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Continental
T26 Telematics
Control Unit

Continental T26 Telematics Control Unit User Manual

Contents

Continental

Continental T26 Telematics Control Unit

Product Usage Instructions

- The Telematics Control Unit (TCU) described herein is a vehicle-mounted device designed and manufactured by Continental for exclusive use by premium automotive OEMs.

- The product name designated by the customer is Subaru T26.
- This document aims to describe the operating principles of the device and provide installation instructions to ensure safe use by OEMs.
- The Subaru T26NAM is a proprietary Device Communication Module (DCM) designed and manufactured by Continental Automotive.
- It includes an integrated Network Access Device (NAD), also designed and produced by Continental.
- The TCU facilitates vehicle networking and information exchange, enabling various telematics functions within the vehicle.
- The device supports communication over air interfaces, ensuring seamless connectivity within the vehicle network.
- The TCU integrates with the vehicle's electrical subsystems to enable efficient data transmission and communication.
- Detailed information on software security measures implemented within the device.
- Additional security protocols and features to safeguard data and communication channels.

INTRODUCTION

The Telematics Control Unit (TCU) described herein is a vehicle-mounted Telematics control unit designed and manufactured by Continental for exclusive use by a premium automotive OEM. The product name has been designated by the customer as Subaru T26.

PURPOSE AND SCOPE

- This document aims to describe the device's operating principles and provide installation instructions to OEM to ensurethe safe use of the device.

PRODUCT DESCRIPTION

- Subaru T26NAM is a proprietary DCM designed and manufactured by Continental Automotive. The DCM includes an integrated Network Access Device (NAD) that is also designed and produced by Continental.
- The DCM will be installed as a vehicle-mounted wireless device into Subaru vehicles during the OEM's factory assembly process and will not be accessible without the use of special tools.

The DCM functionalities are accomplished by 2G/3G/4G technologies (Voice & Data) and defined service features. The DCM comprises the following subsystem components.

- Power supply
- Vehicle micro-controller (VuC)
- Network Access Device (NAD)
- Vehicle interface/communications
- Battery
- Integrated WiFi circuit

TCU FUNCTIONALITY

The Subaru T26 TCU provides 4G advanced connectivity to the vehicle and interfaces to the vehicle head unit Ethernet bus. The TCU is designed to

- initiate automatic emergency calls if an automatic emergency call trigger is received;
- allow initiation of a Manual Emergency Call by a car occupant;
- allow manual initiation of Roadside Assistance or Information Calls by a car occupant;
- establish Data Packet Connection with telematics service;
- establish data Packet Connection to support the internet connection of Head Units.
- establish Data Packet Connection to support the internet connection of devices through Wi-Fi.

PRODUCT KEY FEATURES

AIR INTERFACE SUPPORT

- 3GPP Rel. 10
- LTE FDD CAT4 (up to 50-Mbps UL/150-Mbps DL)
- UMTS: HSUPA CAT 6 (up to 5.76-Mbps), HSPA CAT14 (up to 21-Mbps)
- GSM: EGPRS Rel-9 236.5kbps (MSC33)
- VoLTE – HD Voice
- Embedded Qualcomm Gen8C GNSS
- GPS/GLONASS/Galileo/BeiDou Receiver
- SBAS supported: EGNOS/MSAS/QZSS/WAAS/GAGAN
- Able to track ~40 channels simultaneously
- 10 Hz update rate (under development)
- Position Accuracy of < 6m @ 95% (open sky)
- Acquisition Sensitivity of -149 dBm
- Tracking Sensitivity of -163 dBm
- TTFF Cold/Warm/Hot (open sky, mean) = 29 sec / 27 sec / 1 sec

NAD Model Name	Region	FDD and TDD LTE	UMTS	GSM
FE3NA0031	**NA**	2, 4, 5, 7, 12, 13	2, 4, 5	2, 5

Frequency Bands		Maximum Power	Modulation
GSM:	EGSM850, Class 4	< (+32.5dBm ± 1dB)	GMSK, 8PSK
GSM:	EGSM1900, Class 4	<(+29.5dBm ± 1dB)	
UMTS:	WCDMA FDD II, Class 3	<(+23.5dBm ± 1dB)	BPSK, QPSK
UMTS:	WCDMA FDD IV, Class 3	<(+23.5dBm ± 1dB)	
UMTS:	WCDMA FDD V, Class 3	<(+23.5dBm ± 1dB)	
LTE:	FDD B2, Class3	<(+23dBm ± 1dB)	QPSK, 16QAM, 64QAM
LTE:	FDD B4, Class3	<(+23dBm ± 1dB)	
LTE:	FDD B5, Class3	<(+23dBm ± 1dB)	
LTE:	FDD B7, Class3	<(+23dBm ± 1dB)	
LTE:	FDD B12, Class3	<(+23dBm ± 1dB)	
LTE:	FDD B13, Class3	<(+23dBm ± 1dB)	
GNSS:	1559-1610 MHz	(Receiving only)	

ELECTRICAL SUBSYSTEMS

The device comprises these main electrical subsystems

- Power Supply subsystem to support internal required rails and power modes.
- Vehicle Interface:
    - Battery input front end for protection, filtering, and transient conditioning. (Terminals 18 and 34 corresponding to vehicle battery and ground)
    - Cellular Antenna RF Connectors (Primary, DRX0)
    - GPS input and output
    - Ethernet 100 Base T
    - LIN Input
    - Wake up in/out
    - Microphone (MIC+/-) input

- Speaker (SPK+/-) output
- Vehicle microcontroller
- Embedded FE3NA0031 module (NAD = Network Access Device). Core A7 (SoC) on board.
- NAD interface includes module IO, buffering HSM, and SIM IC support
- 100BASET1 interface
- The audio subsystem includes analog microphone input and speaker output
- Digital audio interfaces including CODEC and alternate routing for audio to head unit
- Hands-Free processing in SoC for emergency phone calls

SOFTWARE SECURITY DESCRIPTION

SECTION IV B:

Continental Radio is configured to act as a master by default, so this section is not applicable.

1. Continental WiFi device is configured to work up to channel 11.
2. Continental WiFi device is configured to work using frequencies up to U-NII-1
3. Continental WiFi device does not support peer-to-peer communication

SECTION IV C

- Continental WiFi device band and power configurations are compliant operations in the U.S. by default.
- Continental implementation scans MNC and MCC in periods within one hour and receives immediate updates from the carrier to determine which radio configuration will be set accordingly.
- If network capabilities cannot be determined, the radio stays off. Continental WiFi device is configured to don't use extended frequencies.

FCC STATEMENT

REGULATORY COMPLIANCE NOTES
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, according to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used following the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

- Consult the dealer or an experienced radio/TV technician for help.

Part15.21
Users must be advised that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment

FCC Caution:

- Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.
- This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
- Operations in the 5.15-5.25GHz band are restricted to indoor usage only.

Radiation Exposure Statement:

- This device meets the government's requirements for exposure to radio waves.
- This device is designed and manufactured not to exceed the emission limits for exposure to radio frequency (RF) energy set by the Federal Communications Commission of the U.S.
- Government. The exposure standard for wireless devices employs a unit of measurement known as the Specific Absorption Rate or SAR.
- The SAR limit set by the FCC is 1.6W/kg. *Tests for SAR are conducted using standard operating positions accepted by the FCC with the device transmitting at its highest certified power level in all tested frequency bands.

INDUSTRY OF CANADA:

- This device contains license-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's license-exempt RSS(s). Operation is subject to the following two conditions: (1) This device
- may not cause interference. (2) This device must accept any interference, including interference that may cause undesired operation of the device. FCC/ISED.

Radiation Exposure Statement:

- This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment.
- This equipment should be installed and operated with a minimum distance of 20cm between the radiator & your body. Additional testing and certification for SAR will be required if the distance limitation cannot be met.

FAQ

- **Q:** What is the purpose of the Subaru T26NAM?
- **A:** The Subaru T26NAM is a telematics control unit designed for vehicle networking and information exchange, providing advanced communication capabilities within the vehicle.

Documents / Resources

[Continental T26 Telematics Control Unit](#) [pdf] User Manual
T26SBRNB84G, KR5-T26SBRNB84G, KR5T26SBRNB84G, T26 Telematics Control Unit, T26, Telematics Control Unit, Control Unit, Unit

References

- **[User Manual](#)**