CH BW)	11.2 s / 22.5 s
ARB clock (8 MHz CH BW)	11.428570 MHz
Number of super frames	26 / 52

2.3.18.1 T2 transmission parameter

Table 2-103: Input mode

Parameter		Possible values
Input mode	B	[A (single PLP), B (multi PLP)]
Number of PLP	2	[1 to 255]
Mode adapt. type	CCM	[CCM, ACM]

Table 2-104: Mode adapt., stream adapt.

Parameter		Possible values
PLP 0		
Input format	TS	[TS, GSE, GCS, GFPS]
PLP ID	0x00	[0x00 to 0xff]
PLP type	Data Type 2	[Data Type 1, Data Type 2, Common]
Mode	HEM	[HEM, NM]
ISSY	On	[On, Off]
Null packet deletion	Off	[On, Off]
In-band signaling	On	[On, Off]
Number other in-band PLP	1	[0x00 to 0xfe]
Input data rate	11.986535 Mbit/s	
PLP 1		
Input format	TS	[TS, GSE, GCS, GFPS]
PLP ID	0x01	[0x00 to 0xff]
PLP type	Data Type 2	[Data Type 1, Data Type 2, Common]
Mode	HEM	[HEM, NM]
ISSY	Off	[On, Off]
Null packet deletion	Off	[On, Off]
In-band signaling	On	[On, Off]
Number other in-band PLP	1	[0x00 to 0xfe]
Input data rate	23.973817 Mbit/s	

Description of the waveform files

Table 2-105: BICM

Parameter		Possible values
PLP 0		
FEC frame	Normal	[Normal, Short]
Code rate	3/5	[1/2, 3/5, 2/3, 3/4, 4/5, 5/6]
Constellation	256QAM	[QPSK, 16QAM, 64QAM, 256QAM]
Constellation rotation	On	[On, Off]
Time interleaver type	Type 0	[Type 0, Type 1]
Frame interval (lJump)	1	[1 to 255]
Time interleaver length	3	[0 to 255]
FEC blocks per interleaving frame	67	
PLP 1		
FEC frame	Normal	[Normal, Short]
Code rate	3/5	[1/2, 3/5, 2/3, 3/4, 4/5, 5/6]
Constellation	256QAM	[QPSK, 16QAM, 64QAM, 256QAM]
Constellation rotation	On	[On, Off]
Time interleaver type	Type 0	[Type 0, Type 1]
Frame interval (lJump)	1	[1 to 255]
Time interleaver length	3	[0 to 255]
FEC blocks per interleaving frame	134	

Table 2-106: Framing

Parameter		Possible values
T2 frames per super frame (NT2)	2	[2 to 255]
OFDM symbols per T2 frame (LF)	60	[4 to max.], max. -> EN302755
Data symbols per T2 frame (LData)	59	[3 to max.], max. -> EN302755
Subslices per T2 frame (NSub)	10	[1 to 6480]

Table 2-107: OFDM

Parameter		Possible values
Channel bandwidth	8 MHz	[1.7 MHz, 5 MHz, 6 MHz, 7 MHz, 8 MHz, 10 MHz]
FFT size	32K	[1K, 2K, 4K, 8K, 16K, 32K]
Extended carrier mode	On	[On, Off]
Guard interval	1/128	[1/4, 19/128, 1/8, 19/256, 1/16, 1/32, 1/128]
Pilot pattern	PP7	[PP1, PP2, PP3, PP4, PP5, PP6, PP7, PP8]

Table 2-108: T2 system

Parameter		Possible values
Transmission system	SISO	[SISO, MISO]
MISO group	---	[1, 2]
PAPR	Off	[On, Off]
PAPR function tag	---	
PAPR function length	---	
PAPR gain	---	
PAPR extension limit	---	
PAPR clipping threshold	---	
FEF	Off	[On, Off]
FEF type	---	
FEF length	---	
FEF interval	---	
TFS	Off	[On, Off]
L1 post modulation	BPSK	[BPSK, QPSK, 16QAM, 64QAM]
L1 repetition	Off	[On, Off]
L1 post extension	Off	[On, Off]
Num. aux. streams	0	[0 to 15]
Cell ID	0	[0x0000 to 0xffff]
Network ID	12421	[0x0000 to 0xffff]
T2 system ID	32769	[0x0000 to 0xffff]
TX ID state	Off	[On, Off]
TX ID	---	[0x0000 to 0xffff]

2.3.18.2 PLP content**PLP 0**

Video + Audio: VV026_TS1_11986535Bps.trp

(DVTS 9 Mbit/s)

PLP 1:

Video + Audio: VV026_TS2_23973817Bps.trp

(Grouper, Flowergarden)

2.3.19 DVBT2_VV400_SFxx.wv

ARB file name	DVBT2_VV400_SF52.wv DVBT2_VV400_SF52.wv
ARB file version	01.00
Date of generation	2009-06-03
ARB file size	512 Mbyte / 1 Gbyte
ARB file play time (8 MHz CH BW)	11.5 / 23 seconds
ARB clock (8 MHz CH BW)	11.428570 MHz
Number of super frames	52 / 104

2.3.19.1 T2 transmission parameter*Table 2-109: Input mode*

Parameter		Possible values
Input mode	B	[A (single PLP), B (multi PLP)]
Number of PLP	5	[1 to 255]
Mode adapt. type	ACM	[CCM, ACM]

Table 2-110: Mode adapt., stream adapt.

Parameter		Possible values
PLP 0		
Input format	TS	[TS, GSE, GCS, GFPS]
PLP ID	0x00	[0x00 to 0xff]
PLP type	Data Type 2	[Data Type 1, Data Type 2, Common]
Mode	HEM	[HEM, NM]
ISSY	On	[On, Off]
Null packet deletion	On	[On, Off]
In-band signaling	On	[On, Off]
Number other in-band PLP	0	[0x00 to 0xfe]
PLP 1		
Input format	TS	[TS, GSE, GCS, GFPS]

Description of the waveform files

PLP ID	0x01	[0x00 to 0xff]
PLP type	Data Type 2	[Data Type 1, Data Type 2, Common]
Mode	HEM	[HEM, NM]
ISSY	On	[On, Off]
Null packet deletion	On	[On, Off]
In-band signaling	On	[On, Off]
Number other in-band PLP	0	[0x00 to 0xfe]
PLP 2		
Input format	TS	[TS, GSE, GCS, GFPS]
PLP ID	0x02	[0x00 to 0xff]
PLP type	Data Type 2	[Data Type 1, Data Type 2, Common]
Mode	HEM	[HEM, NM]
ISSY	On	[On, Off]
Null packet deletion	On	[On, Off]
In-band signaling	On	[On, Off]
Number other in-band PLP	0	[0x00 to 0xfe]
PLP 3		
Input format	TS	[TS, GSE, GCS, GFPS]
PLP ID	0x03	[0x00 to 0xff]
PLP type	Data Type 2	[Data Type 1, Data Type 2, Common]
Mode	HEM	[HEM, NM]
ISSY	On	[On, Off]
Null packet deletion	On	[On, Off]
In-band signaling	On	[On, Off]
Number other in-band PLP	0	[0x00 to 0xfe]
PLP 4		
Input format	TS	[TS, GSE, GCS, GFPS]
PLP ID	0x04	[0x00 to 0xff]
PLP type	Common	[Data Type 1, Data Type 2, Common]
Mode	HEM	[HEM, NM]
ISSY	On	[On, Off]
Null packet deletion	On	[On, Off]
In-band signaling	On	[On, Off]
Number other in-band PLP	0	[0x00 to 0xfe]

Description of the waveform files

Table 2-111: BICM

Parameter		Possible values
PLP 0		
FEC frame	Normal	[Normal, Short]
Code rate	2/3	[1/2, 3/5, 2/3, 3/4, 4/5, 5/6]
Constellation	256QAM	[QPSK, 16QAM, 64QAM, 256QAM]
Constellation rotation	On	[On, Off]
Time interleaver type	Type 0	[Type 0, Type 1]
Frame interval (lJump)	1	[1 to 255]
Time interleaver length	1	[0 to 255]
PLP 1		
FEC frame	Normal	[Normal, Short]
Code rate	2/3	[1/2, 3/5, 2/3, 3/4, 4/5, 5/6]
Constellation	256QAM	[QPSK, 16QAM, 64QAM, 256QAM]
Constellation rotation	On	[On, Off]
Time interleaver type	Type 0	[Type 0, Type 1]
Frame interval (lJump)	1	[1 to 255]
Time interleaver length	3	[0 to 255]
PLP 2		
FEC frame	Normal	[Normal, Short]
Code rate	2/3	[1/2, 3/5, 2/3, 3/4, 4/5, 5/6]
Constellation	256QAM	[QPSK, 16QAM, 64QAM, 256QAM]
Constellation rotation	On	[On, Off]
Time interleaver type	Type 0	[Type 0, Type 1]
Frame interval (lJump)	1	[1 to 255]
Time interleaver length	1	[0 to 255]
PLP 3		
FEC frame	Normal	[Normal, Short]
Code rate	2/3	[1/2, 3/5, 2/3, 3/4, 4/5, 5/6]
Constellation	256QAM	[QPSK, 16QAM, 64QAM, 256QAM]
Constellation rotation	On	[On, Off]
Time interleaver type	Type 0	[Type 0, Type 1]
Frame interval (lJump)	1	[1 to 255]
Time interleaver length	1	[0 to 255]
PLP 4		

Description of the waveform files

FEC frame	Short	[Normal, Short]
Code rate	2/3	[1/2, 3/5, 2/3, 3/4, 4/5, 5/6]
Constellation	64QAM	[QPSK, 16QAM, 64QAM, 256QAM]
Constellation rotation	On	[On, Off]
Time interleaver type	Type 0	[Type 0, Type 1]
Frame interval (lJump)	1	[1 to 255]
Time interleaver length	1	[0 to 255]

Table 2-112: Framing

Parameter		Possible values
T2 frames per super frame (NT2)	2	[2 to 255]
OFDM symbols per T2 frame (LF)	28	[4 to max.], max. -> EN302755
Data symbols per T2 frame (LData)	27	[3 to max.], max. -> EN302755
Subslices per T2 frame (NSub)	108	[1 to 6480]

Table 2-113: OFDM

Parameter		Possible values
Channel bandwidth	8 MHz	[1.7 MHz, 5 MHz, 6 MHz, 7 MHz, 8 MHz, 10 MHz]
FFT size	32K	[1K, 2K, 4K, 8K, 16K, 32K]
Extended carrier mode	On	[On, Off]
Guard interval	1/128	[1/4, 19/128, 1/8, 19/256, 1/16, 1/32, 1/128]
Pilot pattern	PP7	[PP1, PP2, PP3, PP4, PP5, PP6, PP7, PP8]

Table 2-114: T2 system

Parameter		Possible values
Transmission system	SISO	[SISO, MISO]
MISO group	---	[1, 2]
PAPR	Off	[On, Off]
PAPR function tag	---	
PAPR function length	---	
PAPR gain	---	
PAPR extension limit	---	
PAPR clipping threshold	---	
FEF	Off	[On, Off]

Description of the waveform files

FEF type	---	
FEF length	---	
FEF interval	---	
TFS	Off	[On, Off]
L1 post modulation	16QAM	[BPSK, QPSK, 16QAM, 64QAM]
L1 repetition	Off	[On, Off]
L1 post extension	Off	[On, Off]
Num. aux. streams	0	[0 to 15]
Cell ID	0	[0x0000 to 0xffff]
Network ID	12421	[0x0000 to 0xffff]
T2 system ID	32769	[0x0000 to 0xffff]
TX ID state	Off	[On, Off]
TX ID	---	[0x0000 to 0xffff]

2.3.19.2 PLP content**PLP 0:**

Video + Audio: RS_Logo

PLP 1:

Video + Audio: Codec169

PLP 2:

Video + Audio: RS_Logo

PLP 3:

Video + Audio: Codec169

PLP 4:

Common PLP

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