

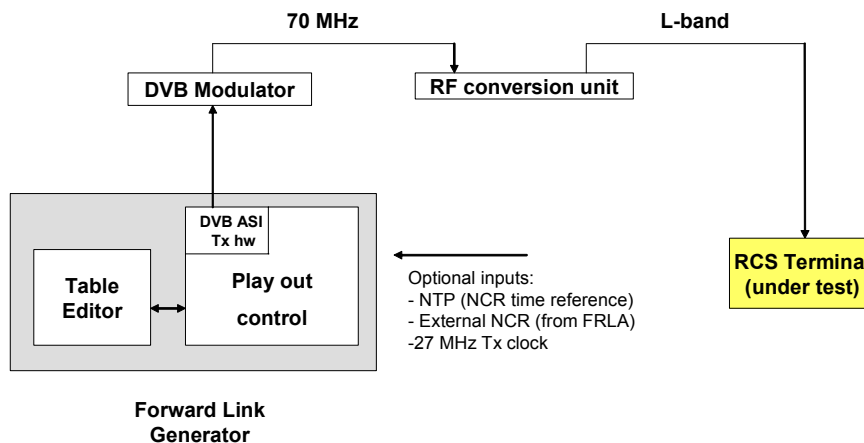
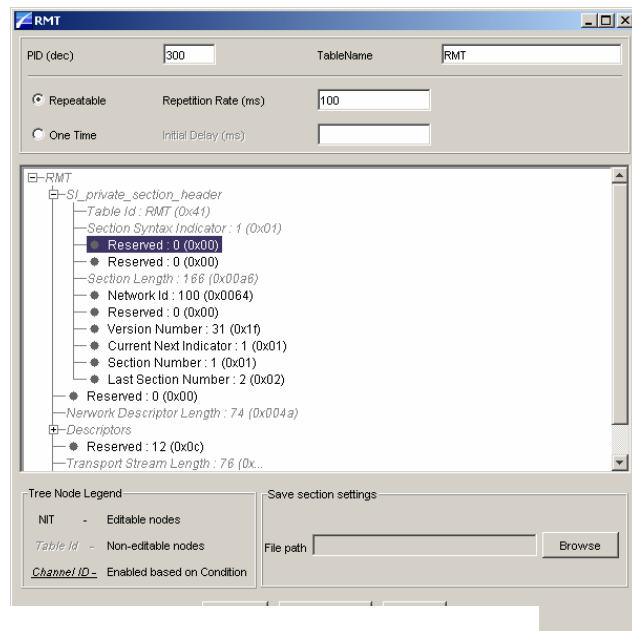
VeriSat DVB-RCS Forward Link Generator

Introduction

The VeriSat DVB-RCS Forward Link Generator (FLG) allows creation, editing, generation and playout of DVB-RCS forward link signalling tables and messages including also NCR generation. Forwarding and encapsulation of IP traffic to a user-defined MAC address is offered as an option. The FLG enables an efficient, flexible and user-friendly test and verification environment for development and verification of DVB-RCS systems. With the FLG, test scenarios and signalling configurations that would be difficult to establish when using a normal Hub may easily be configured and tested.

Main features:

- Generation and editing of forward link signalling, messages and tables in a user-friendly tree structure GUI – no scripting required.
- Tables may be imported from existing streams by using the VeriSat FLA/FRLA
- Full control of playing out the forward link tables with respect to contents, PIDs and repetition rates
- Monitoring of table play-out
- NCR options:
 - External synchronisation (using FLA/FRLA)
 - Internally generated, UTC-based in compliance with DVB-RCS recommendations
- SCT, TBTP and TIM-U ACQ Assign and SYNC Assign descriptor contents synchronised to NCR
- Fully compliant with DVB-RCS specifications (EN 301 790)



DVB-RCS Forward Link Generator test set-up block diagram.

Functional Description

General features:

- Table contents and descriptor fields may be created from scratch or opened from stored tables and edited.
- The tables are played out at a configurable repetition rate and PID.
- The tables to be played out may be stored in a play list to simplify table playout management.
- Continuity counters are updated.

NIT, PAT, PMT, RMT, FCT, TCT, SPT, MMT Broadcast TIMs	Static information normally defined with repeated playout. The version number is not changed under play out.
SCT	If the “NCR synchronisation” option is enabled, the SCT Superframe counter values and corresponding Superframes start times are calculated according to the DVB-RCS standard using the Golden Rule.
TBTP	If the “NCR synchronisation” option is enabled, the TBTP is played out either as a single message (one-time), at a defined repetition rate or for every superframe. The TBTP superframe number is calculated synchronous to the NCR value as described for SCT with an added “time in advance” parameter. This parameter determines how early the TBTP shall reach the terminal compared with respect to the current NCR value. The minimum advance time according to the DVB-RCS standard is 90 ms. The version number is incremented for each new table.
Unicast TIM	If the “NCR synchronisation” option is enabled, the superframe numbers assigned to a terminal as defined in the ACQ Assign and SYNC Assign descriptors are dynamically updated with the superframe counter values in the same way as described for TBTP. This is necessary for allowing the terminal to respond with ACQ and SYNC bursts. The terminal may be logged on or off by updating the playout and sending the applicable table as a “one-time” play out message.
CMT	CMTs with user-defined contents may be generated and played out at user-configured repetition rates. The terminal may easily be kept in Fine_SYNC mode by setting the repetition rate smaller than the assigned SYNC repeat period. The version number is incremented for each new table.
NCR	The operational modes for the NCR are: <ul style="list-style-type: none"> • External NCR is generated by external equipment that may be present in an operational forward link. If the “NCR synchronisation” option is enabled, the FLG will normally assume that the external FLG is generated according the Golden Rule*. The FLG may optionally also be set to synchronise to an incoming NCR stream independent of the Golden Rule. This option requires the presence of a VeriSat FLA or FRLA. • Internal NCR is generated internally by the NCR generator module according to the Golden Rule. The ASI output card may be locked to an external, high-stability 27 MHz source. The optional NCR payload is supported
IP traffic (option)	Encapsulation of IP traffic forwarded from the LAN to a user-defined MAC address.

*Golden Rule: NCR counter synchronous to a counter starting at UTC time zero, 00:00 1/1 1970, the first superframe also starts at this time. The PC clock is the time source for these calculations. To achieve a higher accuracy, the PC can be locked to an NTP (Network Time Protocol) time server.

Ordering information

VS610 DVB-RCS Forward Link Generator

Option: MPE encapsulation of IP traffic from the LAN to a user-defined MAC address

Revision 1.5

Copyright © Verisat 2005. Specifications are subject to change without notice.