TTG-7000 Release Notes

Version 23.06.2001

- Corrected issue with pulse power measurement of DF pulses.
- Corrected issue with remote command response to position of DF pulses.
- Corrected issue with remote command response for data log of an ATCRBS interrogation.
- Reset Settings Menu according to selection of Multi-Receiver or DO-260 Menu.

Version 23.03.2802

- Set the Difference from Barometric, Selected Altitude, and Selected Heading to a value of zero rather than no data for Airbus VCOM.
- Modified measurement routine to allow a power dip greater than 10 dB in the UUT UF sync phase reversals.
- Added remote for loop test in the TCAS scenario.

Version 23.01.2503

- Corrected issues with Airbus VCOM.

Version 23.01.1601

- Corrected issue with Airbus VCOM NACp not being set identical in Operational Status and Target State for DO-260 A/B.
- Corrected issue in TCAS Scenario with squitters after a TCAS interrogation.

Version 22.09.2701

- Added capability of Mode C simulation without ATE lines for Honeywell.
- Added capability of Mode C simulation without ATE lines for Collins.

Version 22.07.1201

- Increased the pulse detection logic from 6 dB to 10 dB in the measurement screen for detection of S1 pulses 6 dB below P1.
- Elevated the administration privilege in Touchscreen for network settings (Windows 10).
- Added capability for Honeywell TXD to I/O Transmitter FPGA for ATE lines and Mode C replies.

Version 22.02.1001

- Added capability of displaying Mode S Address in Transponder and Receiver screens in hexadecimal or octal.
- Added remote command ":TTG7000:FMSADDR {H|HEX|O|OCTAL}" for modifying the Mode S address format.
- Added shortkey ALT+F to toggle the Mode S address format.

Version 21.11.1101

- Modified the installation software to allow using Microsoft SQL Express 2005, 2008, 2012, and 2014.
- Corrected issue on bottom antenna frequency measurement instability.

- Corrected issue on SDX remote command ":MEAS:SQUIT:ACQ:DATA?" for octal setting.
- Corrected issue on SDX remote command ":MEAS:SQUIT:AIRPOS:DATA?" for octal setting.
- Corrected issue on SDX remote command ":MEAS:SQUIT:SURPOS:DATA?" for octal setting.
- Corrected issue on SDX remote command ":MEAS:SQUIT:ACIDENT:DATA?" for octal setting.
- Corrected issue on SDX remote command ":MEAS:SQUIT:AIRVEL:DATA?" for octal setting.
- Corrected issue on SDX remote command ":MEAS:SQUIT:EVENTDRV:DATA?" for octal setting.
- Corrected issue on SDX remote command ":MEAS:CODE?" with Ident.
- Corrected issue on ATC1400 Mode A Code remote command with Ident.
- Corrected issue on SDX remote command ":MEAS:FREQUENCY?".
- Corrected issue on SDX remote command ":MEAS:POWER?".
- Added remote command ":ATC5000NG:SHUTDOWN" to shutdown ATC5000NG software and Windows.
- Corrected issue of not providing acknowledge on SDX command ":GEN:POW:TOP" for DME.
- Added display of pulse power in Watts.
- Corrected issue in Transponder Single Interrogation Menu when using the power popup entry, if using the +/- buttons closed the popup.

Version 21.02.0901

- Corrected issue with IO Receiver FPGA digital AGC at low power levels.

Version 20.09.2201

- Corrected issue on Surface Position movement decode at low speed for DO260B.

Version 20.09.1601

- Added a TISI output for Garmin on I/O BNC #6.
- Corrected for TPU-67A/B calibration/alignment issues.

Version 20.07.2401

- Corrected an issue Transmitter Summary screen not displaying Surface Position Type 6.
- Corrected an issue with the RGS2000 Command interpreter version remote command.

Version 20.02.1101

- Fix an issue with top generator A pulse power difference in Transponder mode.

Version 20.01.1601

- Corrected an issue at powerup that the transmitter modules are not initialized after reading the silicon IDs of the FPGA programming parts.
- In transponder mode desensitize Receiver during the TTG7000 interrogations.

Version 20.01.1401

- Corrected an issue in the setup program.

Version 19.12.2001

- Implemented RGS remote command to change intruder bearing while scenario running.
- Implemented RGS phase reversal width remote command.

- Allowed RGS remote command “CAF”, “CBF”, and “CCF” to change frequency when scenario is running.
- Corrected issue when switching between Multi-Receiver and TCAS that the OEM was not correct, causing power level difference.
- Added verification of OEM settings with the product key.
- Corrected RGS remote subcommand “J0” in command “ITS” to perform a single measurement.
- Added in System page menu the capability to enter the RGS2000 dash version for command emulation. Added a file in the Touchscreen to save the user input.
- Added remote command to set the RGS command dash number (:RGS:RGSEMU xx where xx is the dash number). Also added a query command (:RGS:RGSEMU?).
- Modified the relative phase continuous mode (J1) for -16 and earlier RGS2000 emulation to provide the relative phase of the antenna port selected by subcommand “D”. For all other RGS2000 dashes the J1 command replies with the relative phase of Port 2, Port 3, and Port 4 reference to Port 1.
- Modified the RGS command emulation the default reply format for -16 is floating and for all other versions is hexadecimal.
- Modified the ?TP remote command to reply the position of the SPR relative to P6 if SPR 0 is selected, and reply the position relative to SPR for all other values (1-111).
- Modified the RGS command “?RP” to automatically change to relative phase measurement (not requiring a MOD command).
- Modified the RGS commands “?PA”, “?PS”, “?PW”, “?RF”, and “?FT”.
- Corrected issue when switching between Multi-Receiver and Transponder that the OEM was not correct, causing reception to not be received.
- Added capability of reading FPGA memory size.

Version 19.10.2501

- Added RGS2000 remote command “BTC”.
- Added Honeywell TPU OEM.
- Added Honeywell TXD OEM and calibration table.
- Correction to waypoint parameter remote command.

Version 19.09.1101

- Added capability for factory calibration of Transponder pulse width and spacing.
- Added capability for factory calibration of 1030/1090 Receiver MTL for top and bottom receiver.

Version 19.08.0601

- Corrected issue Transponder Receiver Summary when Surface Position is expanded, a detail line is selected and click is performed near the edge of the screen a software exception was encountered.
- Corrected issue if a high number of Mode S replies are present when the Surface Position is expanded for details, the touchscreen became slow.

Version 19.07.2601

- Corrected issue SDX2000 remote command “:MEAS:PREPLY:TOP:ATCRBS?”.

- Corrected issue with P1-to-P1 spacing if changed while double mode is active (TX=ON) from the touch screen the first and second interrogation will be transmitted simultaneously (overlapping).

Version 19.07.2301

- Corrected issue of Transponder Double Interrogation Mode A/Mode C Alternating in second message not working properly on boot-up.
- Corrected issue with nomenclature on popup menu in Transponder.

Version 19.07.1501

- Corrected issue of PRF accuracy at high PRF Transponder Interrogation Table.
- Corrected issue with Transponder Block Mode Number of Block Transmission not working.
- Corrected issue Transponder Interrogation Table PRF reverting to 400Hz if pulse parameter was selected.
- Corrected issue of software lockup if switching from Transponder Double Interrogation with Alternate Mode A/Mode C to Single Interrogation.
- Corrected issue with nomenclature on popup menu for P6 pulse level.
- Corrected issue of Transponder Mode reverting to Block Mode when remote global reset command was received.

Version 19.06.2101

- Corrected the X pulse index to avoid conflict with the existing RCI command.

Version 19.06.1701

- Added capability to measure X pulse and remote command.
- Added remote commands for waypoint parameters for position and time.

Version 19.05.3001

- Increased PRF in Interrogation Table Transponder Mode to 10000 Hz.
- Corrected issue of Touchscreen Windows Not Responding due to high rate Receiver data filtering by SQL database.
- Corrected issue that Transmission Block in continuous mode would stop transmitting after approximately 10 minutes.
- Modified the I/O Receiver FPGA to turn off the disable (150 us window) trigger frame when a retrigger is performed after a signal that does not match the selected filter happens.
- Corrected issue on UAT menu if first airborne message defined for UAT #2 is before first airborne message in UAT #1 not all UAT messages are transmitted.
- Added capability to capture squitter messages in I/O Receiver FPGA and use the data to calculate squitter rates in Transponder Menu.
- Corrected issue in TCAS BDS registers when returning from detail menu back to BDS register and selecting another BDS register, system having violation.

Version 19.05.0801

- Corrected issue occasionally a reply was not being counted for % reply in Transponder mode.

Version 19.05.0301

- Corrected issue that in burst mode occasionally one interrogation would not be transmitted.
- Corrected issue that in burst mode all replies would not be counted.
- Burst mode PRF range was increased to 10000.
- Burst mode number of interrogations was increased to 10000.

Version 19.04.2501

- Corrected issue that RF modules were not initialized after connection.

Version 19.04.1701

- Corrected issue with IMF Flag in TIS-B and ADS-R
- Corrected issue SD and IIS data not displayed correctly.
- Corrected issue with DSP TCP/IP connection reset, after user incorrectly set a static IP to DSP connection.
- Corrected issue in TX Block very slow when there are > 200 messages with remote commands.
- Correct definition of TIS-B Coarse DO260A.
- Added remote capability of status of transmission in Transponder interrogation table during burst mode with remote command ":TTG:XPDR:ITABLE:BURST?".
- Corrected issue of % reply calculation in interrogation table burst mode.
- Buffered all signals to Scope 1 and 2.
- Added pulsewidth adjustment capability for Transponder transmission (factory).
- Added remote command ":TTG:XPDR:REPLY:CLEAR" to reset/clear reply calculations in Transponder.

Version 18.09.2501

- Corrected issue in Transponder Menu calculation of reply delay when transponder under test response on bottom antenna.
- Corrected issue in Transponder Menu, Mode A reply F2 pulse not measuring frequency.
- Corrected issue in Transponder Menu, when transmitting Mode A/C/S All Call and P3 width set to zero transmissions stopped.
- Corrected the remote RGS-2000 command for SPR location.

Version 18.08.0102

- Increase the decode window for Transponder to accept a valid reply. Transponder under test that reply delay was incorrect, the reply would not be counted.
- Corrected issue that a pulse pair that would be detected as DME would affect a Mode S reply in Transponder mode (Scope output on top antenna).
- Corrected issue that when in Transponder Double Interrogation and pulse, P1-P2 or DME pulse pair is selected the PRF sync is only depended on the PRF sync parameter. Software was using both PRF sync and sync parameters.
- Correction issue that for DO-260B Special Test Altered Preamble pulse width control and softkey had two different ranges.

Version 18.06.2701

- Corrected issue that Path in the Multi-Receiver Settings menu is blank when Block Transmission is active.

Version 18.05.3101

- Changed DME decoding to allow detection of older DME units. New decode allows pulse spacing of +/- 1 us from specification.
- Added window for Transponder reply percentage measurement to avoid counting of Mode S squitters.
- Corrected issue with Transponder Rx Summary rate dropout for messages between 20 and 25 seconds.
- Corrected issue TTG5000 returning "?" when :TTG:RESET command is sent.
- Corrected issue when "Alternate Mode A/Mode C" selected and "Reset" key is pressed.
- Corrected issue when trigger level set low in DME menu, unit occasionally did not measure pulses.
- Corrected issue in Multi-Receiver dynamic 1090 Message schedule.

Version 18.04.1601

- Corrected issue with Airbus VCOM intruder ground speed always 0 when aircraft on ground.
- Corrected issue on Transponder Double Interrogation reply scope trigger not at correct location when PRFs of the two messages are different.
- Corrected issue when in Transponder Single Interrogation with Alternate Mode A/Mode C will cause the Touchscreen Program to crash when Mode S is selected and then "Single Interrogation Mode" button is clicked.
- Corrected issue when in Transponder Single Interrogation and Alternate Mode A/Mode C Interrogation type is selected with Scope Trigger set to Reply does not function properly.
- Corrected issue Interrogation Table Burst PRF rate is still retained even when Reset button is pressed and will not revert to Normal Table PRF Rate of 400 Hz maximum rate.
- Corrected issue on the UAT Scenario screen the menu at the side does not match the main screen. (UAT Sweep Rate menu to UAT Sweep Step)
- Corrected issue in Transponder Double Interrogation that all reply pulses indicate "Out of Range" when measuring the frequency of the second reply.
- Corrected issue that at power up and then proceeding to UAT instrument and loading a saved UAT scenario file caused a failure when running a scenario.

Version 18.03.2101

- Corrected issue with TCAS scenario waypoints by time changing track or velocity stopped updating latitude and longitude parameters in position squitter.
- Corrected issue alternating Mode A/Mode C in Transponder menu did not display correct altitude or Mode A code if one of the interrogations had SLS pulse enabled.
- Corrected issue with reply scope sync in Transponder menu when double interrogation menu is selected, the two interrogations are different, and sync is set to the second interrogation.
- Corrected issue with RGS2000 remote command "ITS".

- Changed measurement methodology to allow detection of lower power level signal. If pulse rise time or fall time cannot be measured because the signal to noise is less than 20 dB, then all the other measurements will be performed and illustrated.
- Corrected issue in Transponder menu when interrogation table is used, and burst is activated and then deactivated, interrogation table PRF remained with burst PRF.
- Added capability to enter octal digits to softkey associated with Mode A code in Block Transmission.
- In UAT settings menu, the power level is resent to the DSP when modulation is set to CW.
- Corrected header in csv file for Multi-Receiver block transmissions.
- Remote command query to measurement commands that are not active will return a "#".

Version 18.02.2704

- Modified the I/O Transmitter FPGA to capture temperature of all three transmitters when any scenario is running. If the FPGA detects that a transmitter is not being used in a scenario, thus it does not have temperature data from that transmitter, the FPGA will request temperature data from that transmitter.
- Added capability to sending remote commands to the Settings menu when in UAT scenario.
- Corrected issue with reply delay and jitter when Alternating Mode A/Mode C was selected.
- Corrected issue in RTCA DO 260 Test Overlapping Pulse Mode. Pulse width can be up to 124 us. The DO 260 test requires a 120 +/- 1 us overlapping pulse.
- In transponder menu modified the sync output to be associated only with the sync message in the double interrogation or interrogation table.
- Corrected issue with TX Block Load/Save operations.
- Corrected issue in DME antenna cable loss was not being used in pulse power measurements.
- Corrected UAT GPS Lateral encoding and decoding.
- Corrected UAT NIC definition and remote commands.
- Corrected ADS-B Aircraft Length/Width definition to match the DO-260 version.
- On a TIS-B remote command setting CF field IAW the type of TIS-B message.
- Added ADS-B parameters to TCAS scenario waypoints.
- Added capability to Airbus Traffic Generator to allow saving TCP/IP or UDP connections for ease of use.
- Corrected count of DF21 messages on bottom antenna in transponder menu.

Version 18.01.1201

- Corrected issue on initial power up the Single Interrogation Menu softkey is not displayed.
- Corrected issue that the reply table on the bottom of the Transponder Menu was not being refresh in Interrogation Table mode until you entered Interrogation Table menu.
- If no reply is being received, the menu control for Reply Delay and Reply Jitter will contain "----".
- Corrected issue in DME menu when changing from MHz to 5 VOR mode.
- Upon wake-up of the Touchscreen software if the SQLExpress service is not running, the software tries to run the service. Change done because occasionally Windows on power up

does not start the SQLExpress service and then the Touchscreen software stays in Database Connection.

Version 18.01.0901

- Corrected issue in double interrogation if a Mode S interrogation was previously defined and it changed to an ATCRBS interrogation, in the interrogation column the data from the previous Mode S stayed rather than N/A.
- Corrected issue in double interrogation when transmitting and moving to pulse settings menu and returning one of the interrogations stop being transmitted.
- Corrected issue with double interrogation percent reply when moving to the pulse setting menu.
- Corrected issue that is generators A, B, C, and D are placed in bottom antenna before enabling Tx in double interrogations, the percent replies for double interrogations were not being updated.
- Corrected issue with Transponder Block Transmission Frame Period remote command.
- Corrected issue with P4 power level of ATCRBS All Calls in double interrogation when remote command value was removed when manually moving to Double Interrogation setting menu.
- Corrected unhandled exception when moving to Interrogation Table menu after remote commands.
- Corrected issue that single interrogation was being limited to low power mode after boot up or reset.
- Corrected issue with percent reply of Mode S in interrogation table pulse setting menu.
- Corrected issue that reply delay in pulse setting menu was not displaying the delay for the interrogation being viewed rather by the sync.

Version 17.12.1501

- Corrected issue with remote double interrogation commands.

Version 17.12.1401

- Calculates percent reply for message not associated with interrogation in Transponder menu.
- Corrected issue in Transponder interrogation table when bottom antenna deviation is set near bottom power mode range and P2 is enabled with power set lower then power mode range, P2 power is transmitted at high power.
- Corrected issue that when SPR spacing is changed, the width of P6 pulse also changed.
- Corrected issue when Set frequency remote command was sent and no previous scenario type was received.
- Corrected issue when on Transponder Interrogation Table, if number of interrogation remote command was transmitted no message was set as the sync message.
- Corrected issue when high volume of remote commands are transmitted to the TTG7000 in short period of time, some commands were ignore.
- Corrected issue with UAT sweep mode capability.
- Corrected issue of % reply calculation in Interrogation table.

- Corrected issue when Tx switch was toggle in Transponder Block Transmission the measurement pulse switch back to ATCRBS F1.
- Corrected issue in UAT Ground State when entering value of 0 in Lateral data.
- Added controls to visual see both the Lateral and Longitudinal values on UAT screen. User must be aware of which parameter he has selected to transmit in the UAT message.
- Added display of which remote command emulator is installed in Transponder and DME main menu.
- Corrected issue in DME menu with remote command "TTG:MEA:SET:TRIG:LDBM".
- Corrected issue with S-1403 Interlace remote command when SMEN commands followed. Only a command to SMENU #0 will be accepted and placed on the second interrogation which is the Mode S interrogation.
- Corrected issue with S-1403 remote command for Delay? and Jitter? If the unit is not currently sync with the correct message, the unit switches to the other message and performs the measurement. If the delay? command is transmitted without parameters, the unit switches to the ATCRBS message first and then to the Mode S message. The default timeout is 1 second, therefore increase the timeout if measurement requires changing sync.

Version 17.10.2501

- Corrected issue with *CLS remote command locking system when unit does not have any errors.
- Corrected issue of measuring F1 pulse when X-Bit is present in Transponder menu.
- Added to database the Emergency codes (7500, 7600, and 7700) to display on bottom of the Transponder and Receiver menu.
- Corrected issue with remote command "TTG:XPDR:MODE?".

Version 17.10.1701

- Transponder Receiver Summary menu removed the Select All softkey. Allow selection of upto 10 different messages to measure rate and decode message.
- Added Option query (*OPT?) remote command.
- Corrected issue with XPDR interference P1 pulse width.
- Added decode on the bottom of Transponder menu for ATCRBS reply with either SPI, X Bit or both.
- Modified Transmitter FPGA to maintain pulse width of DME X P2 pulse when the spacing between P1-P2 is reduced greater than -2.5 us.
- Corrected Transponder UF0 "BD" field to allow full 8 bit data.
- Corrected DME echo power range on screen and remote command.
- Corrected that DME simulation values are not initialized at power up or reboot.
- Corrected Transponder Mode A P1-P2 lower variable from 0.5 us to 0.05 us.
- Increased the DME Interrogation Rate counter to 14 bits to allow the 10,000 Hz measurement.
- Corrected the R-NAV output.
- Added remote command query for some Transponder menu variables.
- Corrected issue with Transponder Interference pulse using the attenuation level of Gen A rather than Gen E.

- Modified Transponder Summary Screen to detect the DO-260 version of UUT squitter for decoding each squitter.
- Modified Transponder Summary Screen to allow entry of zone latitude and longitude for decoding of Surface Position message.
- Modified code to re-start recording of receiver data if recording is manually turned off and Transponder Menu is re-entered with Tx on.

Version 17.08.0901

- Corrected the time between the start of the suppression pulse to P1 of the DME reply from 3.6 us to 3.4 us.
- In transponder setting screen when changing antenna ports the power level from the previous antenna setting was been used.
- Corrected issue with DME echo power dropping by 20 dB in some regions.

Version 17.07.3101

- Correction of Antenna Switch amplifier when exiting Multi-Receiver in high power mode.
- Correction in remote command ":TTG:SCENARIO:RESET" in Transponder, Multi-Receiver, and DME.

Version 17.07.2701

- Correction to Transponder menu to allow changing parameters without cycling transmission state.

Version 17.07.1302

- Modified I/O Rx DSP interrupt level to solve issue with occasional DME lock ups.
- Corrected issue S1403 remote commands.
- Added additional energy chips and bad chips to DO260 confidence menu.
- Increased the Transponder Interrogation Table size from 32 to 1000 possible interrogations.
- Corrected issue % reply on Transponder Interrogation Table.
- Added remote commands for Multi-Receiver Block Transmission.
- Added *ESR? remote command.
- Added SYSTEM:ERROR? remote command. Command provides errors that have been stored in Touchscreen. Each command will output one error until complete que has been transmitted.
- Modified *CLS to clear errors stored in Touchscreen.

Version 17.05.0301

- Corrected issues with ATC1400 command sets.
- Centered DME frequency measurement window around pulse peak.
- Added Transmission Block to Multi-Receiver menu.
- Added reply to "*IDN?" remote command via Ethernet connection.
- Added remote command ":TTG:STATUS" to reply GPIB status byte.
- Added additional remote commands for S-1403DL command compatibility.
- Corrected issue of occasional re-trigger on DME Y channels.

- Corrected issue reading temperature values after detection of temperature module.
- Added 1PPS output from TX Mod #6 in Multi-Rx and UAT mode.
- Corrected DME VOR frequency channel discontinuity in the numeric box when using the up down button.
- Corrected issue with remote command ":TTG:SET:GENE:FREQUENCY".

Version 17.02.2801

- Corrected issues with ATC1400 command sets.

Version 17.02.0601

- Corrected issues with ATC1400 command sets.
- Corrected issue with the P1 pulse of a DO-260 Message in the RTCA DO260 menu on some transmitters.
- Increased the set value range for P4 width of an All-Call interrogation to 2.75 us.
- Corrected issue with the remote command to adjust P3 width in the Transponder menu for an Interrogation Table message.
- Corrected issue in the measurement of input signal if the pulse had a plateau around -20 dBc in the falling edge.

Version 17.01.1101

- Corrected issues with ATC1400 command sets.

Version 16.12.2101

- Added mutex on all Kernel to Touchscreen Ethernet sockets.
- Corrected issue with command circular buffer pointer in Kernel and Touchscreen software Ethernet connection command interpreter.
- Allow carriage return, line feed, or carriage return line feed terminators on ATC1400A commands.

Version 16.11.3001

- Corrected issue with Ethernet ARP broadcast locking DSP connection in Windows XP.
- Corrected issue with command circular buffer pointer in Kernel and Touchscreen software.

Version 16.11.1401

- Corrected issue of occasional lockup of Receiver DSP Ethernet stack.
- Reset transmitter temperatures in I/O Tx EPLD when not in scenario for temperature control units.
- Use T2/B2 for Collins Magnitude in transponder test.

Version 16.06.2702

- Scope measurement not allow to be reset in the middle of a reception.
- In Transponder Mode, the selected pulse for measurement is not reset when the TX switch is moved to the ON position.
- Corrected issues with Mode S Interrogation SLS (P5) pulse.
- Corrected issue with SPR if last interrogation bit is a 1.

- Corrected power measurement of Start of P6 and End of P6.
- Corrected issue of occasional lockup of Transmitter DSP.
- Added a loop test capability to TCAS scenario.
- Modified the remote command for generator path to allow selecting all ports top or bottom, or individual ports only.
- SDX-2000 commands return acknowledge when remote commands come via GPIB.
- Added signal matching filters to DF data bit measurement routines.
- Corrected issue for rise and fall time reset when pulse selection is changed.

Version 16.06.1601

- Corrected issue with DME Ident Code power level when only transmitting Ident Code.
- Corrected issue that when entering DME screen signal of -7.5 dBm would be generated until the DME Tx switch was turn on.
- Corrected issue that once the unit responded to a datalog query with "EMPTY" it would continue responding with "EMPTY" for the rest of the scenario even though more messages have been received.
- Removed Frequency Error value from DME measurement screen.
- Corrected issue with DME Interrogation Scope Sync moving according to input power level.
- Corrected Application error screen in Transponder Receiver Summary menu.
- Corrected issue with negative temperature on temperature controlled units.

Version 16.05.1801

- Continue to update temperature during DME transmissions.

Version 16.05.1001

- Corrected issue with ATCRBS B1 pulse -1 dB level in TCAS scenario.
- Remote command corrections for:
  :TTG7000:XPDR:ITABLE:<table entry>:PULSE:P13SPACING
  :TTG7000:XPDR:ITABLE:<table entry>:PULSE:P16SPACING
  :TTG7000:XPDR:ITABLE:<table entry>:PULSE:P1SPRSPACING
  :TTG7000:XPDR:DBL:<interrogation number >:PULSE:P16SPACING
  :TTG7000:XPDR:DBL:< interrogation number >:PULSE:P1SPRSPACING

- Corrected issue that UAT mode not operational after changing Mode of Operation or OEM setting.
- Improvement to DME Frequency measurement.

Version 16.03.2903

- Fixed issue in FIFO between DSP Rx and DSP Tx.
- Changed Transponder Interrogation Table memory allocation to allow future S-1403 compatibility.

Version 16.03.2303

- Fixed issue with high power in TCAS with hardware versions below 7.

Version 16.03.0401

- Fixed issue with DF11 replies in transponder screen not providing %replies, reply delay, and reply jitter on bottom antenna.

Version 16.02.2601

- Added GPS time mark synchronization to TCAS Scenario.

Version 16.02.1901

- Measurement routine added capability to avoid pulse detection on a Mode S SPR with high power dip in the log video.

Version 16.02.1804

- Corrected issue with TIS-B Coarse causing missing odd squitters.
- DSP Receiver change for frequency measurement at low PRF.
- Added support to the following SDX2000 remote commands:
  :GEN:TRIGGER
  :GEN:TRIGGER?
  :GEN:TRIGGER:POS
  :GEN:TRIGGER:DME
  :GEN:TRIGGER:DME?
  :DME:EQUALIZER
  :DME:EQUALIZER?
- Added support to the following ATC-1400 remote commands:
  EQ0
  EQ1
- Added the following ATC5000NG remote commands:
  :ATC5000:DME:EQUALIZER
  :ATC5000:DME:TRIGGER
- Enabled DME Setting Menu remote commands.
- Added DME Velocity and Acceleration sync outputs for testing of parameters.
- DME Echo Power deviation increased from +5 to +6 dB.
- Removed Receiver Menu from DME Test menu.
- Corrected DME suppression timing.
- Corrected DME trigger timing.
- Lower the timeout for GPIB writes.

Version 16.01.2902

- Corrected several DME commands that did not accept the ":TTG7000" start syntax.
- Added remote command for Transponder Scope Trigger and Offset.
- Corrected a memory leak in the Transmitter DSP in the one shot routine.

Version 16.01.1401

- National Instruments 488.2 Device routines ported from low level driver to National Instrument 488.2 DLL Assembly.

Version 16.01.0701

- Increase remote command input buffer size.

Version 15.12.1502

- Corrected transmission of temperature control constant Kd.
- Corrected issue of current temperature jump during factory reset or reset.
- Modified I/O Receiver FPGA for Frequency Measurement

Version 15.12.0501

- I/O Receiver FPGA modified the clock circuitry of the Frequency Measurement function for the pulse windowing.
- Added 12 GPS parameters to the TCAS Extended Mode S waypoints.
- Corrected Transponder sync position for ATCRBS replies.
- Corrected Diversity Top/Bottom time for Single Mode reset.

Version 15.10.0701

- Corrected runtime error when performing remote command :TTG:RESET.
- Corrected issue in DSP occasionally returning Fail on Transmitter DSP version.

Version 15.07.2801

- Corrected runtime error when setting own aircraft position via remote command when in UAT scenario mode.
- Corrected issue in Transponder Block Transmission or Interrogation Table MID of UF-16 Resolution Coordination Interrogation always being transmitted as '000000'.
- Updated the Transponder Test 'Receiver Summary' screen to be more user friendly in selecting messages to display on screen.
- Corrected DO-260 Coherence Remote Command.
- Corrected issue that unit will not return measurement values after a Scenario Reset remote command.
- Added the SDX2000 Transponder Test Remote Command emulation.
- Corrected issue of I/O Transmitter FPGA providing incorrect Transponder Mode S Table slot number to I/O Receiver FPGA.

Version 15.06.1701

- Reduce the I/O Receiver FPGA Frequency Measurement Bandwidth to +/- 80 KHz
- Enhanced the Receiver DSP Frequency Search and Lock algorithm.
- Corrected issue with P6 End equal 0 on Transponder Mode S.
- Corrected issue that ATCRBS pulse menu had limit values of the Interference Pulse after showing Interference pulse menu.
- Corrected power level issue in UAT Overlapping testmode.

Version 15.05.1301

- Corrected issue with VCOM tcas_equipped variable. Zero sets RI of DF0 to 0. Non zero sets RI of DF0 to 3 (Vertical Resolution Only).

Version 15.05.0701

- Corrected issue of wrong calibration table load when entering Measurement screen.

Version 15.05.0501

- Correction for Frequency Measurement (DSP and Receiver FPGA)
- Correction in Touchscreen for command interface lockup when changing XPDR test mode and interrogation mode on back to back external commands.
- Added temperature control for TTG-5000 units with temperature controller.
- Correction for Pulse Characteristic Measurement when trigger set to Mode S ATE lines.

Version 15.03.0301

- Airbus Traffic Generator corrected issue with surface aircraft heading and movement.
- Airbus Traffic Generator corrected issue with aircraft transition from air to ground and vice versa.
- Airbus Traffic Generator changed to read the message.xml for the MTGCOUNTER and MTGPARAM1 values.
- Fix issue with aircraft at the North Pole with velocity squitter when passing over pole.
- Fix issue of intruder aircraft latitude and longitude calculations at the South Pole.
- Limit Freq1030 measurement to +/- 100 KHz.
- Limit all pulse frequency measurement to +/- 3 MHz.
- Change nomenclature of ATE line after to aft.

Version 15.01.0701

- Corrected the TIS-B Velocity over Ground Subtype 2 database definition.
- Add in the Transponder page when Suppression Output is enable a control to set the suppression percentage from 0 to 100.
- Corrected the triggering algorithm in the measurement screen to allow measuring power from +60 to +17 dBm.

Version 14.12.2201

- Added in Transponder mode a 1 usec sync pulse associated with P1 pulse of the interrogation. Sync provided on I/O Mod 3 BNC connector on rear of TTG.

- Added in Transponder mode capability to adjust P2, P6, and P5 power level.
- Disable DF16 replies in real time simulation mode.
- Set the reply antenna to both in real time simulation mode.
- In real time simulation mode set BDS tables for 61h, 62h, and 65h.

Version 14.12.1001

- Corrected issue in real time simulation of targets not replying to UF0.

Version 14.11.2601

- Corrected issue with generator frequency setting.
- Modified remote command parser to allow commands to start with :TTG | :TTG7000 | :RGS | :RGS2000NG.

Version 14.11.2501

- Added control for I/Q Filter Magnitude and Horizontal Spacing to all UAT scenario and special test menus.
- Added returning error in the status byte of GPIB interface if a GPIB error is encountered.
- Added a mode for Transponder called "Interrogation with CW", that allows transmitting a CW signal at a different power level than the interrogation.
- Modified frequency measurement algorithm.
- Solved issue of TTG reporting error when performing factory setup.

Version 14.11.1801

- Corrected issue DF5 Mode A encoding in TCAS scenario.
- Corrected issue with generator frequency after factory setting for hardware release 20.

Version 14.10.3101

- Receiver mask and database clear performed before start of Transponder interrogations to solve issue of erroneous counts for remote command (:TTG:RCV:MTCO?).
- Corrected issue that in Transponder mode interference pulse not transmitted when enabled.
- Corrected issue that in Transponder Double Interrogation mode when receiving a remote reset command setting the generator for the second signal to bottom antenna.
- Corrected issue with Transponder single shot burst.
- Corrected issue with remote command setting UAT Payload Message but not recalculating FEC.

Version 14.10.2101

- Added capability to enter UAT Ground Uplink messages as shown in DO-282B. Also added remote commands for this function.
- Changed the PRF setting for Transponder Double Interrogation to 1 to 10000.
- Changed the pulse width setting in Transponder for single pulse to 0 to 10 us.
- Corrected the pulse width of Video Data Blocks.
- If the OEM is Garmin and received the RGS-2000 command "CSD" then turn on the "ATE Lines Synchronization".
- Corrected issue that remote measurement query were changing measurement mode.
- Modified frequency measurement algorithm.
- Added a Transponder Receiver Summary menu.

Version 14.10.0201

- Corrected issue RGS parser for an intruder with multiple I subcommands.

Version 14.10.0101

- Added external command for UAT Retrigger Long ADS-B Message data size.
- Corrected issue on setting power level of UAT#2 in UAT mode.
- Corrected issue when sending FREQ 1030 remote command, measurement mode switches to pulse.
- Corrected issue with RGS-2000 scenario that switched reply on/off.
- Added capability for RGS-2000 for SDB subcommands R, S, and T.

Version 14.09.2201

- Corrected issue with latitude and longitude encoding of dynamic extended squitters by the DSP.

Version 14.09.1701

- Added capability to UAT for Horizontal Spacing and I/Q filtering.
- Corrected issue of occasional missing character in GPIB command input.
- Corrected encoding issue with Airborne Velocity message subtype 3 in database.
- Improved the compilation time of scenarios with large number of intruders.

Version 14.09.0901

- Added capability of changing frequency of Transponder Double Interrogation signals.
- Added capability of setting power mode in Transponder Interrogation Table.
- Use velocity values from Asterix data in forced trajectory waypoint rather than recalculate.
- Added in receiver UTC time tag with source from PC, GPS, or 429.
- Change velocity range for Mode S TCAS only and Mode C from 0 to 2000 knots. For extended squitter, TIS-B, and ADS-R range is dependent on velocity squitter subtype.

Version 14.08.1401

- Corrected issue with UAT Doppler Modulation frequency.
- Added in UAT Scenario Menu capability of changing CW signal frequency.
- Added capability of changing power levels of Transponder Double Interrogation signals.
- Corrected issue of TIS-B velocity rounding down.
- Corrected acknowledgement for RGS commands (TTG sometimes sending “!” instead of {“*”, “?”, “#”}).
- Corrected issue when setting P1 position to -300ns in DO260 Preamble and a long DF message is defined.

Version 14.08.0801

- Added new UAT special test for Receiver selectivity.
- Increased transmitter frequency section to 1215 MHz.

Version 14.08.0101

- Corrected issue of altitude encoding for Mode C targets.

Version 14.07.3101

- Corrected definition for encoding supersonic ground speed at 5779 knots in database.

Version 14.07.2801

- Corrected issue that when remote command to change intruder altitude was sent it would modify latitude and longitude.

- Added remote command for status of DO260 test execution.

Version 14.07.1801

- Corrected definition TIS-B velocity message subtype 1 in database.
- Improve the record/reply capability in real time simulator.

Version 14.07.1601

- Added viewing Tx Modulation in scope menu.
- Solved issue with scenarios generated from Asterix data during air to ground transitions.
- Corrected issue with remote command (:TTG7000:LIVE ON/OFF) for real time simulation mode.
- Corrected issue in remote command parser to allow setting more than 568 UAT targets.

Version 14.07.0201

- Corrected issue with Mode C altitude in real time simulation.

Version 14.07.0101

- Improved the pulse finder in the ATCRBS pulse characteristic measurement algorithm.
- Added capability for UAT receiver selectivity testing.
- Corrected issue with interference pulse in double interrogation mode (Transponder).
- Corrected issue that in Transponder mode, TTG-7000 stop transmitting after change an interrogation parameter.
- DO-260 Altered Preamble tests: DO-260 section 2.4.4.4.2.2 requires P1 input position of -300 ns. Updated the range used by the remote command parser to validate the P1 input position.
- Added capability of defining DO-260 test generator frequency in DO-260 menu.
- Added remote commands for DO-260 preamble validation tests.
- Corrected issue Mode S address of interrogation in Transponder transmission block incorrectly set.
- Corrected issue when defining large number of interrogations in a Transponder transmission block mode start of test required excessive time.

Version 14.06.2001

- Improved code to avoid an incorrect setting for the transmission mode during the global reset.

Version 14.06.1001

- Corrected issue with scenario type remote command.
- Corrected issue with pulse characteristic measurements of Transponder reply messages.

Version 14.05.2301

- Corrected issue Boeing real time simulator ownship information goes inactive.

Version 14.05.2001

- Corrected issue real time simulator not shown in intruder table.

Version 14.05.1501

- Real time simulator updates SIL value in target state and status message.
- Real time simulator added record/replay capability.
- Real time simulator improved intruder default values.

Version 14.04.1401

- Corrected issue with RX DSP loading calibration tables.

Version 14.04.1001

- At velocity squitter to TIS-B ground intruder.

Version 14.03.1401

- Corrected issue were TTG-7000 performing RGS-2000 phase measurement command.

Version 14.02.2701

- Corrected issue were TTG-7000 interface would freeze with RGS-2000 commands.

Version 14.02.1101

- Corrected issue with RGS-2000 command RFC N.

Version 14.02.0401

- Corrected issue with RGS-2000 scenario with whisper/shout level equal to 1.

Version 14.01.2401

- Corrected issue with RGS-2000 command ?RP that in mode 2 has to reply with three phase values.

Version 14.01.0201

- Updated external commands for transponder to be compatible with TTG-7000 and TTG-5000.

Version 13.12.1701

- Transponder screens changed to TTG-5000 compatible screens.
- Added multi-receiver capability.

Version 13.12.0501

- Corrected DSP lockup when static intruder with hybrid deviation on (enable).

Version 13.11.1901

- Corrected intruder passive data in the Intruder display menu.

Version 13.11.1801

- Solved issue with intruder still active in RF output with no new intruder data received from VCOM (Airbus real time simulator).

Version 13.11.0401

- Modified external commands to define Whisper/Shout levels in hexadecimal.
- Added random squitter spacing.

Version 13.10.2401

- Resolve installation error with Boeing real time simulator.

Version 13.10.1701

- Added Local/Remote external command.
- Improvements to Real Time simulator.
- Improvements to Airbus Traffic Generator.
- Added pulse characteristic of any Mode S reply pulse.
- Corrected Waypoint vertical speed definition.
- Transponder testing added block transmissions, P1-P2, Pulse, and DME 12/30 us spacing modes.

Version 13.08.2601

- Transponder – Change the transmission pulse generation responsibility to the Transmitter FPGA.
- Transponder – Added double interrogation and interference menu.
- Transponder – Added transmission block menu.
- Define external commands to support the new implementations.

Version 13.06.1002

- Support the DO-185 test (2.3.2.1.3.1.A).

Version 13.06.1001

- Boeing – Improve the Real Simulation Mode. Added a new own aircraft source “UUT”.
- Support for Scope trigger filtering by 24 bit Mode S Address. PLL freq to be set to DPSK for all modes where this filtering is supported.
- Avidyne – Implementation of the Whisper Shout self learning scheme.
- Avidyne – Support the definition of the Mode C whisper shout level, antenna and quadrant during the transmission.

Version 13.05.0901

- RTCA/DO 260 Test – Improve the functionality of the special test “Preamble Validation”.

Version 13.05.0801

- RTCA/DO260 Test – Improve the definition of the special test “Preamble Validation” (external commands, load/save CSV file).
- Corrected definition of the Ground Track Status in the BDS 06.
- RGS2000 Compatibility –Accept optional spaces between command and arguments.

Version 13.04.3001

- Improve algorithm for parsing the received data during the real simulation mode (Boeing).
- Add Rise/Fall definition for the 1090 channels in the scenario configuration (Selex).
- Definition of the TIS-B Fine position for the CF = 5.

Version 13.04.1901

- RTCA/DO260 Test – Define range for the P1 position in the special test “Altered Preamble”. Can be negative or positive offset.

Version 13.04.0801

- Measurement Scope – Support the signal filter used for Mode A/Mode C and Mode S. Definition of external commands to support the signal filters.

Version 13.03.2601

- First approach for the Real Simulation Mode for Boeing (No DSP participation).

Version 13.03.2101

- Corrected runtime exception during waypoints definition.

Version 13.03.1901

- Support the implementation of the interactive attenuation correction.

Version 13.03.0701

- Measurement – Scope – Updated routines used for calculating frequency.

Version 13.03.0401

- Fix 1 degree error in ACSS OEM.
- Collins Magnitude to be set when entering Transponder modes and restore original OEM when not in transponder mode.
- Support for all versions of DO260 in simulation mode.

Version 13.02.2501

- Corrected incorrect behavior of the external command to define the DF16 replies data.
- Corrected ADS-B loss data and incorrect transmission rate.

Version 13.02.1901

- Identified problem in the database function used for encoding the latitude.
- SELEX – Write to the DO260 test CSV file the power mode.

Version 13.02.1501

- Transponder – Decrease rate for query to database for calculating the replay delay.
- Transponder - Updated format numeric for the controls that show the % replies (one point decimal).
- Transponder - Turn off suppression when exit the Transmission Mode page and not running a test.
- SELEX – Corrected issue of no transmissions for any 1090 channels because incorrect frequency setting.

Version 13.02.0101

- Added the squitter Aircraft Status Type Code 28.
- Created external commands to support the definition the squitters schedule.

Version 13.01.0401

- Corrected problem with the Mode C Interrogations when the OEM selected is Avidyne TAS.
- Avidyne – Corrected problem with the Mode C Replies thru the generator A.

Version 12.12.1801

- Added TAS functionality (Avidyne TAS and Avidyne ADS-B).

Version 12.12.1201

- Improvement Measurement menu the algorithm used for analyze the solicited signal packages sent by DSP.

Version 12.12.0702

- Corrected runtime exception when exporting data logging.

Version 12.11.2002

- Airbus – Incorrect status assigned to inactive intruders received from VCOM.
- Avidyne - Redundancy in the TIS-B definition according the CF value. CF field initializes with default value using the position type. No aircraft identification definition for Coarse Position.
- Corrected runtime exception when using the external command ":TTG7000:SET:RCVR:PATH 0".

Version 12.10.1101

- Avidyne – Data Loss in UAT scenario when defined maximum capacity. Decrease (100 ms) the time when sending the UAT dynamic data to DSP.
- Solved runtime exception identified by ATG when executing "Factory Setting" from the "Settings menu" and return to previous menu.
- Corrected the RTCA/DO260 Test issue – Random Trigger does not work in some generators.

Version 12.10.0501

- Corrected Measurement (Scope User Control) runtime exception.
- Added functionality for support Sweeping Mode in both generators in the UAT scenario. Implementation of external commands to support UAT sweeping mode.
- Added functionality for support Random Squitter Spacing in the TCAS scenario. Implementation of external commands to support Random Squitter Spacing.

Version 12.09.2701

- Force Low Power Scenario when Avidyne OEM.

- Implementation of the externals commands to support UAT scenario and TCAS scenario with Avidyne OEM.
- Avidyne – Scenario – Random Squitter Spacing between dynamic intruders messages only for Gen C. Squitter Spacing between static intruders messages only for Gen A.

Version 12.09.1801

- Airbus – Traffic Generator - Flight ID incorrect decoding.
- Airbus – Traffic Generator – Incorrect allocation in the Mode S Address Table.

Version 12.09.1401

- Airbus – Traffic Generator – Solved issues relative to Bearing Radial Waypoint, Radial Rate Waypoint, incorrect Velocity Squitter and scenario generated from ASTERIX source data.
- Helix/spiral waypoint to update velocity squitters.

Version 12.09.1201

- Added support of generating 600 intruders for TCAS scenario.

Version 12.08.3001

- Transponder – Solved the runtime exception when trying to see the reply data field details.
- Transponder – Improved the way to define the enhanced interrogations.
- SELEX – Scenario - 1030 Messages – Solved the issue that produces an extra block transmission.

Version 12.08.1601

- Allowed define the Own heading thru external command in the range [-180, 180].

Version 12.07.2601

- Implementation of new process to avoid the User Interface to be stuck in “Initialization Hardware” forever.

Version 12.07.1901

- TX Block Transmission – Solved the issue that stop the transmission at 50 secs.

Version 12.07.1601

- Added support for Avidyne OEM.
- PLL not shutting down was fixed.
- Horizontal-only now supported around the poles.
- Bug in velocity time waypoint that multiplied radial speed by 60 was removed.

Version 12.06.2901

- Target State and Status – Set by default subtype when MOPS Version B.
- SELEX – Scenario – Ordered the 1090 static intruders by Mode S Address.

- Airbus – Traffic Generator Mode – Velocity Squitter - Updated the encode for the field “Airspeed”.

Version 12.06.2201

- Honeywell – HWEXEC – Solved problem identified with the test 242181, reviewed the GPIB receiver routines.
- Airbus – Traffic Generator Mode – Support UDP Connection.
- Flat approximation for North/South Pole scenarios.

Version 12.06.0801

- Solved the runtime exception during loading scenario with waypoints defined by latitude/Longitude.
- Improved the socket connection process with the Traffic Generator for decrease the delay between connections.
- Attenuation correction tables to change, not only with frequency, but also with power range. Supports Great Circle navigation for TCAS intruders. Revision of the defaults for squitters in simulation mode. This inclusion forced resizing of the code memory. This version with has the ECEF code commented out so as to make it fit into the older smaller size.

Version 12.05.2901

- Airbus – Traffic Generator Mode – Added control for Maximum Silent Time (secs).

Version 12.05.1501

- L/W Codes for Version 1 participants.

Version 12.05.0701

- Solved the out of range identified in the external command to define the time of each message in the TX Block.

Version 12.05.0201

- Solved the issue in the field “Lateral Axis GPS Antenna”.
- Enable the control “Altitude Report” for all different intruder modes.

Version 12.04.2501

- TX Block – Increased Frame Period to 90 secs. Defined external command to query the TX Block transmission runtime.
- SELEX – RTCA/DO 260 Test – Solved the issue with the trigger mode “Walk”.

Version 12.04.1301

- Corrected the Target Status and State squitter fields “Select Heading” and “Select Heading Sign”.
- Selex UAT receiver corrupted data. Increased receiver buffer size.

Version 12.04.0901

- Solved runtime exception when try to show the squitter ME field.

Version 12.04.0201

- Added control, “Re-compile After Load”, to scenario screen to compile the scenario csv file after loading.
- Corrected Garmin ATE line issue.

Version 12.03.2701

- Added the key combination Alt+C to execute scenario compilation.

Version 12.03.1901

- Assigned different Mode S Address to intruders created from external commands.
- UAT adjusted the transmission period according to requirement.

Version 12.03.0601

- Added acknowledgement to the following external commands: Start DO-260 Tests, Start TX Block Transmissions, Start MLAT Block Transmission, and Start Fruit Table Transmission.

Version 12.02.2501

- Added external commands to allow CPR field of the position squitter to be controlled by the operator.
- Corrected Selex Multilateration Block transmissions.

Version 12.02.2001

- Surface position change the range of the Movement field according to MOPS version.
- Selex Multilateration Block decreased number of messages to 1446.

Version 12.02.1001

- Identification Squitter implemented the no data ident.
- Allow track parameter in scenario screen to be define in the range of [0, 360] or [-180, 180] thru the external commands.
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Version 12.02.0801

- Allow setting type 0 – No position Information squitter from external commands.
- Avoid overwrite of path loss data for Selex on new software installation.
- Corrections on Selex fruit.

Version 12.02.0601

- Airborne position bit 40 depends on MOPS version.
- Added subtype 0 and 1 for Target State and Status for DO-260 MOPS version B.
- TIS-B Surface Position encode/decode the movement field in accordance with MOPS version.
- Intruders with altitudes < -1000 Feet, altitude code will be set 0 (No Data).

- Set limit of UAT/ADS-B messages for Selex capacity tests to 1500 messages.
- Added Selex fruit capability.

Version 12.01.2501

- Corrected UAT Ground Uplink transmission problem.

Version 12.01.2401

- Corrected an issue on the TCP/IP Address Change Menu that reset the values on the screen after setting to a default value. The issue was only visual, the address was set to the value entered by the operator.
- Change the range of the velocity control IAW the velocity type selected.

Version 12.01.2003

- Allow capability of setting Ethernet connection TCP/IP address to static or dynamic from within the Touchscreen software.

Version 12.01.1901

- Allow capability to set Invalid/No Data for velocity on UAT messages.

Version 12.01.1801

- Modified Receiver Module FPGA and Receiver FPGA for UAT reception.
- Corrected issue with UTC midnight rollover for PC time and GPS time.
- Corrected issue with Selex capacity test.
- Modified DO-260 Special Mode “Bad Bits” to define the bits that have energy on both halves and also to define bad bits. A remote command has been added to select the bad bits.
- Corrected the Video Data Block (VDB) Definition menu to show the whisper shout triggering for Mode C.
- Corrected TX Block Mode message timing range.

Version 12.01.1001

- Corrected issue with UAT ground uplink reception identification.
- Added new masks to support the TIS-B Fine Position with CF = 5.
- Corrected HWEXEC "242173.smh" issue.
- Use aircraft velocity for the airspeed parameter of the “Airspeed and Heading” squitter.

Version 11.12.2101

- Solve issue with TXBLOCK:START and MLAT:TXBLOCK:START remote commands.

Version 11.12.1302

- EADS Target Generator does not interpret intruder id 1001-1003 as intruders if own aircraft source is set to manual, 429, or external.
- EADS Target Generator corrected formula for velocity squitter.
- 429 Configuration screen is active. Latitude labels can be 110/120, 254, or 310. Longitude

labels can be 111/121, 255, or 311. Heading labels can be 320, 314, or 313. Operator can select the 429 receiver (1, 2, or 3) for each parameter (altitude, latitude, longitude, and heading).
- Selex on receiver time reset, all receivers are deactivated until the next PPS signal (for synchronization), to avoid erroneous time stamp between receiver reset and PPS signal.

Version 11.12.0102
- UAT reception issue when transmitting two UAT messages simultaneously.
- Allow in Selex mode displaying external ATCRBS interrogations.
- Correct issue of no transmissions when switching from Selex to Transponder mode or vice versa.

Version 11.11.2201
- Corrected issue with bearing on Mode C Static intruders.
- Added capabilities to transmit/receive and alter X and SPI bit for Selex.
- Modified Selex ATCRBS fruit to 5 bits only.

Version 11.11.0401
- Corrected issue that dynamic intruders that are not defined active at time = 0 were not turning on later in the scenario.
- SELEX – Updated the total messages (1488) allowable in the definition of the block transmission (multilateration).
- Corrected top/bottom antenna triggering of Video Data Blocks.

Version 11.10.1701
- Corrections to Selex Multilateration.

Version 11.10.1401
- Correction on UTC time for repeated timestamps.
- Corrected the external commands for high power for DO-260.
- Allow defining a blank identification on the external commands in the Ident squitter for an extended Mode S.

Version 11.10.1002
- Added quantity of transmission blocks to Transmitter Block screen.
- Added multilateration mode for Selex.

Version 11.10.0402
- UAT Receiver Mask corrected.

Version 11.10.0301
- Transmission block allow definition of message time up to the period time.
- Selex configuration 7 and 9 set to lowest noise floor level after all transmissions completed.

- Selex UTC time updated continuously.
- Allow single letter GPIB commands.

Version 11.09.2802

- Corrected the video data block 250 usec trigger pulse. If the trigger was set to a large range number and when we were transmitting the trigger pulse the UUT changed whisper/shout or transmission state (ATE lines) the trigger pulse would not reset.
- Transmission block allow 24 bit for MID field on Coordination interrogations.
- TCAS scenarios allow forced trajectory on waypoints.

Version 11.09.2701

- Corrected the external commands for the valid ranges for the DO-260 Altered Preamble special test.

Version 11.09.2601

- Corrected preamble settings for DO-260 Preamble altered special test.
- Avoid redundant transmissions to Antenna Simulator module for UAT tests.

Version 11.09.2205

- Transmitter Block corrected short DF message and PI field.
- Added TTG-7000 external command to perform a global reset. The new command resets TCAS scenario, DO-260B scenario, Transmitter Block scenario, Own Aircraft parameters, and performs TCAS Factory Settings.
- Reset ATE line adapter setting for Collins after power up.
- DO-260B screen for all special tests (Altered Preamble, Overlapping Pulse, and Bad Chips) generate same signal simultaneously on top and bottom antenna for low power configuration.
- Corrected external command for own aircraft heading.
- Corrected external command for reply channel for hardware version 06.
- Corrected Video data block reply channel 2/3 (Gen C/Gen D) to respond on top and bottom antenna.

Version 11.09.1401

- GPIB receiver allows GPIB messages to be transmitted in multiple transmissions.
- Waypoint trajectory using specific latitude/longitude/altitude data (Fly-thru points).
- External commands for UAT dynamic intruders.
- Corrected ATCRBS D4 pulse width.

Version 11.09.0205

- UAT UTC time uses either PC time or GPS input time.
- GPS input time is adjusted to UTC time.
- Selex added path loss entry/adjustments.

Version 11.08.3101

- TTG-7000 UAT Transmission reception added.
- Added serial poll status byte for GPIB communications.

0x20 – Command Complete, Unit Ready
0x10 – Transmit Queue not empty (Data available for GPIB read)
0x01 – Syntax Error
0x02 – Execution error. (Bit can be reset by sending gpib command *CLS)

- Save last setting of Scope Port 1/2 and Collins ATE Direct/Interface Box. Upon power up the setting is reestablished.
- Add external commands for the Target State and Operational Status squitters.

Version 11.08.2301

- Full power level capability from +1 to -98 dBm for UAT transmission on certain Selex configurations.
- Video Data Block Mode S Trigger.
- TISI synchronization every second for Garmin OEM when ATE Line synchronization is enabled.
- Allow capability of setting same MSO on different UAT transmission channel.
- Provide TOMR signal on scope channel 1 and 2 (Transmitter FPGA selection).