

The SES software portfolio covers the following two commercial software products:

Spark Modulator DRM30

Spark Modulator DRM30 comprises of a DRM content processor with OFDM and MDI output generator.



Spark MDI Client

The Spark MDI Client processes MDI input via network or file and generates an OFDM signal.

The products can be extended by optional plug-ins as subsequently listed:

Base Product A	Spark Modulator DRM30
Option A1	DRM+ signal generator option
Option A2	MDI UDP streaming or file generator
Option A3	AM/AMSS signal generator
Option A4	FM/RDS signal generator
Option A5	xHE-AAC/HE-AAC encoder instance

Base Product B	Spark MDI Client
Option B1	DRM+ signal generator option

For **purchasing and pricing information**, please contact us at mail@drm-sender.de. If you are interested in a detailed quotation, please include a list of your items of interest together with your company information.

A: Spark Modulator DRM30

Spark Modulator DRM30 is a software-defined real-time Digital Radio Mondiale (DRM) signal generator for Linux and Windows® operating systems. The license covers a content management system with flexible datarate switching, service configurability as well as many DRM-related content generation features, such as AAC+, MOT slideshow¹, MOT website², PRBS³ and pre-coded or live (license required) xHE-AAC. DRM30 robustness modes A, B, C, D as well as many baseband-postprocessing features are included (FIR, AWGN, PAPR reduction) and different baseband output devices such as the Ettus USRP™ are supported. *This product with can be extended with optional packages as described below.*

A1: DRM+ Option

The DRM+ Option extends the functionality of Spark Modulator DRM30 to support robustness mode E for transmissions in the VHF range.

A2: MDI⁴ Streaming Option

The MDI Streaming Option extends the Spark Modulator DRM30 to encode the DRM multiplex configuration and transmit the MDI-formatted content via UDP/IP in real-time to another OFDM modulator or processor. The MDI packet stream can also be received and modulated by the Spark MDI Client DRM30 (see B) or by other MDI-compatible broadcast decoders.

1 Multimedia Object Transfer (MOT) SlideShow – see ETSI TS 101 499
2 Multimedia Object Transfer (MOT) Broadcast website – see ETSI TS 101 498
3 Pseudo-Random Binary Sequence as defined in ETSI TS 102 349 Figure 7.1
4 Multiplex Distribution Interface (MDI) – see ETSI TS 102 820

A3: AM/AMSS⁵ Option

The AM/AMSS Option is an extension to the Spark Modulator DRM30 to support the transmission of high-quality AM signals, along with digital service information on short-, long- and medium-wave. AMSS enables the transmission of SDC service information via a phase-modulated carrier.

A4: FM/RDS Option

The FM/RDS Option extends the Spark Modulator DRM30 by a FM multiplex generation and monitoring engine, including audio pre-processing and RDS service encoding and modulation.

A5: xHE-AAC / HE-AAC Encoder Instance

Spark Modulator DRM30 can be extended by up to four xHE-AAC / HE-AAC encoder instances for DRM30 and DRM+. The supported encoder engine is provided by Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V. and can be licensed with Spark Modulator DRM30.

⁵ AM signalling system (AMSS) – see ETSI TS 102 386

B: Spark MDI Client DRM30

The Spark MDI Client DRM30 is a PC-based real-time decoder software that generates OFDM IQ-baseband by decoding and modulating MDI streams supplied via UDP/IP or MDI file. Ettus USRP™ devices, IQ file output and National Instruments hardware is supported.

B1: DRM+ Option

The DRM+ Option extends the functionality of Spark MDI Client DRM30 to support robustness mode E for transmissions in the VHF range.