

## Changelog APSIN Firmware

| Date       | Revision | Changed   |
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| 01.07.2019 | 0.4.140  | <p>APULN: Fixed changing output power setting in output blanking disabled mode.</p> <p>APULN: Fixed reduced frequency resolution after turning off frequency or phase modulation.</p> <p>APSINxxG: Supporting new hardware.</p> <p>APMS40G: Reduced power overshoot in output blanking disabled mode.</p>   |
| 03.06.2019 | 0.4.139  | <p>all with option AVIO: Added AVIO settings to stored device settings and power up default settings.</p> <p>APULN: fixed firmware slow / nonresponsive with RF output off in low AM noise mode.</p> <p>APULN: removed invalid 10 MHz reference output selection on touchpanel for devices without option LN.</p>   |
| 20.05.2019 | 0.4.138  | <p>APSINxxG: Fixed AVIO modulation not working with earlier firmware.</p> <p>APSINx010: Changed cooling fan control with active AVIO modulation.</p>  |
| 11.04.2019 | 0.4.136  | <p>APMSxxG: fixed bug for ULN version</p>   |
| 04.04.2019 | 0.4.135  | <p>All: Changed VXI-11 link to accept instrument identifier "inst0" case insensitive. This makes Anapico devices compatible to software like R&amp;S EMC32.</p> <p>APSYN140: External pulse modulation now active only with source selection external and pulse modulation enabled.</p> <p>All with option TP: Added saved settings support to touch panel.</p> <p>All with option TP: Added trigger output configuration to touch panel.</p> <p>All with option TP: Added user memory sanitation to touch panel.</p> <p>All with options TP and B3: Added battery indicator to touch panel.</p> <p>APMSxxG: Added extended frequency resolution mode. Frequency resolution improves by <math>\geq 14</math> bits (or 6e-6 ppb / 0.00012 Hz at 20 GHz). In high resolution mode, switching time is longer and there is no phase setting. Command: <code>FREQ:RES LOW HIGH</code>.</p> |
| 25.02.2019 | 0.4.134  | <p>APSYN140: Fixed inaccurate center frequency and modulation depth in FM/PM.</p> <p>All: Dropbear upgrade to 2018.76 fixes SSH and SCP security issues.</p> <p>APULN: Added support for RF enable/disable while in sweep mode.</p> <p>APULN: Added complete reference input configuration to the front panel.</p> <p>APULN: Fixed false "unleveled" warning when AM/FM/PM is enabled (option MOD only).</p> <p>APULN: Added external AM/FM/PM control to the front panel (option MOD only).</p>  |
| 15.02.2019 | 0.4.133  | <p>APULN: Fixed settable FM deviation range on front panel.</p> <p>APULN: Added "unleveled" detection.</p> <p>all with option TP: Added "unleveled" indicator on CW screen.</p> <p>APMSxxG: Improved synchronous multichannel sweeps support.</p> <p>all with option FS: Added triggered pulse modulation.</p>  |
| 22.01.2019 | 0.4.130  | <p>APMSxxG: fixed save configuration function, fixed rename of device function.</p>   |
| 03.01.2019 | 0.4.129  | <p>APSINx010, APSINxxG: Fixed FM deviation not settable on front panel.</p> <p>APSINxxG: Fixed low frequency band (&lt; 10 MHz) sweep support.</p> <p>APMSxxG with options ULN and PHS: Added phase sweeps.</p> <p>All with option FS: Added trigger output polarity setting (<code>TRIG:OUTP:POL NORM INV</code>).</p>   |

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| 18.12.2018 | 0.4.127 | APMS: Improved power level accuracy in POW:ALC:HOLD ON mode.<br>APMS, APSINxxG: Supporting new hardware.   |
| 06.12.2018 | 0.4.126 | APULN: Preliminary full modulation support: AM, FM, PM internal and external.<br>APULN: Fixed slow power settling in pulse modulation.<br>APSYN140: Fixed bad output power accuracy after RF on/off and frequency changes.<br>APGEN3000: Fixed wrong timing on 3 point list sweeps with direction down.  |
| 03.12.2018 | 0.4.125 | APSINxxG: Fixed invalid spectrum appearing up to 250 ms after RF enable.<br>APULN, APSYN140: Improved spurious and noise performance.  |
| 14.11.2018 | 0.4.124 | APMS with options ULN amd PHS: Initial release of "phase memory" (absolute phase) and phase sweep support.<br>APGEN3000: Fixed RF disable/enable not working in sweep mode.  |
| 06.11.2018 | 0.4.123 | All with option GPIB: Can now be used as external source for Anritsu's VectorStar VNA.<br>APMS: faster band crossing for sweeps (< 10 us).   |
| 28.09.2018 | 0.4.122 | APMS: Fixed *RST and OUTF OFF ON not working while a sweep is active.<br>APMS: Improved level accuracy in ALC hold mode for fast sweeps.<br>X: Disabled programming and locking speed priority over spurious priority. This improves spurious performance for fast sweeps.<br>All with option FS: Changed pulse modulation rounding mode: pulse width and pulse period have priority over pulse pause. |
| 14.09.2018 | 0.4.121 | All with option GPIB: Preliminary support for use as external source for Anritsu's VectorStar VNA.   |
| 04.09.2018 | 0.4.120 | APMS: Fixed bug with phase setting at certain frequencies for APMS-ULN.<br>APMS: Added support for option PHS.   |
| 13.08.2018 | 0.4.118 | APULN: Supporting new hardware.  |
| 10.07.2018 | 0.4.117 | All: fixed firmware nonresponsive when starting sweeps with unsupported trigger setup.<br>All without option FS: Added trigger output mode "valid": trigger output is high while swept signal is on and stable. Related command is TRIG:OUTP:MODE VAL.   |
| 25.06.2018 | 0.4.116 | APSIN26G: Fixed invalid selftest result code.  |
| 17.05.2018 | 0.4.115 | APSYN420: Fixed invalid selftest result code.<br>APMSxxG: Support for ULN version<br>APMSxxG: fix crash when starting a list sweep   |
| 30.04.2018 | 0.4.114 | APULN: Supporting new hardware.<br>Option FS: Improved trigger latency.<br>APSYN420: Added abort triggered CW frequency hop. Send ABOR to abort all pending hops.<br>APSINxxG: Fixed unstable RF output phase in pulse modulation.   |
| 07.03.2018 | 0.4.113 | APSINxxG: Added support for FM/PM with swept carrier.  |
| 09.02.2018 | 0.4.112 | APMS20G: Fixed no signal below 140MHz.<br>APSINxxG: Improved trigger sytem eliminates missed external triggers.  |

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| 02.02.2018 | 0.4.111 | APMSxxG: Fixed locking issues for the APMS20G version.<br>APSNxxG: Improved trigger system accepts higher trigger rates (< 670 us period).  |
| 31.01.2018 | 0.4.110 | APSNxxG: Added selftest with report. New commands: *TST now runs leveling control and synthesizer self tests and returns zero=good/nonzero=bad, DIAG:TEST:REP? returns a complete selftest report.  |
| 23.01.2018 | 0.4.109 | All: Fixed firmware nonresponsive when starting chirps.<br>Option FS: Shorter setup time for sweeps in ALC HOLD mode.<br>DUAL APSYN420: Added preliminary synchronous multichannel chirp support. New commands: CHIR: MULT OFF ON, CHIR:STAR, CHIR:STOP.  |
| 14.12.2017 | 0.4.108 | APMSxxG: Fixed PLL spurs around 6GHz. Added manual ALC bandwidth selection, related commands are POW:ALC:BWID LOW HIGH, POW:ALC:BWID:AUTO OFF ON.<br>All: Added sweep control support by center and span, related commands FREQ:CENT, FREQ:SPAN.<br>Added sweep command format SWE[:FREQ]:x. Improves compatibility with other SCPI instruments.  |
| 29.11.2017 | 0.4.107 | Dual APSYN420 with option FS: Fixed sweeps not working on channel 2 bug. Bug exists in FW 0.4.99...106.<br>All: Added reconnect on socket link upon inactivity timeout using command SYST:COMM:LAN:RTMO <x>. Refer to 0.4.106 changes for details.  |
| 04.10.2017 | 0.4.106 | All: Added reconnect on VXI-11 link upon inactivity timeout. "Lost" VXI-11 links (links that were not closed correctly) can be reused. Default timeout is infinite, no reconnect possible (as with earlier firmware). Setting a finite timeout enables reconnect.<br>The inactivity timeout is set by SYST:COMM:VXI:RTMO <x>, where <x> is the timeout in seconds or INF for infinite.<br>Upon inactivity timeout, the link remains active first. Only opening a connection when all links are used causes the oldest inactive link to be closed and reused for the new connection.<br>APMSxxG: improved frequency switching speed. Minimum switching time is 15us for frequencies < 90MHz, 25us for frequencies >= 90MHz.<br>APSNx010: Phase continuous frequency hopping for small steps (< 10 %) within same band. |
| 16.08.2017 | 0.4.105 | APMSxxG: Improved phase noise vs. FW 0.4.104.<br>APSNxxG: Update to factory calibration interface.  |
| 24.07.2017 | 0.4.104 | APSNxxG, APSYN420: Faster sweeps.<br>APMSxxG: Fixed nonresponsive output upon *RST.<br>APMSxxG: Fixed multi channel sweeps.   |
| 28.06.2017 | 0.4.103 | Option FS: Fixed missed trigger events issue when using high trigger repetition rates (> 10 kHz).   |
| 15.05.2017 | 0.4.102 | APSNxxG with Option LN: Added support for new hardware. Improved locking to 10 MHz external reference.<br>APSNxxG/x010 with SN xxx-xxx6xxxx-xxxx: improved AM depth accuracy below 10 MHz.<br>APSYN420 with SN xxx-xx8xxxx-xxxx: Fixed issue with improved spurious performance in the 9.7...10.2 GHz range.  |
| 12.05.2017 | 0.4.101 | APSNxxG: Fixed 0.4.99/0.4.100 sweep bug (some points with too low RF power).<br>Option FS: Improved chirp modulation support.<br>Option FS: Now using SWE:COUN for frequency/power sweep, LIST:COUN for list sweeps instead of using SWE:COUN for all sweeps.   |

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| 26.04.2017 | 0.4.100 | APMSxxG, APSINxxG/x010 with Option FS: Pulse video signal from selectable channel now available at FUNC OUT.<br>APSINx010: Improved frequency resolution. Use FREQ:EXAC? query to get exact output frequency.<br>APMSxxG: Restoring individual preset CW frequency/power setting after stopping a sweep. |
| 05.04.2017 | 0.4.99  | APSINxxG: Improved frequency resolution. Use FREQ:EXAC? query to get exact output frequency.<br>APMSxxG: Individual pulse modulation settings per channel.   |
| 30.03.2017 | 0.4.98  | APSINxxG/x010: Improved FM and PM deviation accuracy.<br>APSINxxG/x010/APMSxxG: Supporting new hardware.<br>APSINx010: Improved spurious performance.  |
| 09.03.2017 | 0.4.97  | APSINxxG/x010: Supporting new hardware.<br>APMSXXG: Preliminary synchronous multi-channel sweep support.   |
| 20.01.2017 | 0.4.96  | APSIN20G + APSYN420: Fixed FM not working in 0.4.95.<br>APMSxxG: Fixed power issue at -20dBm and frequency >= 7GHz   |
| 19.01.2017 | 0.4.95  | APSIN20G + APSYN420: Improved spurious performance, added MEM:FILE:CORR:FLAT:PEEK? <filename> query.   |
| 15.12.2016 | 0.4.94  | Added "RF enabled while waiting for trigger" setting for sweeps and list sweeps: LIST SWE:BLAN 0 1. Default is 1 (blanking enabled = RF disabled while waiting for trigger).   |
| 22.11.2016 | 0.4.93  | APGEN3000: Improved automatic ALC ON/HOLD selection for AM increases modulation bandwidth.   |
| 26.10.2016 | 0.4.92  | Added SOUR:ROSC:TUNE setting to scope of default/saved settings.<br>Added aliases for reference tuning command: SOUR:ROSC:TUNE = SOUR:ROSC:TUNing.   |
| 26.09.2016 | 0.4.80  | Fixed communication time out when starting a sweep with ALC in hold mode (0.4.79 issue).<br>Dual APSYN420 with option FS: simultaneous dual channel sweeps support.<br>All dual APSYN420: individual power up defaults and stored settings per channel.  |
| 15.09.2016 | 0.4.79  | Changed priority of conflicting combined commands (like FREQ POW:MODE FIX;FREQ POW:MODE SWE). Last command has highest priority now.<br>Option FS: Simultaneous multi channel sweeps support.  |
| 20.07.2016 | 0.4.78  | Option FS: Extended pulse trains support (bitstream).<br>All APSINxxG/x010: Improved power leveling in pulse modulation below 10 MHz.<br>APGEN3000: Minor changes.   |
| 11.07.2016 | 0.4.77  | VXI-11 link indication by remote LED.<br>Option FS: fixed reference lock detect.<br>Option FS: fixed missing first point trigger output.<br>Option FS: fixed pulse trains (bitstream).<br>Improved internal pulse modulation (no "glitches").  |
| 16.06.2016 | 0.4.76  | Touchpanel (option TP) improvements.<br>Fixed missing front panel (HC) update when changing AM depth.<br>Fixed missing front panel (HC) update when stopping sweeps.   |
| 24.05.2016 | 0.4.75  | Fixed flatness correction. Flatness correction had no effect since 0.4.66.<br>Fixed swept points order.  |

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| 13.05.2016 | 0.4.74 | Option FS: RF blanking while waiting for trigger can be disabled.<br>No changes for devices without option FS.                                |
| 20.04.2016 | 0.4.73 | APSYN420: Reduced output DC offset fluctuation when enabling RF.<br>Reduced sweep start latency for combined frequency and power list sweeps. |
| 18.04.2016 | 0.4.72 | Option FS: Initial firmware for option FS.<br>No changes for devices without option FS.   |
| 14.04.2016 | 0.4.71 | Option FS: Changes to firmware for option FS.<br>No changes for devices without option FS.  |
| 06.04.2016 | 0.4.70 | Option FS: Preliminary firmware for option FS.<br>APSYNxxG, APSYN420: Fixed invalid output after sweep.                                       |
| 17.03.2016 | 0.4.69 | APSYNxxG: Improved output blanking support (RF disabled during transients).   |