1 V3.3 (30-Dec-2021)

- Updated logo, disclaimer, copyright.

2 V3.2 (17-Jan-2017)

- Features (p.1):
  - Added Ultra-Thin WLCSP34 package (nominal thickness: 0.334 mm).
- Section 3 (Ordering Information), p.7:
  - Added part number for Ultra-Thin WLCSP34: DA14581-00000VRA.
- Section 7.4 (Package Outlines), p.152:
  - Added Figure 14 (Ultra-Thin WLCSP34 Package Outline).

3 V3.1 (10-Nov-2016)

- DA14581 qualified to Bluetooth Specification 4.2. Datasheet title and document content changed accordingly.
- Bluetooth Smart changed to Bluetooth low energy as per Bluetooth SIG directive.
- Section 4.7.2 (Wake-Up Timer), p.13:
  - Added minimum pulse width of 2 sleep clock cycles for wake-up via GPIO.
- Table 126 (SPI_CTRL_REG), p.93: Definition of SPI_MINT corrected:
  - ICU changed to Interrupt Controller.
  - Note on shared interrupts (SPI_INT and AD_INT) removed: not applicable.
- Figure 13 (WLCSP34 Package Outline Drawing), p.151:
  - Drawing updated to Rev F. Reason: Min and Max values added for dimensions D and E (body size).
- Back page:
  - Definition for datasheet status Final clarified.
  - Disclaimer updated with trademarks statement.
  - RoHS statement updated.

4 V3.0 (18-Dec-2015)

- Product status changed to Production, datasheet status changed to Final.
- Table 1 (Pin Description), p.6:
  - Programming voltage on pin VPP corrected to 6.7 V ± 0.1 V.
- Ordering information moved to new section 3 (p.7):
  - Table 2: Ordering information (samples).
  - Table 3: Ordering information (production).
  - Part number legend added.
- Figure 12 (p.171): Package outline drawing of QFN40 updated.
- Table 221 (P01_PADPWR_CTRL_REG), p.129:
  - Notes 3 and 4 updated with limited output current capability in Boost mode.
- Table 222 (P2_PADPWR_CTRL_REG), p.129:
  - Note 5 updated with limited output current capability in Boost mode.
- Table 223 (P3_PADPWR_CTRL_REG), p.130:
  - Note 6 updated with limited output current capability in Boost mode.

- Table 266 (Digital Input/Output: DC characteristics), p.144:
  - Note 17 added for V_{OH}(VBAT3V): In Boost mode the output source current is limited to Iout = -250 uA.
  - Note 18 added for V_{OL}(VBAT3V): In Boost mode the output sink current is limited to Iout = 250 uA.
- Template updated to new branding guidelines.
- Back page: Contact information updated.

5 V2.0 (January 29, 2015)

- Product status changed to Qualification, datasheet status changed to Preliminary.
- General description partly rephrased.
- Features (p.1):
  - Removed port P3: not supported.
  - Corrected nominal package size for WLCSP34 package.
- Ordering information (p.5):
  - Reformatted into separate tables for samples and production orders.
  - Table 1 (samples), p.5:
    - Discontinued: DA14581-00UN6 (WLCSP34 samples in waffle pack).
    - Replacement: DA14581-00UNA (WLCSP34 samples on mini-reel).
- Table 3 (Pin description), p.6:
  - P2_0 to P2_9: Note corrected to remove QFN48 package.
  - P3_0 to P3_7: Not supported.
- Section 3.6.7 (Input/output ports), p.12:
  - Removed port P3: not supported.
- Section 3.7.1 (p.12):
  - Section title changed to ‘General purpose timers’.
  - Timer 0: formulas for output frequency, duty cycle and interrupt time reformatted.
  - Timer 2:
    - Input clock frequency: corrected from 16 MHz (fixed) to sys_clk/N with N = 1, 2, 4 or 8 and sys_clk = 16 MHz or 32 kHz. Formula reformatted.
    - Output frequency: formula reformatted.
- Section 3.9 (Power management), p.14:
  - Feature ‘On/off control’ removed. Not supported for normal operation.
  - Minimum voltage for Buck mode operation changed from 2.2 V to 2.35 V.
  - Figures 8 and 10 updated accordingly.
- Order of sections ‘Registers’ and ‘Specifications’ reversed.
- Section 4 (Registers), p.16:
  - Note added that registers related to port P3 are not supported.
  - Table 32 (CLK_AMBA_REG), p.30: descriptions of fields PCLK_DIV and HCLK_DIV rephrased.
  - Tables 240, 241 and 242 (Px_PADPWR_CTRL_REG), p.133: Note added:
    “For buck mode the output must be powered by the 3V rail, for boost mode by the 1V rail.”
- Section 5 (Specifications), p.141:
  - Definition of MIN/MAX specifications rephrased.
  - Default measurement conditions added.

- Table 281 (Recommended operating conditions), p.144:
  - V_{BAT}(VBAT3V)NO_OTP: parameter removed. V_{BAT}(VBAT3V) also applies when OTP is not programmed.
- Table 282 (DC characteristics), p.144 and p.145:
  - Max value added for: I_{BAT}(DP_SLP)_BOOST_8kB, I_{BAT}(EXT_SLP)_BOOST_50kB, I_{BAT}(ACT_RX)_BOOST, I_{BAT}(ACT_TX)_BOOST, I_{BAT}(DP_SLP)_BUCK_8kB, I_{BAT}(EXT_SLP)_BUCK_50kB, I_{BAT}(ACT_RX)_BUCK, I_{BAT}(ACT_TX)_BUCK.
  - Supply voltage condition removed for: I_{BAT}(DP_SLP)_BUCK_1kB, I_{BAT}(DP_SLP)_BUCK_2kB, I_{BAT}(DP_SLP)_BUCK_8kB, I_{BAT}(ACT_RX)_BOOST, I_{BAT}(ACT_TX)_BOOST, I_{BAT}(ACT_RX)_BUCK, I_{BAT}(ACT_TX)_BUCK. Default measurement conditions apply.
  - Oscillator condition (XTAL32K) added for: I_{BAT}(DP_SLP)_BOOST_2kB, I_{BAT}(DP_SLP)_BOOST_8kB, I_{BAT}(DP_SLP)_BUCK_2kB, I_{BAT}(DP_SLP)_BUCK_8kB.
- Table 295 (Radio: AC characteristics), p.150: Note 15 (reference to AN-B-017) removed.

6 V1.0 (September 30, 2014)

- Product status: Development, datasheet status: Target.
- Initial version, derived from DA14580.
- Changes with respect to DA14580:
  - Reduced boot time of less than 30 ms using new BootROM sequence.
  - Supports up to 8 Bluetooth Smart connections.
  - Packages: WLCSP34 and QFN40.

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