

Test report

Number T251-0714/23

Project file: C20211681

Date: 2023-10-02

Pages: 10

Product: Li-ion Battery Pack

Type reference: BP 18 Li 8,0 HP-ASI

Ratings: 18 Vdc
Protection class: III

Trademark: **FESTOOL**

Applicant: BMZ Poland Sp. z o.o.
Ul. Alberta Einsteina 9, 44-109 Gliwice, Poland

Manufacturer: BMZ Poland Sp. z o.o.
Ul. Alberta Einsteina 9, 44-109 Gliwice, Poland

Place of manufacture: BMZ Poland Sp. z o.o.
Ul. Alberta Einsteina 9, 44-109 Gliwice, Poland

Summary of testing

Testing method: Antenna pattern measurements

Testing location: SIQ Ljubljana
Mašera-Spasičeva ulica 10, SI-1000 Ljubljana, Slovenia

Remarks: Date of receipt of test items: 2022-03-17
Number of items tested: 1
Date of performance of tests: 2023-06-19
The test results presented in this report relate only to the items tested.
The test items were tested in the condition as received.
The product complies with the requirements of the testing methods.

Tested by: Luka Cvajnar

Approved by: Marjan Mak



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1 GENERAL

History sheet			
Date	Report No.	Change	Revision
2023-10-02	T251-0714/23	Initial Test Report issued.	--

Environmental conditions:

Ambient temperature: 15 °C to 35 °C

Relative humidity: 30 % to 60 %

Atmospheric pressure: 860 mbar to 1060 mbar

1.1 Equipment under test

Li-ion Battery Pack

Type: BP 18 Li8,0 HP-ASI

Tested was antenna pattern of the sample below.



Picture of test sample – BLE Antenna



Copy of marking plate

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.



Import UK:
Festool UK Ltd
1 Anglo Saxon Way
Bury St Edmunds
IP30 9XH GB

BP 18 Li 8,0 HP-ASI **FESTOOL**

18 V	T-Nr. 10262545	5INR22/71-2
144 Wh	8,0 Ah	Li-Ion S-Nr. 0002001x

www.festool.com
Festool GmbH · Wertstr. 20
73240 Wendlingen · Germany
Made in Poland





CAUTION Do not burn, crush, damage, disassemble battery pack. For use only with FESTOOL charger **TCL, SCA**. Battery must be recycled or disposed of properly.

ATTENTION Ne pas brûler, écraser, endommager, démonter batterie. À utiliser seulement avec le chargeur FESTOOL **TCL, SCA**. La batterie doit être recyclée ou jetée de façon appropriée.

PRECAUCIÓN No quemar, aplastar, dañar, desmontar batería. Para uso solamente con el cargador FESTOOL **TCL, SCA**. La batería debe ser reciclada o dispuesta de forma adecuada.



MET
E115817
Electrical Safety

FCC ID: 2BA2R-10262545
IC: 30375-10262545

Product & Service Questions?
Call 888-337-8600

1.2 Antenna pattern measurement

1.2.1 Test procedure

The radiation pattern for BLE antenna implemented to PCB reference design has been measured in an anechoic chamber with 3 meters test distance. Test results show radiation patterns for two planes, measured with vertical and horizontal polarization of measuring antenna. All measurements were performed at 2402, 2440 and 2480 MHz frequency.



1.3 Test results BLE Antenna

EUT Information

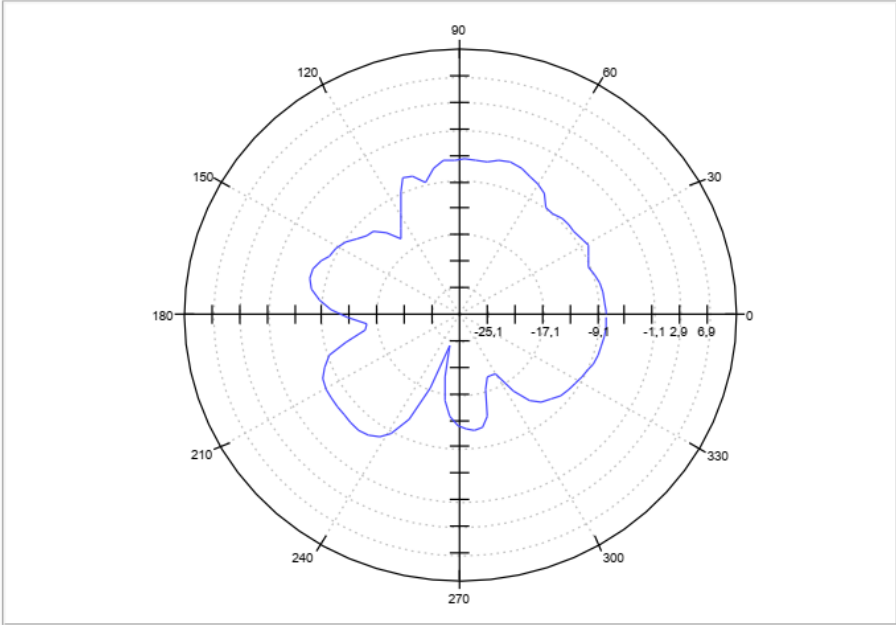
EUT:
Operating mode:

BP 18 Li 8,0 HP-ASI
TX 2402 MHz 4 dBm

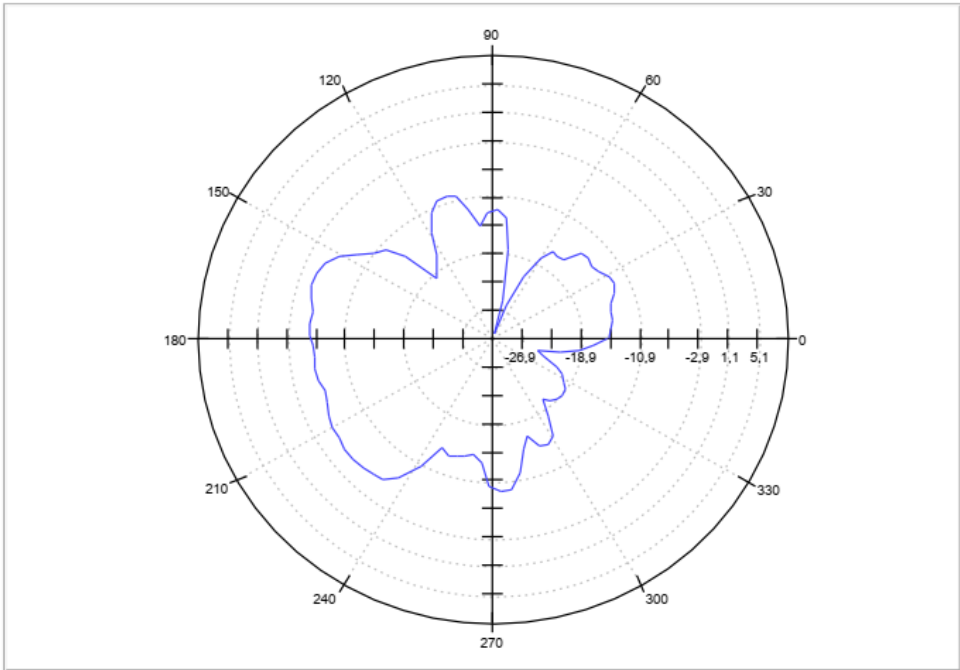
AziChart MinMax Eval

Frequency (MHz)	Max. Value (dBm)	Azimuth max. (deg)	Pol max.	Min. Value (dBm)	Azimuth min. (deg)	Pol min.
2402.000000	-4.95	72	H	-30.16	72	V

Azimuth Chart: Horizontal



Azimuth Chart: Vertical



EUT Information

EUT:

BP 18 Li 8,0 HP-ASI

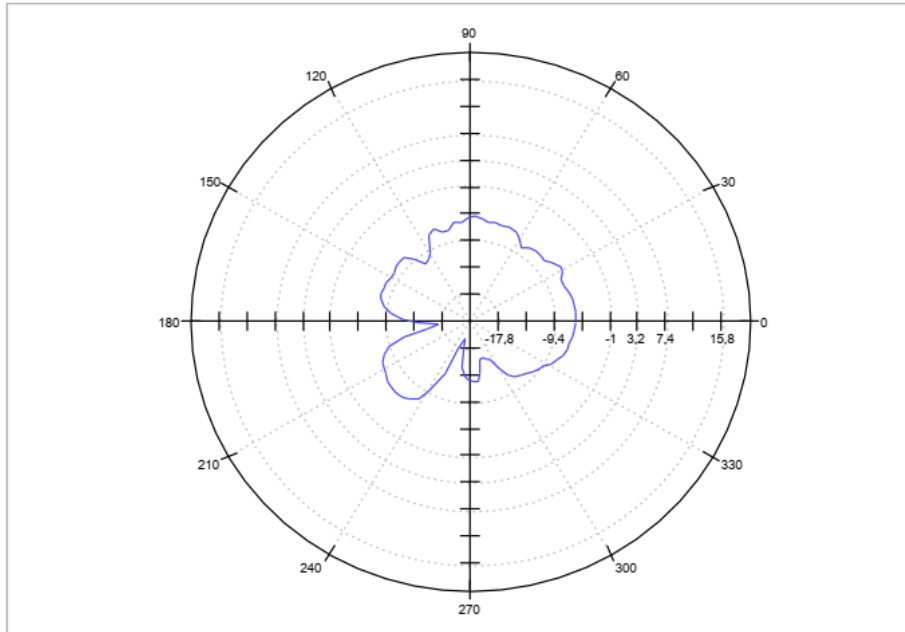
Operating mode:

TX 2440 MHz 4 dBm

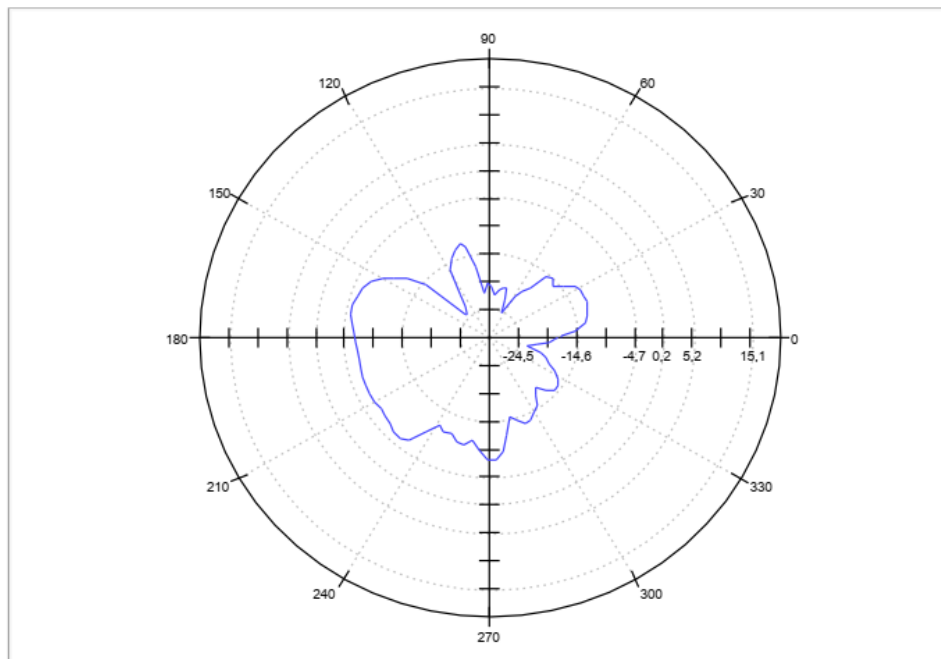
AziChart MinMax Eval

Frequency (MHz)	Max. Value (dBm)	Azimuth max. (deg)	Pol max.	Min. Value (dBm)	Azimuth min. (deg)	Pol min.
2440.000000	-5.33	166	V	-24.44	64	V

Azimuth Chart: Horizontal



Azimuth Chart: Vertical





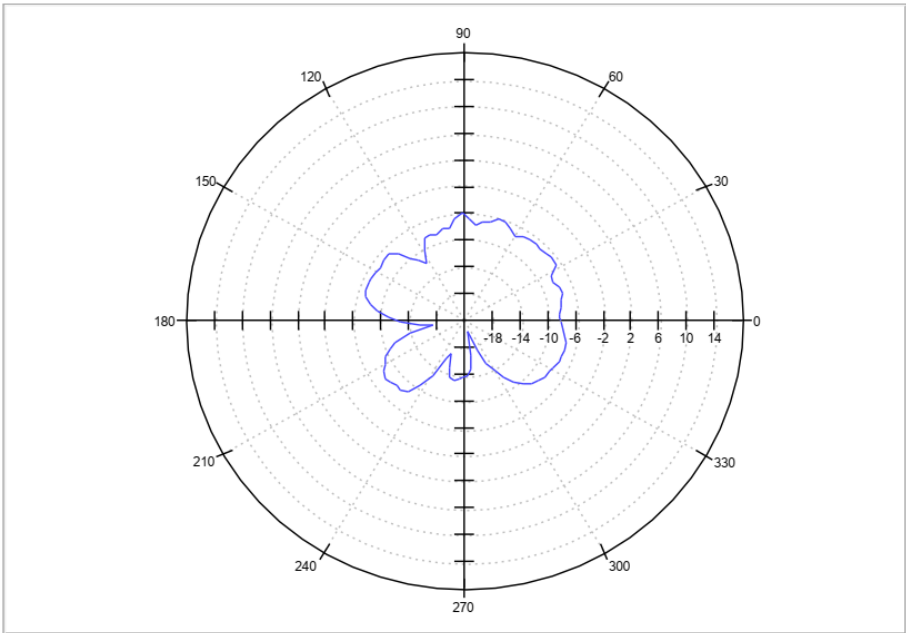
EUT Information

EUT: BP 18 Li 8,0 HP-ASI
Operating mode: TX 2480 MHz 4 dBm

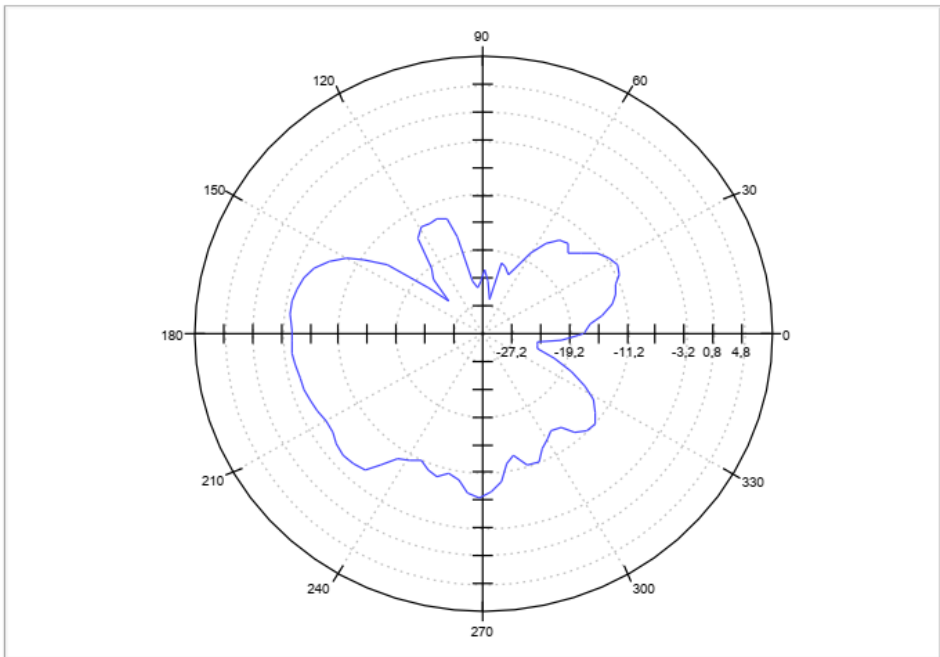
AziChart MinMax Eval

Frequency (MHz)	Max. Value (dBm)	Azimuth max. (deg)	Pol max.	Min. Value (dBm)	Azimuth min. (deg)	Pol min.
2480.000000	-4.34	170	V	-26.21	80	V

Azimuth Chart: Horizontal



Azimuth Chart: Vertical



1.4 Maximum BLE antenna gain

DUT Frequency (MHz)	Maximum antenna gain (dBi)
2402.000000	-4.95
2440.000000	-5.33
2480.000000	-4.34



2 USED TEST EQUIPMENT

Antenna pattern measurement

Manufacturer	Model No.	Used	Calibrated	Calibrated until
Comtest engineering, SAC2 (together with controlling equipment)	SAC 3m	X	2022-04-14	2025-04-14
Maturo, Turn table (2 m diameter)	TT 2.0 SI	X	/	/
Maturo, Bore-sight antenna mast	BAM-4.0-P	X	/	/
Maturo, positioning equipment	NCD	X	/	/
Rohde & Schwarz, RFI receiver	ESW 44	X	2023-03-09	2024-09-09
R&S, Ultra Broadband Antenna	HL562E	/	2020-09-30	2023-09-30
R&S, Horn Antenna	HF907	X	2020-08-21	2023-08-21