

R&S[®] BCMux

Broadcast Multiplexer

Specifications

Definitions

(see associated main data sheet)

Specifications

The scope of software multiplexer applications in the R&S[®]SFU depends on the intended use and requires the R&S[®]SFU-K22 TRP player option and additional R&S[®]SFU-K2xx stream libraries.

Broadcast multiplexer	supported standards	CMMB, ATSC, ATSC-M/H, DVB-T2 MPLP
	release	1.00
		see description of option for details
Prerequisites	required option	R&S [®] SFU-K22 TRP player
	additional options	
	CMMB	R&S [®] SFU-K225 CMMB streams
	ATSC Mobile DTV	R&S [®] SFU-K226 ATSC-M/H streams
Input	T2-MI	R&S [®] SFU-K227 T2-MI streams
	supported streams	customer streams and Rohde & Schwarz streams
Output	multiplexed streams	encrypted
	encryption formats	CMMB_C (requires R&S [®] SFU-K225), ATSC_C (requires R&S [®] SFU-K226), T2MI_C (requires R&S [®] SFU-K227)

CMMB software multiplexer		in line with GY/T 220.1-2006 / 220.2-2006
Input stream	file formats	BIN, MFS, CMMB_C (R&S [®] SFU-K225)
	structure	MFS with and without stuffing, PMS
	minimum sequence length	1 s (one valid channel frame)
	included input file	one file with 10 channel frames in MFS format

Output stream	file format	CMMB_C (requires R&S®SFU-K225)
	structure	MFS with stuffing, PMS
	minimum data rate	100 kbit/s
	maximum data rate	depends on transmission settings
	sequence length	corresponds to the number of valid multiplex frames in the input file
	file size	depends on data rate and sequence length
	file size limit	available hard disk capacity
	loop time	depends on sequence length
	service multiplex	
	number of PLCH services	0 to 39 (includes one CLCH service)
	service structure	1 control frame per channel frame and 0 to 38 service frames per channel frame
	added service content	empty service frames
	channel bandwidth	2 MHz, 8 MHz
	OFDM	1k, 4k (depending on channel bandwidth)
	PLCH settings	
	Reed-Solomon	0 (240, 240), 1 (240, 224), 2 (240, 192), 3 (240, 176)
	byte interleaver	1 to 3
	LDPC	1/2, 3/4
	constellation	BPSK, QPSK, 16QAM
	scrambling mode	0 to 7
CLCH timeslots	one, start TS = 0, stop TS = 0	
SLCH timeslots	1 to 39, no overlapping of services	

T2-MI software multiplexer		in line with ETSI TS 102 773
Input stream	number of input streams	one stream per PLP group
	file formats	TS, TRP, T2TRP_C
	structure	MPEG-2 TS, content files (big TS)
	data rate	up to 214 Mbit/s, calculated on file selection
	file size limit	available hard drive capacity
Output stream	file format	T2MI_C (requires R&S®SFU-K227)
	structure	DVB-T2 modulator interface (T2 MI)
	T2 MI PID	variable
	data rate	up to 80 Mbit/s, automatic estimation based on configuration and input data rate
	maximum file size	user-defined, limited by available target drive capacity
	actual file size	adjusted to match T2 frame boundary
	maximum number of PLPs	16
	PLP data source	
	single PLP in a group	all services of the selected MPEG-2 TS
	multiple data PLPs in a group	selected services extracted from content files (big TS) input by Annex D splitter
	common PLP	common data extracted by Annex D splitter
	PLP mode and stream adaptation	
	scheduling	static, dynamic
	PLP type	data type 1, data type 2, common
	baseband mode	high efficiency (HEM)
	ISSY	off, long
	max. buffer size	0 bit to 2 Mbit
	design delay	settable
	null packet deletion	OFF, ON
	in-band signaling	OFF, type A, type B
	PLP coding and modulation (BICM)	
	FEC frame	normal (64k), short (16k)
	code rate	1/2, 3/5, 2/3, 3/4, 4/5, 5/6
	constellation	QPSK, 16QAM, 64QAM, 256QAM
	rotation	OFF, ON
	time interleaver	settable
	frame interval (ljump)	settable
max. number of blocks	settable	

Output stream (cont.)	framing and OFDM	
	FFT size	1k, 2k, 4k, 8k, 16k and 32k COFDM
	guard interval	1/4, 19/128, 1/8, 19/256, 1/16, 1/32, 1/128
	extended carrier mode	OFF, ON
	pilot pattern	PP1, PP2, PP3, PP4, PP5, PP6, PP7, PP8
	bandwidth	1.7 MHz, 5 MHz, 6 MHz, 7 MHz, 8 MHz
	T2 frames per superframe (N_T2)	settable
	data symbols per T2 frame (L_DATA)	settable
	subsllices per T2 frame (N_SUB)	settable
	T2 system	
	transmission system	SISO
	PAPR reduction	OFF, tone reservation (TR)
	T2 version	settable
	L1 post modulation	BPSK, QPSK, 16QAM, 64QAM
	L1 repetition	OFF, ON
	L1 RF signaling	OFF, ON (single frequency)
	cell id	settable
	network id	settable
	T2 system id	settable

ATSC-M/H	in preparation	available with firmware V02.50
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Stream support	R&S [®] SFU	full support of all multiplexed streams
	R&S [®] SFE	full support of all multiplexed streams
	R&S [®] SFE100	full support of all multiplexed streams

Ordering information

Designation	Type	Order No.
Broadcast Multiplexer, integrated in R&S [®] SFU firmware		available for download
Broadcast Multiplexer, standalone PC version	R&S [®] BCMux	in preparation

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