

Testo SE & Co. KGaA

Celsiusstraße 2 • 79822 Titisee-Neustadt • Germany

Titisee-Neustadt, September 15, 2026

To whom it may concern

Subject: Preliminary Submission for TCB Review – Class II Permissive Change (C2PC) – FCC / IC ISED Certification

Status: Preliminary regulatory submission – subject to TCB review and closure of identified review items

Original Grant: FCC ID: Z64-CC33DBMOD | IC/ISED: 451I-CC33DBMOD

Applicant / Grantee: Testo SE & Co. KGaA

End Product (Host): CON007 – Testo WLAN / BLE 5.x Companion Module (P/N 0460 2710 01)

Certified Radio Module: TI CC3351MOD – FCC ID: Z64-CC33DBMOD / IC/ISED: 451I-CC33DBMOD

1 Introduction

Testo SE & Co. KGaA is the Grantee of record for FCC ID Z64-CC33DBMOD (Change of ID previously filed and approved, FCC Form 731). As Grantee, Testo submits this letter to initiate preliminary TCB review of the proposed Class II Permissive Change under 47 CFR §2.1043(b)(1). The proposed changes are limited to the host integration and antenna configuration and are not intended to degrade the RF performance of the certified module or change its operating frequency, modulation type, conducted output power, or emission designator.

The CC3351MOD is a pre-certified modular transmitter. Its integration into the Testo CON007 host PCB (P/N 0460 2710 01, on-board chip antenna variant) does not alter the fundamental RF characteristics, output power, or frequency of operation of the certified module. This letter documents all changes made relative to the original FCC/IC-certified configuration and confirms continued compliance in accordance with 47 CFR Part 15, RSS-Gen, RSS-102, and RSS-247. The technical information in this preliminary submission is provided to enable the TCB to begin its assessment. Remaining items identified in Annex A are submitted for confirmation or closure during the certification review process. This preliminary submission does not replace the final certification filing or the TCB's formal determination. Testo will provide supplementary information, revised test documentation or additional measurements if requested by the TCB.

2 Certification Reference

IC/ISED Grant Number	451I-CC33DBMOD
FCC ID (cross-reference)	Z64-CC33DBMOD
Module Designation	CC3351MOD (also CC3350MOD family)
Module Manufacturer	Texas Instruments Incorporated
Module Datasheet	CC335xMOD SWRS353A, April 2025 / rev. February 2026
Radio Standard (WLAN)	IEEE 802.11 a/b/g/n/ax (WLAN 4/5/6), 2.4 GHz and 5 GHz
Radio Standard (BLE)	Bluetooth Low Energy 5.4 (CC3351MOD)
Max. RF Output Power (WLAN)	+18.3 dBm (2.4 GHz), integrated PA
Max. RF Output Power (BLE)	+17.8 dBm

Module Package	65-pin LGA, 11 mm × 11 mm, 0.65 mm pitch
Module Supplier	Texas Instruments Incorporated

3 Host Device Description (CON007)

The CON007 is a Testo-proprietary wireless companion sub-module implemented as an M.2 E-Key form-factor card (card-edge connector). It provides WLAN 6 (dual-band 2.4 / 5 GHz) and Bluetooth Low Energy 5.x connectivity to Testo measurement instruments (e.g., product family EBP001). The module is not a standalone end-user device; it is a sub-assembly integrated into Testo's final products. There are currently no released alternative CON007 hardware or antenna variants. The tested device therefore represents the only currently released configuration, Testo P/N 0460 2710 01. The released configuration and component population can be demonstrated by the applicable SAP bill of material upon request.

Key host-level characteristics:

Host Product Name	CON007 – Testo WLAN 6 / BLE Companion Module
Testo Orderable P/N (chip ant.)	0460 2710 01
Physical Form Factor	M.2 E-Key card-edge connector (custom Testo pin-out)
Host Interface to System	4-bit SDIO (WLAN), UART 4-wire (BLE HCI)
I/O Voltage Level	1.8 V logic
Supply Voltage	3.0 V – 3.6 V (nominal 3.3 V), >500 mA capable
Operating Temperature	–20°C to +85°C
PCB Technology	4-layer PCB, SMT production only
PCB Dimensions	≤22 mm × 30 mm, thickness ≤4 mm
Antenna (on-board)	Würth WE-MCA, P/N 7488922455 (chip antenna)

4 Description of Changes Relative to Original Certified Configuration

The following describes all changes introduced by the integration of the CC3351MOD into the CON007 host board compared to the reference configuration described in the original FCC/IC certification documentation (FCC ID: Z64-CC33DBMOD; IC: 451I-CC33DBMOD). Where the original FCC test report specifies a particular host setup, reference antenna, or evaluation board, those details are referenced explicitly.

4.1 Antenna Configuration

The original ISED certification (IC: 451I-CC33DBMOD, ISED certificate SN25I0237, issued 18 July 2025 by Sporton International) was conducted with a chip-type reference antenna with maximum gains of 3.0 dBi (2.4 GHz) and 4.0 dBi (5 GHz). The CON007 C2PC integration uses a Würth Elektronik WE-MCA surface-mount chip antenna (P/N 7488922455). The antenna comparison is provided below:

- Antenna type – original (cert. SN25I0237): Chip antenna • 2.4 GHz max. gain – original: 3.0 dBi (per ISED certificate SN25I0237, 2400–2483.5 MHz) • 5 GHz max. gain – original: 4.0 dBi (per ISED certificate SN25I0237, 5150–5850 MHz) • Antenna type – C2PC: Würth Elektronik WE-MCA, P/N 7488922455 – surface-mount PCB chip antenna, dual-band 2.4 / 5 GHz, soldered directly to the CON007 PCB adjacent to the CC3351MOD LGA package • 2.4 GHz peak gain – C2PC (Würth WE-MCA P/N 7488922455): 3.0 dBi typ. (2400–2500 MHz, per Würth datasheet Rev. 003.000) • 5 GHz peak gain – C2PC (Würth WE-MCA P/N 7488922455): 3.3 dBi typ. (5000–6000 MHz, per Würth datasheet Rev. 003.000) • RF trace / matching: No changes to the RF matching network or PA circuitry within the CC3351MOD. The antenna feed point is connected to the module's RF port via a short, impedance-controlled 50 Ω microstrip trace. No additional matching components are placed between the module antenna port and the chip antenna. • Antenna location: Placed at the edge of the CON007 PCB, clear of metallic structures and the LGA package, per Würth WE-MCA placement guidelines.

- Trace reference design compliance: The CON007 PCB layout follows the CC3351MOD trace reference design as required by ISED certificate SN25I0237 Approval Condition: “This module can only be used when installed in a host device that follows the required instructions for using a trace reference design.” SDIO data traces are maintained below 100 mm with 68 Ω series termination resistors; the antenna feed trace is a 50 Ω impedance-controlled microstrip; no additional components are placed in the RF path between the module antenna port and the chip antenna.

The Würth WE-MCA datasheet specifies a typical peak gain of 3.0 dBi for 2400–2500 MHz and 3.3 dBi for 5000–6000 MHz. Compared with the original certified antenna gains of 3.0 dBi at 2.4 GHz and 4.0 dBi at 5 GHz (ISED certificate SN25I0237), the listed antenna gains are equal at 2.4 GHz and 0.7 dB lower at 5 GHz. This supports that the maximum EIRP of the CON007 C2PC configuration does not exceed the original certified EIRP, subject to confirmation with the final antenna-in-host measurement/MPE evaluation. The applicable MPE / Maximum Permissible Exposure calculation is provided as a technical annex to this submission.

4.2 Host Interface (SDIO / UART)

The CC3351MOD is connected to the CON007 host PCB via:

- WLAN: 4-bit SDIO interface. SDIO trace length is maintained at <100 mm as required by EMC and signal-integrity constraints. Series resistors of approximately 68 Ω are placed on each SDIO data line for EMC protection.
- BLE (HCI): 4-wire UART (TXD, RXD, RTS, CTS) at 1.8 V logic levels. Supported baud rates: 9600 bps, 115200 bps, and 3 Mbit/s.

These interface connections are entirely within the host PCB and do not affect the RF circuitry or certified radio performance of the CC3351MOD.

4.3 Power Supply

The CC3351MOD is powered from a 3.3 V supply rail (range: 3.0 V to 3.6 V) provided by the host system. An on-module 1.8 V LDO (integrated on the CON007 PCB) provides the 1.8 V rail. Peak current demand is maintained below 500 mA (WLAN PA peak $\leq$ 290 mA from 3.3 V rail; BLE core $\approx$ 92 mA typ. from 1.8 V rail), consistent with the module’s certified operating conditions.

4.4 No Changes to RF Circuitry

The following aspects of the original certified design are unchanged:

- Operating frequencies and channel plans (2.4 GHz: 2400–2484 MHz; 5 GHz: 5150–5850 MHz)
- Maximum RF output power levels ($\leq$ 18.3 dBm for WLAN, $\leq$ 17.8 dBm for BLE)
- RF filtering, matching network, and PA circuitry (integrated within the certified CC3351MOD)
- Modulation type and emission designator
- Firmware and software radio parameters (no modification to CC3351MOD firmware)
- Co-existence mechanisms (internal WLAN / BLE coexistence via shared RF chain, optional 3-wire PTA for external coexistence)

4.5 I²S Audio Interface (Not Implemented)

The I²S audio interface pins of the CC3351MOD are not connected (NC) on the CON007 PCB, as the CC3351 silicon does not support an I²S interface. The corresponding card-edge connector pins are physically unconnected on the module PCBA. This change has no RF impact.

5 Technical Comparison: Original FCC/IC-Certified Configuration vs. CON007 C2PC Integration

Parameter	Original FCC-Certified Config. (Z64-CC33DBMOD)	CON007 Integration
Radio Module	CC3351MOD (TI)	CC3351MOD (TI) – identical firmware
IC/ISED Grant	451I-CC33DBMOD	451I-CC33DBMOD (unchanged)
WLAN Bands	2.4 GHz + 5 GHz	2.4 GHz + 5 GHz (unchanged)
BLE Version	BLE 5.4	BLE 5.4 (unchanged)
Max. TX Power (WLAN)	+18.3 dBm	+18.3 dBm (unchanged)
Max. TX Power (BLE)	+17.8 dBm	+17.8 dBm (unchanged)
Host Interface	SDIO / SPI / UART (per TI ref. eval. board)	SDIO (WLAN) + UART (BLE)
Antenna (primary)	Chip antenna; 3.0 dBi (2.4 GHz) / 4.0 dBi (5 GHz) (ISED cert. SN25I0237)	Würth WE-MCA 7488922455 (chip)
Supply Voltage	3.0–3.6 V	3.0–3.6 V (unchanged)
Firmware	CC3351MOD factory FW	CC3351MOD factory FW (unchanged)
RF Matching Network	Per TI ref. design (internal to CC3351MOD)	Unchanged – internal to CC3351MOD
RF Trace / PCB Routing	Per TI ref. eval. board	SDIO traces ≤10 cm, 68 Ω series; antenna feed: 50 Ω microstrip; no change to module RF path
Host PCB / Eval. Board	TI reference evaluation board	Testo CON007 M.2 carrier PCB, 4-layer, SMT
Power Supply Circuitry	TI ref. board supply (3.0–3.6 V)	3.0–3.6 V ext. supply; on-board 1.8 V LDO; no change to module supply conditions

6 Compliance Statement

Testo SE & Co. KGaA confirms that:

- The CC3351MOD radio module retains its original IC/ISED certification (451I-CC33DBMOD). No hardware modifications have been made to the certified module itself.
- The CON007 host board integration constitutes a Class II Permissive Change as defined under 47 CFR §2.1043(b)(1) (FCC) and RSS-Gen (ISED), as the changes are limited to the host/antenna configuration and do not increase the RF output power, alter the frequency plan, or change the fundamental emission characteristics.
- The maximum conducted and EIRP output power does not exceed the limits of the original grant. The original certified antenna gain is 3.0 dBi (2.4 GHz) and 4.0 dBi (5 GHz) per ISED certificate SN25I0237. The Würth WE-MCA (P/N 7488922455) datasheet specifies a typical peak gain of 3.0 dBi at 2.4 GHz and 3.3 dBi at 5 GHz; therefore, the listed values are equal at 2.4 GHz and 0.7 dB lower at 5 GHz. The CON007 PCB layout follows the CC3351MOD trace reference design as required by the Approval Conditions of certificate SN25I0237.
- The host device (CON007) complies with the applicable regulatory requirements, including 47 CFR Part 15 Subpart B (FCC unintentional radiator limits), RSS-102 (MPE/SAR), and RSS-247 (WLAN and Bluetooth) (ISED).
- The CON007 will carry the required IC/ISED label (or electronic labeling) referencing grant 451I-CC33DBMOD in the final end product documentation and, where applicable, on the product itself.
- Basis for waiver of full radiated emissions retesting: Testo asserts that complete radiated emissions retesting is not required for this C2PC on the following grounds: (1) The CC3351MOD (FCC ID: Z64-

Annex A – Items for TCB Review and Closure

The following items are provided for confirmation or closure during the TCB review. They are not intended to prevent initiation of the preliminary certification assessment. Testo will address the TCB's comments and provide any required supplementary evidence before final filing or grant decision.

TCB assessment requested

- Confirm whether the BLE operating mode qualifies for SAR test reduction based on the applicable ISED procedure, including maximum BLE conducted power and tune-up tolerance, or identify any supplementary BLE SAR measurements required. Confirm whether simultaneous WLAN/BLE transmission is possible and, if supported, the required combined RF-exposure assessment.
- Confirm that the intended host-device use case is appropriately assessed against the 4 W/kg SAR10g limb limit used for the 5 mm and 10 mm body-worn pre-compliance evaluation.

This document is submitted to initiate preliminary FCC/ISED and TCB review. Final regulatory filing, formal sign-off and any required grant decision remain subject to completion of the TCB review and closure of the applicable items listed above.

- FCC grant of equipment authorization – FCC ID: Z64-CC33DBMOD (original, TI) • IC/ISED grant certificate 451I-CC33DBMOD (original, TI) • Original FCC test report for Z64-CC33DBMOD (to be obtained from TI or FCC database) • Würth WE-MCA P/N 7488922455 antenna datasheet with gain data at 2.4 GHz and 5 GHz

8 Contact

Company	Testo SE & Co. KGaA
Address	Celsiusstraße 2, 79822 Titisee-Neustadt, Germany
Responsible Engineer	Weinrich, Matthias
E-Mail	maweinrich@testo.de
Date of Submission	September 15, 2026

Signature:



Testo SE & Co. KGaA
Celsiusstraße 2
79822 Titisee-Neustadt

Weinrich, Matthias

Hardware Architect, CON007

Testo SE & Co. KGaA

CC33DBMOD) is a fully certified modular transmitter; its internal RF circuitry, PA, matching network, and firmware remain entirely unchanged. (2) The replacement antenna (Würth WE-MCA, P/N 7488922455) has a maximum gain that does not exceed the gain of the original FCC-certified reference antenna in the 2.4 GHz and 5 GHz bands (see Section 4.1); therefore, the maximum EIRP does not exceed that of the original certified configuration. (3) The host PCB integration follows the CC3351MOD hardware design guide; SDIO traces are maintained below 100 mm with 68 Ω series termination; no additional oscillators or unintentional radiators are introduced in the RF proximity of the module. Notwithstanding the above, Testo acknowledges that the TCB retains authority to require supplemental testing. Testo is prepared to provide test samples and arrange for additional measurements upon request.

6.1 RF Exposure / SAR Assessment

A SAR pre-compliance evaluation was performed by Verkotan Oy for the CON007 device under document ID Pre_SAR report_CON007_ID7638_19082026, dated 19 August 2026. The evaluated device corresponds to the only currently released CON007 configuration, Testo P/N 0460 2710 01, with the Würth WE-MCA chip antenna P/N 7488922455. No alternative hardware or antenna variant is currently released; the released configuration can be verified by the applicable SAP bill of material upon request.

The evaluation covered body-worn exposure conditions at 5 mm and 10 mm separation, measured from the CON007 PCB surface. The 5 mm condition is retained as the conservative worst-case condition for this application, while the 10 mm result is provided as an additional evaluated condition. The results are not presented as a selective replacement of the 5 mm assessment.

The worst-case reported SAR_{10g} result in the available pre-compliance data was 1.909 W/kg at 5 mm separation for 5 GHz WLAN (802.11a, 5200 MHz, maximum power 18.3 dBm, Left 5 mm position). At 10 mm separation, the reported SAR_{10g} result was 0.912 W/kg. The highest reported 2.4 GHz WLAN result was 0.333 W/kg. These values are submitted as preliminary evidence for TCB review.

The values above are based on the Verkotan pre-compliance report. For the intended limb/body-worn exposure condition, the applicability of the 4 W/kg SAR_{10g} limb limit used for the evaluation shall be confirmed by the TCB and reflected in the final RF-exposure filing. The 5 mm value is used as the conservative worst-case value; the 10 mm value is included as supplementary evidence.

The Verkotan report does not contain separate BLE SAR results. This is therefore identified as a review item rather than a final compliance conclusion. Before final FCC/ISED filing, the testing laboratory and/or TCB shall confirm and document an applicable BLE SAR test reduction, including maximum BLE conducted power and tune-up tolerance, or perform a supplementary BLE SAR evaluation. The assessment shall also document whether simultaneous WLAN/BLE transmission is possible and whether combined RF exposure must be evaluated.

7 Supporting Documentation

The following documents are available upon request and may be submitted as part of the formal application filing:

- CC335xMOD Datasheet (SWRS353A, TI, April 2025 / rev. February 2026)
- CON007 Datasheet Rev. 2 (Testo internal, this project)
- CON007 Hardware Requirements Solution (Rev. 0.2, approved 2024-11-21)
- CON007 Target Specification (Rev. 0.1, approved 2024-04-18)
- CON007 PCB schematic and layout (available under NDA)
- Antenna datasheet – Würth WE-MCA P/N 7488922455, Rev. 003.000, dated 2026-03-16 (peak gain: 3.0 dBi typ. at 2400–2500 MHz; 3.3 dBi typ. at 5000–6000 MHz)
- Verkotan SAR pre-compliance report – Pre_SAR report_CON007_ID7638_19082026, dated 19 August 2026
- MPE / link budget calculation (available as technical annex)