BLEDIX001 Antenna Radiation Pattern BLE Module

V0.0
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C.F.: 03160710269 - P.IVA/VAT: IT 00876120254 - Numero iscrizione Registro Pile e
Accumulatori: IT19050P00005354 - Numero iscrizione Registro AEE: IT19050000011380
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1 Acronyms, Glossary, Conventions

Table 1-1 introduces the acronyms used inside the document:

Acronym	Meaning

Table 1-1

Table 1-2 introduces the Glossary of terms used inside the document:

Term	Meaning

Table 1-2

Table 1-3 introduces the conventions list adopted by the document:

Convention	Meaning

Table 1-3

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2 Bibliography and Reference Documents

Table 2-1 shows the list of books, articles and documents cited within the document and the correlation with the code used for their citation:

Citation Data	Code

Table 2-1

3 Document Subject

The document reports the antenna's radiation patter of the Dixell Module BLEDIX001, (FCCID ZG5BLEDIX001 and IC ID 9741A-BLEDIX001).
Specifically are reported:

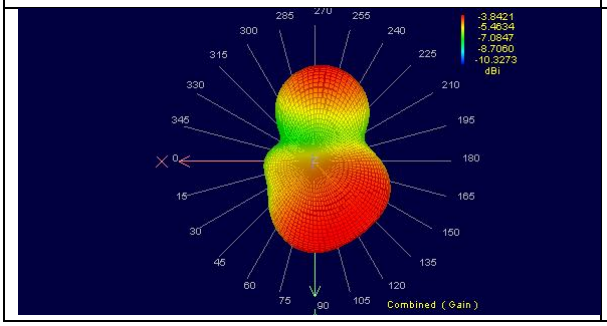
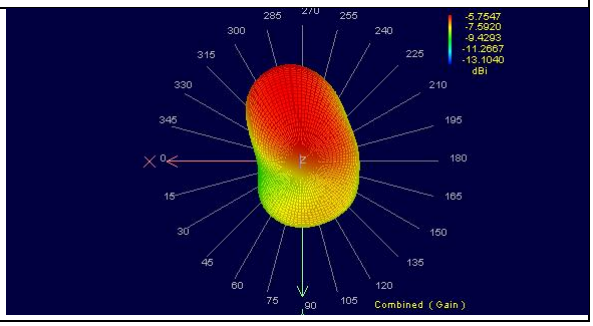
- Radiation pattern of the original version (based on NXP MKW31 in QFN package)
- Radiation pattern of the new alternative version (based on NXP MKW31/MKW41 device in WLCSP package)

4 3D Antenna Radiation Pattern

The 3D Radiation Patterns have been measured using the configuration of the module mounted on its test board (the same one used for FCC and ISED certification).
The radiation patterns have been measured on the three analyzed frequencies:

- 2402MHz
- 2440MHz
- 2480MHz

5 3D Antenna Radiation Pattern: 2402MHz

Original Module based on NXP MKW31 in QFN package	New alternative version based on NXP MKW31/MKW41 device in WLCSP package
	

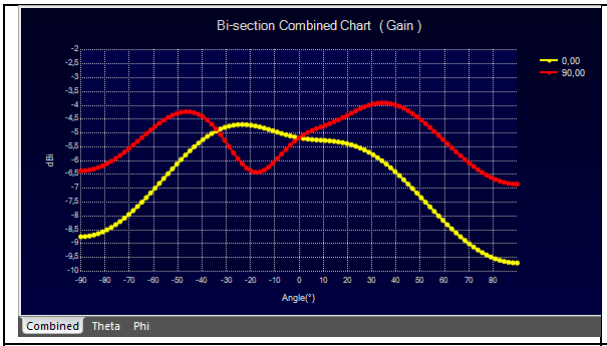
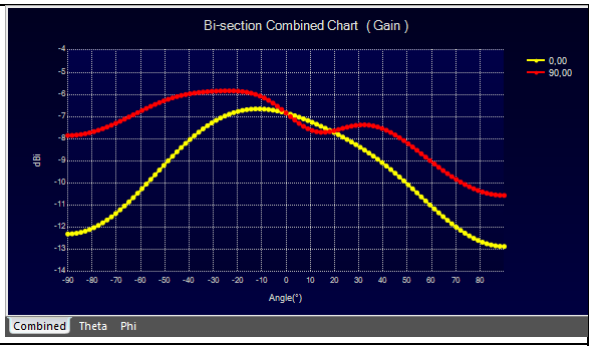
	
Peak Gain: -3.8dBi	Peak Gain: -5.7dBi

Tabella 5-1

6 3D Antenna Radiation Pattern: 2440MHz

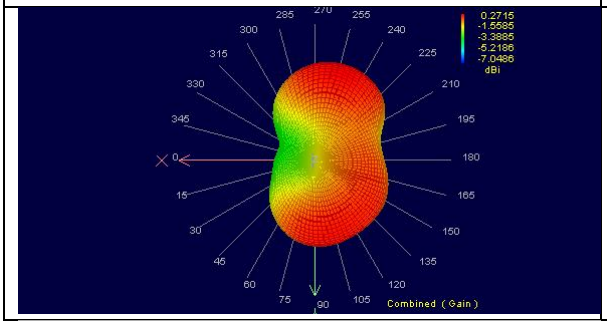
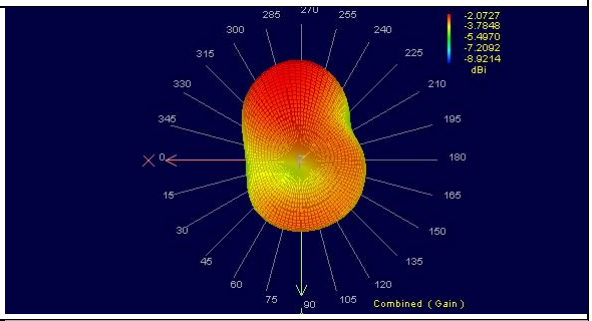
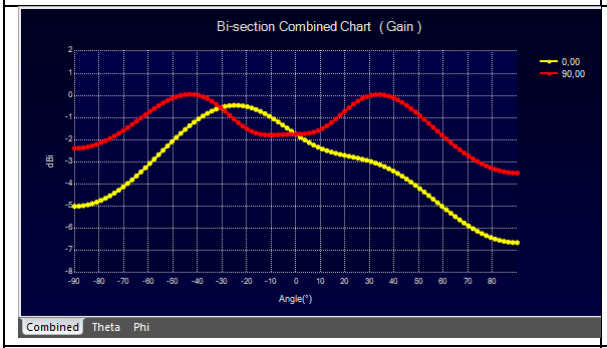
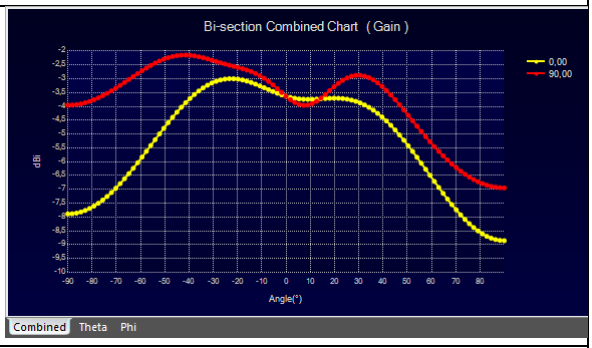
Original Module based on NXP MKW31 in QFN package	New alternative version based on NXP MKW31/MKW41 device in WLCSP package
	
	
Peak Gain: 0.2dBi	Peak Gain: -2dBi

Tabella 6-1

7 3D Antenna Radiation Pattern: 2480MHz

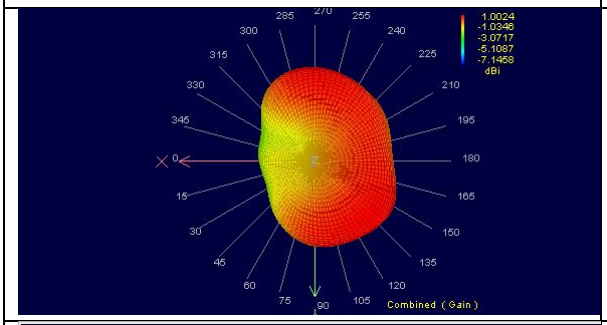
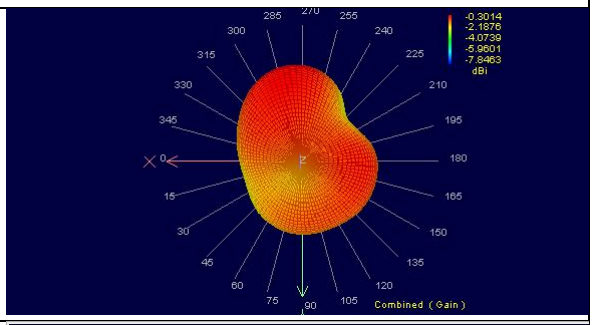
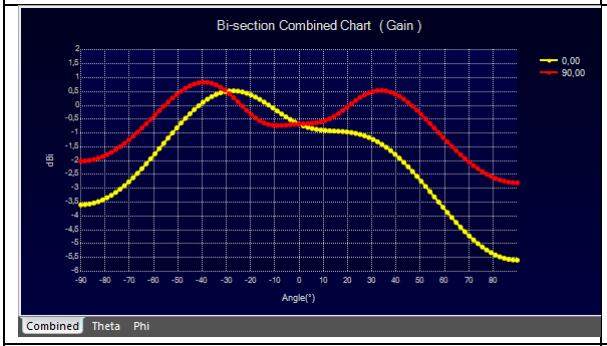
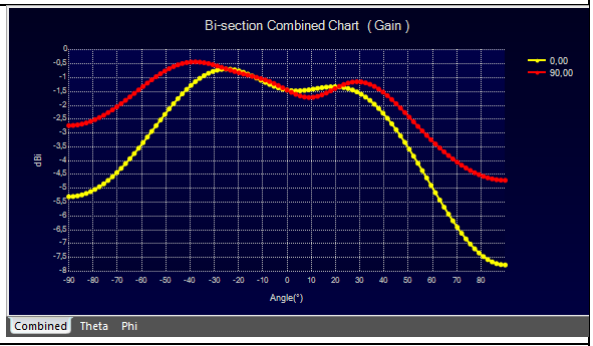
Original Module based on NXP MKW31 in QFN package	New alternative version based on NXP MKW31/MKW41 device in WLCSP package
	
	
Peak Gain: 1dBi	Peak Gain: -0.3dBi

Tabella 7-1

8 Measures of the Gain

The gain extraction has been done considering the same conducted power. In general, the antenna behavior is affected by the dimension of the test board on which the module is mounted. In general, the new alternative version shows a reduced EIRP in relation to the original one that anyway is limited to nearly 2dB in the worst case.