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Comparison of EMMY-W1 modules

To whom it may concern:

We, u-blox AG, hereby declare that there is no difference in the software-defined behaviour of the EMMY-W1 models with FCC IDs:

FCC ID	Product name	Date of original grant
XPYEMMYW161	EMMY-W161 and EMMY-W161-A	08/24/2016
XPYEMMYW163	EMMY-W163 and EMMY-W163-A	09/09/2016
XPYEMMYW165	EMMY-W165 and EMMY-W165-A	10/25/2016

XPYEMMYW16x modules are identical in operation. All required DFS test have been performed and the test reports shall be filed as exhibits.

This document includes an overview on the differences between the EMMY-W1 series modules:

1) Technical differences between the EMMY-W1 series modules

All EMMY-W1 series modules offer Bluetooth, Bluetooth Low Energy, 2.4 GHz WLAN (IEEE 802.11b/g/n compliant), 5 GHz WLAN (IEEE 802.11a/n/ac compliant), and NFC radio technologies. The differences between the product types are in their antenna configurations and in the used band-pass filters.

EMMY-W161 and EMMY-W165 use the same antenna configuration. EMMY-W163 has a separate antenna pin for Bluetooth and BT LE, the WLAN and NFC radio parts are identical to EMMY-W161 and EMMY-W165.

a) Components

Except for the 2.4 GHz band-pass filters (BPF), all other components are identical for all EMMY-W1 product types. The BAW-type BPF on EMMY-W161 has been selected to improve coexistence with LTE for co-located LTE and Wi-Fi/BT antennas. EMMY-W163 and EMMY-W165 share the same PCB. The PCB stack-up of all variants is identical; actually the only differences are in the different layout (footprint) for the BAW filter.

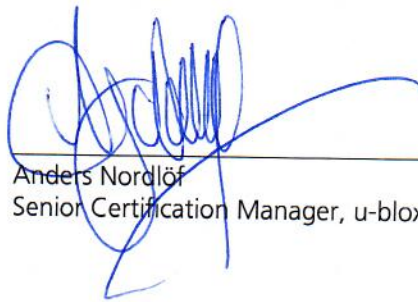
EMMY-W161	EMMY-W163 and EMMY-W165
Bulk acoustic wave filter	Multilayer ceramic band pass filter. Same part for EMMY-W163 and EMMY-W165.

b) Operational mode

All EMMY-W1 series modules operate with the same firmware and host driver. For this reason, there are no differences in the software-defined behaviour of the modules, such as adaptive channel access mechanism or the Dynamic Frequency Selection (DFS) master capability behaviour. For EMMY-W1 the DFS function have been implemented in the 5.25-5.35 GHz band and 5.47-5.725 GHz band for all above mentioned FCC IDs.

Sincerely,

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Job Title and Dept.:

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