TANGRAM
HIGH DENSITY VIDEO PLATFORM

2019-09-26, JÅ

Content

1   Release Notes for software 3.5

1.1   About this document

This document describes new features and fixed issues in the Tangram module's software.
These release notes do not reflect all changes between software versions. Minor changes and usability improvements in the web UI, are for example not shown.

Type of release:

Type	Description
General Available	A General Available release is meant for everyone.
Service Release	A Service Release solves a specific issue or has a feature developed for a specific customer.

1.2   About this release

Release name	GT23_3.5
Release type	General Available.
Release date	2019-09-26
Notes	GT23 software 3.5 requires that the GT11 runs with software ≥ 3.3 for full system mode support. See separate chameleon_tangram_software_compatibility document for detailed information on which softwares that are compatible with eachother.

1.3   New Features

- Added support for GT23 with hardware revision 1001.
- All buffer overflow warnings in the UI can now be reset at once.

1.4   Improvements and bug fixes

- Services threshold for IPTV input redundancy is now working.
- Transparently mapped inputs whose signal is temporarely lost now works.
- Improved performance on EMM processing.
- MPEG-2 transport streams carrying SI data according to SCTE 57 no longer causes the Tangram module to crash.
- Fixed a rare problem that caused the web UI to stop function.
- Overly large Network Information Tables (NITs) no longer causes the Tangram module to crash.
- Nonconformant MPEG-2 transport stream NULL packets are now handled properly.
- Large amounts of small Ethernet packages no longer causes packet loss on IPTV input.
- PID's that changes dynamically (for example at regional switches) no longer causes false CC errors.
- IPTV input redundancy now only uses the payload (not NULL packets) to calculate the bitrate.

2   Change log

2.1   Software 3.4.1 (08/2019)

- Added support for GTBLE.
- CSA scrambling now works for operation mode J.83 Annex B (12 outputs) in GT23.
- MPEG-2 transport streams carrying SI data according to SCTE 57 no longer causes the Tangram module to crash.
- Transparently mapped inputs whose signal is temporarely lost now works.

2.2   Software 3.4 (11/2018)

- Added possibility to have different symbol rates for each output in operation mode DVB-C (12 outputs) and J.83 Annex B (12 outputs).
- Added possibility to have 6 or 8 MHz channel spacing in operation mode DVB-C (12 outputs) and J.83 Annex B (12 outputs). Setting is done via Lua and requires a reboot.
- Added support for receiving multiple EMMs per EMMg.
- Improved EMM handling.
- Improved configuration of scrambling.
- Added support for EAS.
- Enhanced scrambling level configuration.
- EMMs will now be properly received even if the EMMg connection is unstable.
- IGMP query with "max response time" set to 2 no longer causes the Tangram module to stop responding.
- Remultiplexing of EMMs no longer fails on reboot.
- The ECM will now always be removed when scrambling policy is set to "Never" and connection to the CAS server is lost.
- Improved handling of inputs with poor signal quality.
- ARP flooding is better handled now.
- Scrambling will no longer suddenly stop when input signal changes.
- The EIT for a removed service will now also be removed.
- An SDT with multiple occurences of the same service is now handled.

▪ Improved input and output views in web UI.

2.3   Software 3.3.1 (10/2017)

▪ The web UI's context menus will now be displayed correctly when using newer versions of the Chrome and Opera web browsers.

2.4   Software 3.3 (08/2017)

▪ Added transport stream monitoring. Requires software option GTMON.
▪ Added All Seeing Eye support. Requires software option GTASE.
▪ Possible to block PIDs in a transparently mapped MPEG transport stream.
▪ Possible to add PIDs from any incoming MPEG transport stream to a transparently mapped MPEG transport stream.
▪ IPTV SPTS inputs can now be used with active redundancy.
▪ Improved error logging and UI feedback on Simulcrypt connection.
▪ Facility code can now be set for syslog.
▪ Support for more than 63 LCN (Logical Channel Number) entries per output MPEG transport stream.
▪ Timezone for Moscow now matches the changes that the country introduced in 2014.
▪ Manual configuration of time zone now works again.
▪ Log messages at startup will now always be shown in the GT11.
▪ A sequence number is now shown for all log messages in the web UI.
▪ Fixed descrambling problem when the CAM doesn't clear the scrambling control bits for packets containing only adaptation fields.
▪ NIT network descriptors are now propagated correctly within the Headend System group.
▪ The IP address, when using DHCP, is no longer overwritten when changing networking settings.
▪ Reverting changes for a service in the web UI no longer increments the SID.
▪ The internal configuration data is now always entirely cleared when doing a factory reset or a backup restore.
▪ Fixed an issue with IPTV input performance being lower than expected.
▪ SNMP notifications and syslog messages will now always be sent at power up.
▪ Fixed scrambling performance issue when scrambling at several hundred Mbit/s.
▪ CA descriptor is no longer lost on output after changing private data bytes in EMMg connection.
▪ Headend System groups will no longer fail to be shown in the UI.
▪ Improved EIT (Event information Table) handling. Now possible to configure which EIT data to use. This makes it possible to avoid conflicting EIT data and it also makes it possible to handle more EIT data.

2.5   Software 3.2.2 (05/2017)

▪ Added a new operation mode for 12 J.83 Annex B modulator outputs. Not all interleaving combinations are available in this operation mode.
▪ Improved performance on DVB-C output in 12 channel DVB-C operation mode.
▪ IGMP join now works when Streaming interface uses DHCP.
▪ Acquisition of IPv4 address when using DHCP always works now.
▪ All character sets should now be correctly displayed in the UI.
▪ The GT23 will no longer constantly reboot when used in slot 1 in the GT01O base unit.

2.6   Software 3.2.1 (02/2017)

New software release to address critical issue (losing the configuration after reboot).

A critical issue has been identified in the most recent software release of some Tangram and Chameleon modules. This issue may under special circumstances result in that parts of the configuration gets lost, and this will only be found out after the next reboot of the module. An input

signal with bad quality, e.g. with many CC errors may trigger the issue. Since this will not be detected until the next reboot, we would strongly recommend everybody that is running an affected version to upgrade to the latest release.

- Bulk editing of IPTV inputs.
- SNMP and log improvements.

2.7 Software 3.2 (12/2016) - please do not use this software

- CC error monitoring.
- Active monitoring IPTV input redundancy mode.
- UI: For reducing the effort of IPTV inputs configuration bulk editing is introduced now.
- Improved IPTV input FEC status values.
- SNMP enhancements.
- Scrambling Policy Fallback "Revert to clear" doesn't work.
- Scrambling system descriptor disables descrambling on some cheap older TVs.
- Improved performance of scramblers.
- Fixed bitrate measurement on IP inputs with manual bitrate setting.
- Stream type changes in input not properly propagated to output.
- Incorrect symbol rate through SNMP.
- Further improvements for the module stability.

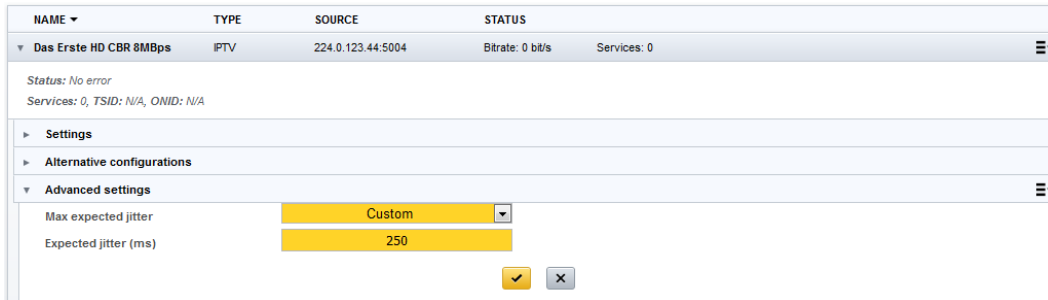## 2.8 Software 3.1 (09/2016)

- SNMP enhancements and corrections.

2.9 Software 3.0.1 (09/2016) (GT01W GT11 software ≥ 3.1)

- Improvements for the module stability.
  (Errors: Unexpected reboot due to memory allocation failure)
- UI: IGMP selection on the settings tab is available again.
- Blocking of automatically added ECM PIDs did not work after reboot.
- Clear carrier test signal is working again.

2.10 Software 3.0 (06/2016) - please do not use this software

- Optimized web UI (better performance).
- Optimized handling of IP inputs with jitter and VBR.
- Optimized performance.
- EIT sharing between TANGRAM modules could stop after some time.
- Higher performance by new processing software.
  - Up to 12 QAM channels per module for DVB-C, Annex A/C (please note the adapted technical parameter for this operation mode)
  - 128 IP Inputs (MPTS CBR or SPTS CBR/VBR) instead 64 with software 2.4
  - FEC support up to 128 IP Inputs instead 64 with software 2.4
  - Scrambling throughput max. 450 Mbps (Annex A/C, DVB-C) and max. 300 Mbps (Annex B) instead 200 Mpbs with software 2.4.
  - Processing bitrate max. 1200 Mbps total instead 850 Mbps with software 2.4
  - Number of support PIDs max. 2000 total instead 1040 with software 2.4

- Adding advanced settings for IP inputs, max. expected jitter settable (default = 100ms).

NAME ▼	TYPE	SOURCE	STATUS	
▼ Das Erste HD CBR 8MBps	IPTV	224.0.123.44:5004	Bitrate: 0 bit/s	Services: 0

Status: No error
Services: 0, TSID: N/A, ONID: N/A

▶ Settings	
▶ Alternative configurations	
▼ Advanced settings	
Max expected jitter	Custom
Expected jitter (ms)	250

→ Support for bitrates with high dynamic – VBR and higher IP Jitter

- Improved handling of dynamic payload on the output by configurable buffering.
- Adding Resource utilization monitor for better controlling the module performance.

Status	Inputs	Outputs	Service management	Settings ⚠

Chassis 190 (GT11) : Edge QAM (GT23)

General | Resource utilization

Management (CPU)

Utilization	3.79%
Memory usage	8.23%

TS processing

Utilization	0.62%
Pid mapper usage	7.62%
Memory usage	32.86%

CSA scrambler

Bitrate usage	0 bit/s (max 450.00 Mbit/s)
Key groups	0 (max 170)
Pids	0 (max 0)
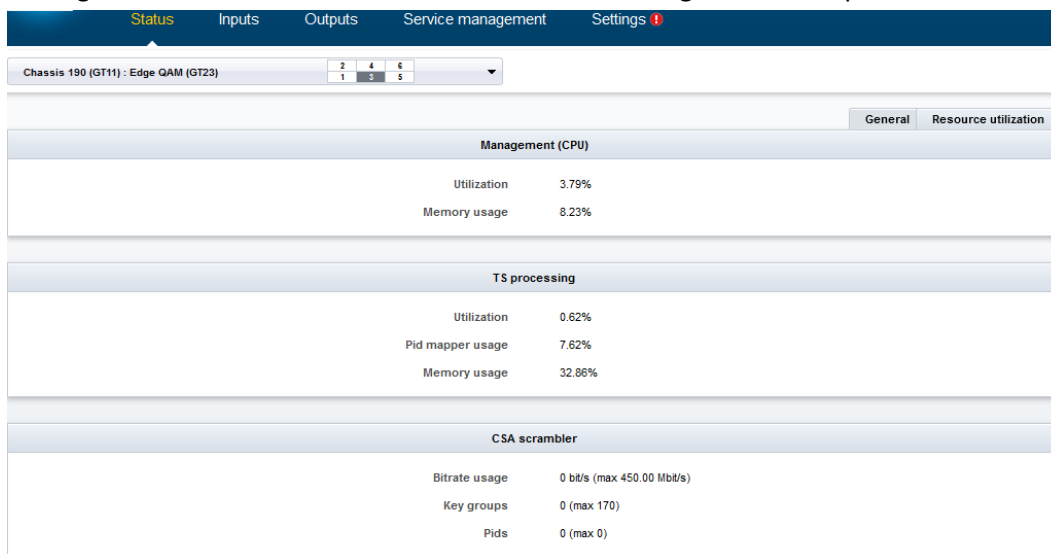
- Improved status information regarding:
  - Internal errors, e.g. due to misconfiguration or unsupported input data.
  - Data overflows.
  - Input bit rates.
  - MPEG transport stream processing utilization.
  - Scrambling utilization.

2.11 Software 2.4 (11/2015)

- Symbol rate will be not changed by updating the software.
- Incorrect bitrate limit in service management after changing bandwidth.
- CSA Scrambling for J.83 Annex B and C is working now.
- Disable outputs will be not shown in the service management view.

2.12 Software 2.3.1 (09/2015)

- EIT Barker channel support removed (reason for module performance issue, long rebooting time).

2.13 Software 2.3 (08/2015)

- Access and all changes will be logged and can be provide by syslog.
  (Precondition: authentication is enabled)
- Enhancements of SNMP get information, for more details take a look on the MIB files.
- Improvement of IP inputs.
  (On the IP inputs services and bitrates = 0 was shown rarely and the inputs was no longer available)

- Improvement of SI table generation (services ordered by SID) after remultiplexing.

2.14 Software 2.2 (07/2015)

- Add possibility to set individual symbol rates for each upconverter.
- Enhanced IP input redundancy trigger configuration.
  Adding bitrate and service threshold.

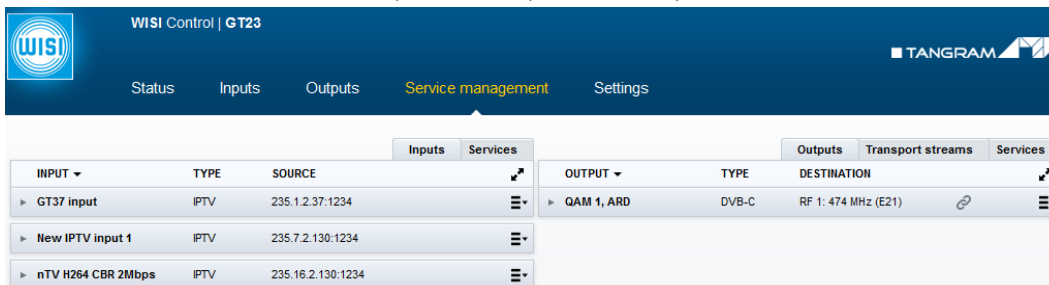|	
Redundancy mode	ON OFF
Linger time (seconds)	5
Latency time (seconds)	5
Bitrate threshold	ON OFF
Minimum bitrate (kbit/s)	0
Services threshold	ON OFF
Minimum number of services	-1

- Improvement of SI table generation (services ordered by SID) after remultiplexing.

2.15 Software 2.1 (04/2015), (GT01W GT11 software ≥ 2.2)

- Support of GT01W GT11 software 2.2
- UI: IGMP selection on the settings tab is available again.
- Improvements of the stability – unexpected reboot (memory allocation failure).

2.16 Software 2.0 (02/2015), (GT01W GT11 software ≤ 1.4.1)

- New UI look-n-feel, and UI enhancements.
  The look-n-feel of the user interface is updated for improved usability.

INPUT ▾	TYPE	SOURCE		OUTPUT ▾	TYPE	DESTINATION	
▸ GT37 input	IPTV	235.1.2.37:1234		▸ QAM 1, ARD	DVB-C	RF 1: 474 MHz (E21)	
▸ New IPTV input 1	IPTV	235.7.2.130:1234					
▸ nTV H264 CBR 2Mbps	IPTV	235.16.2.130:1234					

- Optimization of sharing NIT process with transparent outputs.
- Optimization of BER at 256 QAM mode after power on or reboot.

2.17 Software 1.9.1 (11/2014)

- Increasing IGMP memberships from 42 inputs up to 64 inputs.
  → 64 IPTV inputs working now
- Improvements of the internal webserver.
  - HTTP1.1 introduced the header "transfer-encoding: chunked"
  - GT11 failure – time out of the module during the communication with the GT11

2.18 Software 1.9 (08/2014)

- Support of DVB-C Annex B/C – adding operation mode.
- Support of up to 64 IPTV inputs.
- Adding enhanced task scheduler.
- FEC dimensions on IPTV input streams with FEC will be shown correctly on the UI.
- Same SID order in the output PAT as in the input PAT – no inverse order of the SID.

2.19 Software 1.8.1 (07/2014)

- Optimization of the carrier level after a reboot.

- Optimization of the internal memory usage – unit rebooting.

2.20 Software 1.8 (05/2014)

- SNMP: up to 5 trap receiver.
- Support of IPTV inputs with VBR.
- Optimization of configuration for multiple IP inputs.
- Optimization of PID settings via UI.
  (Output PCR PID changeable via UI)
- Improvements SNMP trap.
  (Adding PAT Error/Timeout Trap)
- Improvements on the ECMG connections.
  (ECMG settings – delay start with negative values)

2.21 Software 1.7.1 (03/2014)

- Flexible stream type settings via UI in range of 0x00 – 0xFF.
- Improvements of the module stability – Reboots.

2.22 Software 1.7 (02/2014) – please do not use this software

- Support of Simulcrypt Scrambling.
- Enable and disable PSI/SI tables via UI.
- Optimization of NIT updating after a configurations change.
- Optimization of Memory Management – memory allocation failure.
- Improvements on Data PIDs handling via LUA.

2.23 Software 1.6 (12/2013)

- Adding diagnostic file download.
- Support of mixed QAM modulation (QAM256 with non-QAM256) on a RF-Port.
- Optimization of Streaming playout in transparent and selective mode.

2.24 Software 1.5.1 (10/2013)

- Improvements of the Management MAC Communication.
- Improvements on SID Service Management change/update.
- Improvements of the dynamic PMT update.
- Optimization of Memory Management – Increasing System Heap.

2.25 Software 1.5 (05/2013)

- Optimization on Input Service Detection.
- Performance Optimization on UI for Settings with more than 3 Input redundancy signals.
- Additional output statistics on Service Management
  - Stuffing bits, data rate, output frequency, clipping
- Extension of PID Monitoring functionalities.
- Checking the SID of Validation on the output stream – not the same SID.
- Improvements on the Service Management – reducing of double information.
- Change of the PSU and Fan monitoring to "Status" page.

2.26 Software 1.4 (03/2013)

- Extensions and optimization of the SNMP Traps.
  - Trap/Clear Trap for FEC, Input bitrate, Decoder not running
  - Improvements for Timeouts by SNMP gets

- Extensions on Log Messages.
- Check of values on IP-Input Settings.

2.27 Software 1.3 (12/2013)

- Improvements of the Factory Reset and Rescue Mode.
- Extension of the SNMP Traps.

2.28 Software 1.2 (11/2013)

- Including Time Stamps for Syslog Messages.
- Options for Monitoring the PSUs and Fans.
- Extension of the SNMP Traps.
- Support of inverse Spectrum Modulation.
- Adding NIT for generation of a system NIT from transparently mapped streams.
- Integration of a PID mapper with NULL Packet stripper.

2.29 Software 1.1.1 (10/2012)

- Including FEC and Redundancy Entitlements as Options for Input Streams.

2.30 Software 1.1 (09/2012)

- Displaying on Service Output Configuration – Service Management the Input Source.
- Extension of 32 MPTS/SPTS Input streams.
- Support of 3 redundancy Input Streams.
- Support of FEC on IP-Inputs.
- Support of IGMPv3.

2.31 Software 1.0 (08/2012)

- Support of generation system cable NIT.