

# R&S®SFU-K362

## ISDB-S Waveforms

# Specifications

### Definitions

(see associated main data sheet)

The scope of ISDB-S applications depends on the R&S®SFx-B3 ARB memory of the R&S®SFx.

|                             |                                  |   |
|-----------------------------|----------------------------------|---|
| ISDB-S waveforms            | I/Q sequences                    | satellite signals in line with ARIB STD-B20   |
|                             | release                          | 1.10<br>see description of option for details |
| ARB memory (R&S®SFx-B3)     | minimum required waveform memory | 256 Mbyte (64 Msample)                        |
|                             | recommended waveform memory      | 4 Gbyte (1 Gsample)                           |
| Waveforms with PRBS content |                                  |   |
| Transmission                | bandwidth                        | dependent on loaded waveform                  |
|                             | clock rate                       | 57.72 Msample/s                               |
|                             | symbol rate                      | 28.86 Msps                                    |
|                             | operating modes                  | digital                                       |
|                             | signals                          | main signal and TMCC signal                   |
|                             | number of signals                | A and B                                       |
| 8PSK23_24_QPSK78_24.wv      | signal A                         |   |
|                             | constellation                    | 8PSK  |
|                             | code rate                        | 2/3   |
|                             | number of slots                  | 24  |
|                             | signal B                         |   |
|                             | constellation                    | QPSK  |
| 8PSK23_44_BPSK12_4.wv       | signal A                         |   |
|                             | constellation                    | 8PSK  |
|                             | code rate                        | 2/3   |
|                             | number of slots                  | 44  |
|                             | signal B                         |   |
|                             | constellation                    | BPSK  |
| 8PSK23_46_QPSK12_2.wv       | signal A                         |   |
|                             | constellation                    | 8PSK  |
|                             | code rate                        | 2/3   |
|                             | number of slots                  | 46  |
|                             | signal B                         |   |
|                             | constellation                    | QPSK  |
|                             | code rate                        | 1/2   |
|                             | number of slots                  | 2   |

|                              |                               |  |
|------------------------------|-------------------------------|--|
| 8PSK23_48.wv                 | signal A                      |  |
|                              | constellation                 | 8PSK                                   |
|                              | code rate                     | 2/3                                    |
|                              | number of slots               | 48                                     |
|                              | signal B                      |  |
|                              | constellation                 | none                                   |
| BPSK12_48.wv                 | signal A                      |  |
|                              | constellation                 | BPSK                                   |
|                              | code rate                     | 1/2                                    |
|                              | number of slots               | 48                                     |
|                              | signal B                      |  |
|                              | constellation                 | none                                   |
| QPSK34_36_QPSK23_12.wv       | signal A                      |  |
|                              | constellation                 | QPSK                                   |
|                              | code rate                     | 3/4                                    |
|                              | number of slots               | 36                                     |
|                              | signal B                      |  |
|                              | constellation                 | QPSK                                   |
| QPSK56_24_QPSK34_24.wv       | signal A                      |  |
|                              | constellation                 | QPSK                                   |
|                              | code rate                     | 5/6                                    |
|                              | number of slots               | 24                                     |
|                              | signal B                      |  |
|                              | constellation                 | QPSK                                   |
| QPSK78_40_BPSK12_8.wv        | signal A                      |  |
|                              | constellation                 | QPSK                                   |
|                              | code rate                     | 7/8                                    |
|                              | number of slots               | 40                                     |
|                              | signal B                      |  |
|                              | constellation                 | QPSK                                   |
| Signal set                   | content                       | MPEG-2 TS null packets (PID 0x1fff)    |
|                              | MPEG-2 TS null packets        | with PRBS payload (ITU-T O.151, 223-1) |
|                              | length                        | one ISDB-S superframe                  |
| Waveforms with video content |                               |  |
| Transmission                 | bandwidth                     | dependent on loaded waveform           |
|                              | sample rate                   | 57.72 Msample/s                        |
|                              | symbol rate                   | 28.86 Msps                             |
|                              | operating modes               | digital                                |
|                              | signals                       | main signal and TMCC signal            |
|                              | number of signals             | A/B, A/B/C, A/B/C/D                    |
| Two_TS_9_sec.wv              | length                        | 9 s                                    |
|                              | required memory               | 512 Msample                            |
|                              | signal A                      |  |
|                              | constellation                 | TC8PSK                                 |
|                              | code rate                     | 2/3                                    |
|                              | number of slots               | 24                                     |
|                              | transport stream              | TS1                                    |
|                              | TS ID                         | 0x4010                                 |
|                              | video content                 | diver (720i × 576i 25 Hz)              |
| audio content                | Music_Clip1 (layer 2/384_48k) |  |

|   |                                   |                                       |
|---|-----------------------------------|---------------------------------------|
| Two_TS_9_sec.wv (cont.)                 | signal B                          |                                       |
|   | constellation                     | TC8PSK                                |
|   | code rate                         | 2/3                                   |
|   | number of slots                   | 24                                    |
|   | transport stream                  | TS2                                   |
|   | TS ID                             | 0x4011                                |
|   | video content                     | color bars (720i × 576i 25 Hz)        |
|   | audio content                     | multitone (layer 2/384_48k)           |
| Three_TS_9_sec.wv<br>Three_TS_18_sec.wv | length                            | 9 s and 18 s                          |
|   | required memory                   |                                       |
|   | Three_TS_9_sec.wv                 | 512 Msample                           |
|   | Three_TS_18_sec.wv                | 1 Gsample                             |
|   | signal A                          |                                       |
|   | constellation                     | TC8PSK                                |
|   | code rate                         | 2/3                                   |
|   | number of slots                   | 24                                    |
|   | transport stream                  | TS1                                   |
|   | TS ID                             | 0x4310                                |
|   | video content                     | factory (720i × 576i 25 Hz)           |
|   | audio content                     | flowers (AAC/144_48k)                 |
|   | signal B                          |                                       |
|   | constellation                     | TC8PSK                                |
|   | code rate                         | 2/3                                   |
|   | number of slots                   | 22                                    |
|   | transport stream                  | TS2                                   |
|   | TS ID                             | 0x4311                                |
|   | video content                     | Dvts (720i × 576i 25 Hz)              |
|   | audio content                     | Bounce_s (layer 2/384_48k)            |
| signal C                                |                                   |                                       |
| constellation                           | QPSK                              |                                       |
| code rate                               | 1/2                               |                                       |
| number of slots                         | 2                                 |                                       |
| transport stream                        | TS3                               |                                       |
| TS ID                                   | 0x4312                            |                                       |
| video content                           | color bars75 (720i × 576i 25 Hz)  |                                       |
| audio content                           | 1kHz full scale (layer 2/384_48k) |                                       |
| Four_TS_9_sec.wv                        | length                            | 9 s                                   |
|   | required memory                   | 512 Msample                           |
|   | signal A                          |                                       |
|   | constellation                     | TC8PSK                                |
|   | code rate                         | 2/3                                   |
|   | number of slots                   | 12                                    |
|   | transport stream                  | TS1                                   |
|   | TS ID                             | 0x1313                                |
|   | video content                     | transport (720i × 480i 29 Hz)         |
|   | audio content                     | Mozart (layer 2/384_44k)              |
|   | signal B                          |                                       |
|   | constellation                     | QPSK                                  |
|   | code rate                         | 7/8                                   |
|   | number of slots                   | 16                                    |
|   | transport stream                  | TS2                                   |
|   | TS ID                             | 0x1314                                |
|   | video content                     | moving color bars (720i × 480i 29 Hz) |
|   | audio content                     | freqmeas (layer 2/384_44k)            |
|   | signal C                          |                                       |
|   | constellation                     | QPSK                                  |
| code rate                               | 3/4                               |                                       |
| number of slots                         | 12                                |                                       |
| transport stream                        | TS3                               |                                       |
| TS ID                                   | 0x1315                            |                                       |
| video content                           | factory (720i × 480i 29Hz)        |                                       |
| audio content                           | flowers (AAC/144_24k)             |                                       |

|                          |                  |                                      |
|--------------------------|------------------|--------------------------------------|
| Four_TS_9_sec.wv (cont.) | signal D         |                                      |
|                          | constellation    | BPSK                                 |
|                          | code rate        | 1/2                                  |
|                          | number of slots  | 8                                    |
|                          | transport stream | TS4                                  |
|                          | TS ID            | 0xCAFE                               |
|                          | video content    | multiburst (720i × 480i 29 Hz)       |
|                          | audio content    | flowers (AAC/32_24k)                 |
| Waveform support         | R&S®SFU          | full support of all ISDB-S waveforms |
|                          | R&S®SFE          | full support of all ISDB-S waveforms |
|                          | R&S®SFE100       | full support of all ISDB-S waveforms |

## Ordering information

| Designation      | Type         | Order No.    |
|------------------|--------------|--------------|
| ISDB-S Waveforms | R&S®SFU-K362 | 2115.2450.02 |

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