

Annex 1: Measurement diagrams 20-1-0094901T08a-A1

Number of pages:	14	Date of Report:	2021-Sep-06
Testing company:	CETECOM GmbH Im Teelbruch 116 45219 Essen Germany Tel. + 49 (0) 20 54 / 95 19-0 Fax: + 49 (0) 20 54 / 95 19-150	Applicant:	Prodrive Technologies B.V.
Product: Model:	RFID Reader RFID Reader		
FCC ID:	Y2IRFIDR	IC:	9389A-RFIDR
Testing has been carried out in accordance with:	Title 47 CFR, Chapter I FCC Regulations, Subchapter A Part 15, Subpart C: §15.225 ANSI C63.10-2020 chapter 6.4/5/8/9 ISED Regulations RSS-Gen, Issue 5 + Amendment 2 RSS-210, Issue 10 Deviations, modifications or clarifications (if any) to above mentioned documents are written in each section under "Test method and limit".		



Table of Contents

1 Measurement diagrams.....3

1 Measurement diagrams

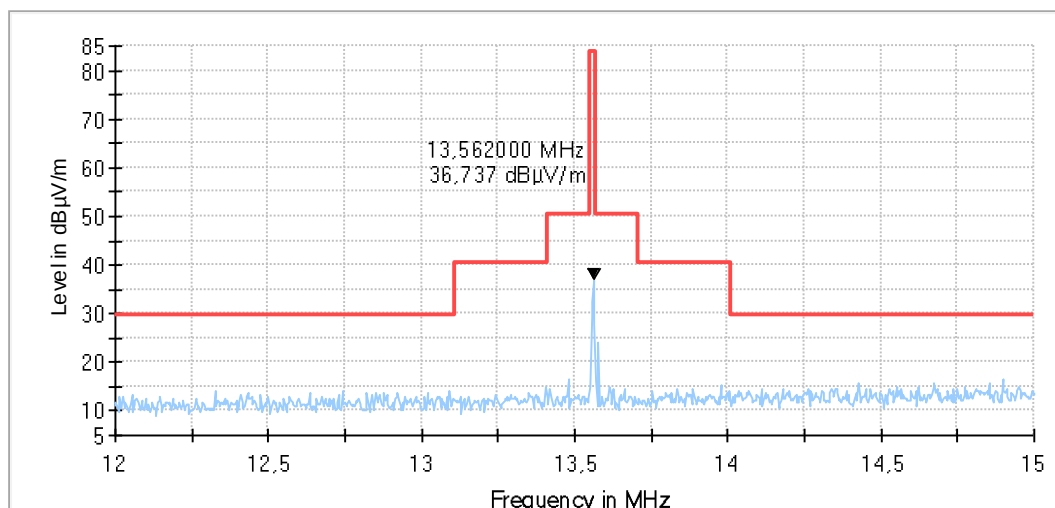
2.05_RSE_TX_standing

Common Information

Test Description:	Magnetic Field Strength Measurement related to 30/300 m distance
Test Site Location:	Ref.-Nr. 441 Semi Anechoic Chamber (SAC1) with 3 m measurement distance
Version of Testsoftware:	EMC32 V10.50.0
Distance correction:	used accord. table, pls. see test report
Technical Data:	Please see page 2 for detailed data of measurement setup
Rec. antenna (pre-scan):	height 1.00 m, parallel and 90° to EUT polarisation
Used Filter:	bypass
Test Standard:	FCC 15.205 § 15.209; RSS-Gen: Issue 4

Operator:	SSanthakum
Operating Mode:	TX 13,56 MHz
Power during tests:	12V DC, 110V/60Hz, full loaded batteries
Comment 1:	Channel low/middle/high
Comment 2:	
Environmental Conditions::	Humidity : 50%rH; Temperature: 20°C
EUT Setup:	1
Verdict:	Passed
Comment:	

Full Spectrum



2.02_H_Field_TX_laying

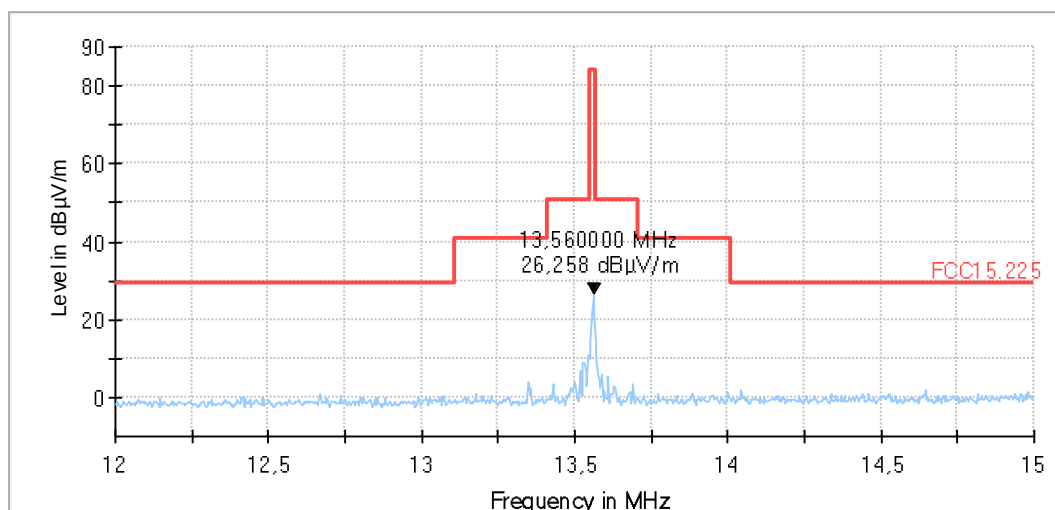
Common Information

Test Description:	Magnetic Field Strength Measurement related to 30 m distance
Test Site Location:	Ref.-Nr. 441 Semi Anechoic Chamber (SAC1) with 3 m measurement distance
Version of Testsoftware:	EMC32 V10.50.0
Distance correction:	used accord. table, pls. see test report
Technical Data:	Please see page 2 for detailed data of measurement setup
Rec. antenna (pre-scan):	height 1.00 m, parallel and 90° to EUT polarisation
Used Filter:	bypass
Test Standard:	FCC 15.225; RSS-Gen: Issue 3
Operator:	SSanthakum
Operating Mode:	TX 13,56 MHz
Power during tests:	12V DC, 110V/60Hz, full loaded batteries
Comment 1:	nominal channel
Environmental Conditions::	Humidity : 50%rH; Temperature: 20°C
EUT Setup:	1
Verdict:	Passed
Comment:	

EUT Information

PMT number:	20-1-00949S04_C02
Manufacturer:	Prodrive Technologies B.V.

Full Spectrum

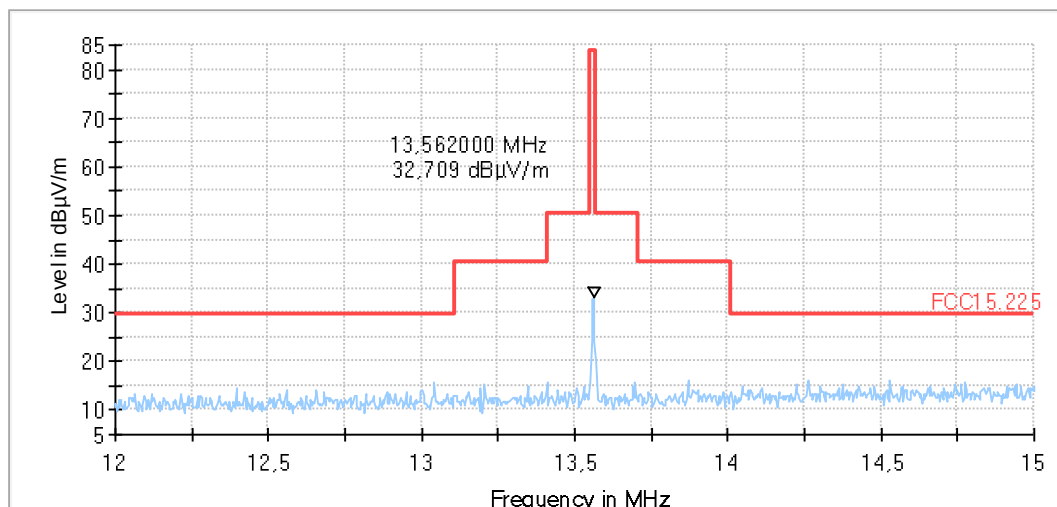


2.06_RSE_TXRX_standing

Common Information

Test Description:	Magnetic Field Strength Measurement related to 30/300 m distance
Test Site Location:	Ref.-Nr. 441 Semi Anechoic Chamber (SAC1) with 3 m measurement distance
Version of Testsoftware:	EMC32 V10.50.0
Distance correction:	used accord. table, pls. see test report
Technical Data:	Please see page 2 for detailed data of measurement setup
Rec. antenna (pre-scan):	height 1.00 m, parallel and 90° to EUT polarisation
Used Filter:	bypass
Test Standard:	FCC 15.205 § 15.209; RSS-Gen: Issue 4
Operator:	SSanthakum
Operating Mode:	TXRX 13,56 MHz
Power during tests:	12V DC, 110V/60Hz, full loaded batteries
Comment 1:	Channel low/middle/high
Comment 2:	
Environmental Conditions::	Humidity : 50%rH; Temperature: 20°C
EUT Setup:	1
Verdict:	Passed
Comment:	

Full Spectrum



2.04_H_Field_TXRX_laying

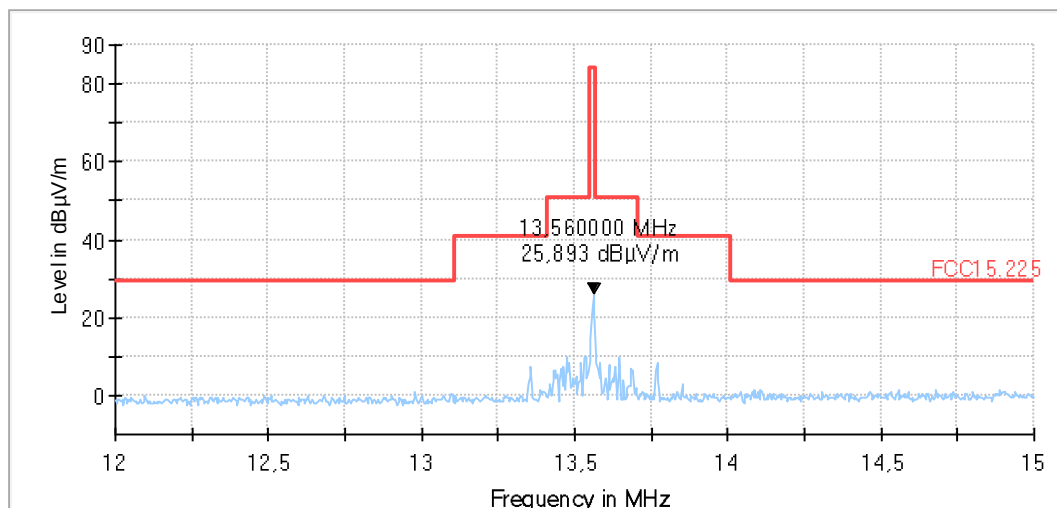
Common Information

Test Description:	Magnetic Field Strength Measurement related to 30 m distance
Test Site Location:	Ref.-Nr. 441 Semi Anechoic Chamber (SAC1) with 3 m measurement distance
Version of Testsoftware:	EMC32 V10.50.0
Distance correction:	used accord. table, pls. see test report
Technical Data:	Please see page 2 for detailed data of measurement setup
Rec. antenna (pre-scan):	height 1.00 m, parallel and 90° to EUT polarisation
Used Filter:	bypass
Test Standard:	FCC 15.225; RSS-Gen: Issue 3
Operator:	SSanthakum
Operating Mode:	TXRX 13,56 MHz
Power during tests:	12V DC, 110V/60Hz, full loaded batteries
Comment 1:	nominal channel
Environmental Conditions::	Humidity : 50%rH; Temperature: 20°C
EUT Setup:	1
Verdict:	Passed
Comment:	

EUT Information

PMT number:	20-1-00949S04_C02
Manufacturer:	Prodrive Technologies B.V.

Full Spectrum

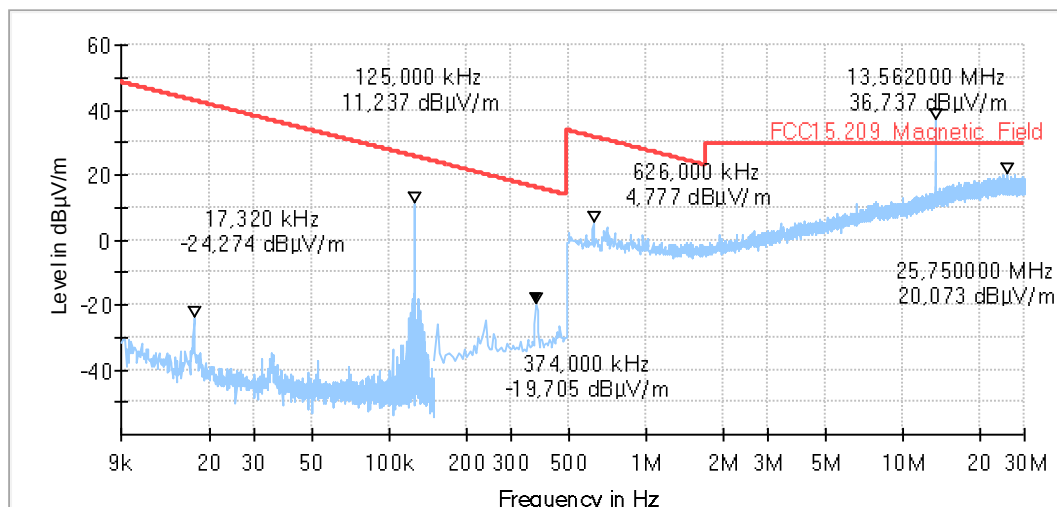


2.05_RSE_TX_standing

Common Information

Test Description:	Magnetic Field Strength Measurement related to 30/300 m distance
Test Site Location:	Ref.-Nr. 441 Semi Anechoic Chamber (SAC1) with 3 m measurement distance
Version of Testsoftware:	EMC32 V10.50.0
Distance correction:	used accord. table, pls. see test report
Technical Data:	Please see page 2 for detailed data of measurement setup
Rec. antenna (pre-scan):	height 1.00 m, parallel and 90° to EUT polarisation
Used Filter:	bypass
Test Standard:	FCC 15.205 § 15.209; RSS-Gen: Issue 4
Operator:	SSanthakum
Operating Mode:	TX 13,56 MHz
Power during tests:	12V DC, 110V/60Hz, full loaded batteries
Comment 1:	Channel low/middle/high
Comment 2:	
Environmental Conditions::	Humidity : 50%rH; Temperature: 20°C
EUT Setup:	1
Verdict:	Passed
Comment:	

Full Spectrum

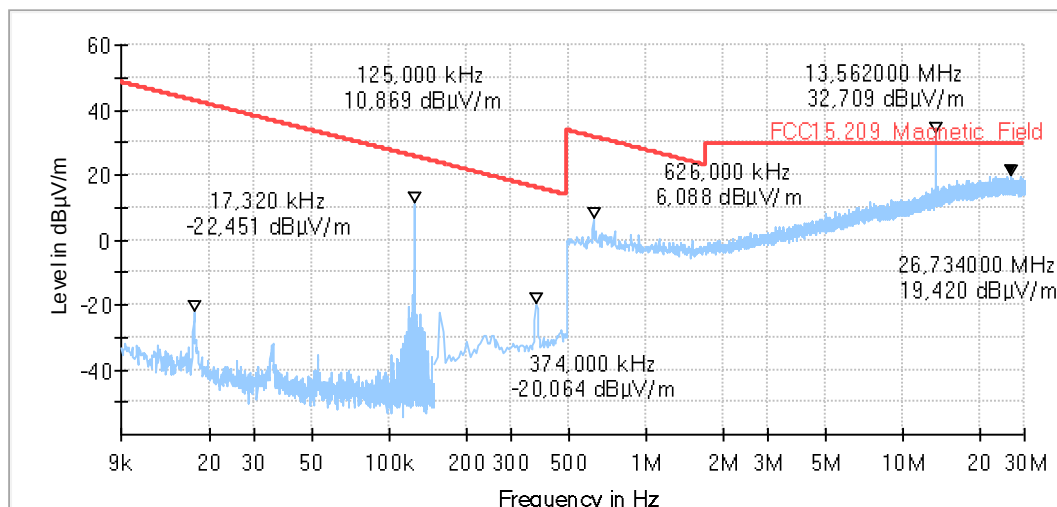


2.06_RSE_TXRX_standing

Common Information

Test Description:	Magnetic Field Strength Measurement related to 30/300 m distance
Test Site Location:	Ref.-Nr. 441 Semi Anechoic Chamber (SAC1) with 3 m measurement distance
Version of Testsoftware:	EMC32 V10.50.0
Distance correction:	used accord. table, pls. see test report
Technical Data:	Please see page 2 for detailed data of measurement setup
Rec. antenna (pre-scan):	height 1.00 m, parallel and 90° to EUT polarisation
Used Filter:	bypass
Test Standard:	FCC 15.205 § 15.209; RSS-Gen: Issue 4
Operator:	SSanthakum
Operating Mode:	TXRX 13,56 MHz
Power during tests:	12V DC, 110V/60Hz, full loaded batteries
Comment 1:	Channel low/middle/high
Comment 2:	
Environmental Conditions::	Humidity : 50%rH; Temperature: 20°C
EUT Setup:	1
Verdict:	Passed
Comment:	

Full Spectrum



3.01_RSE_TX_standing

Common Information

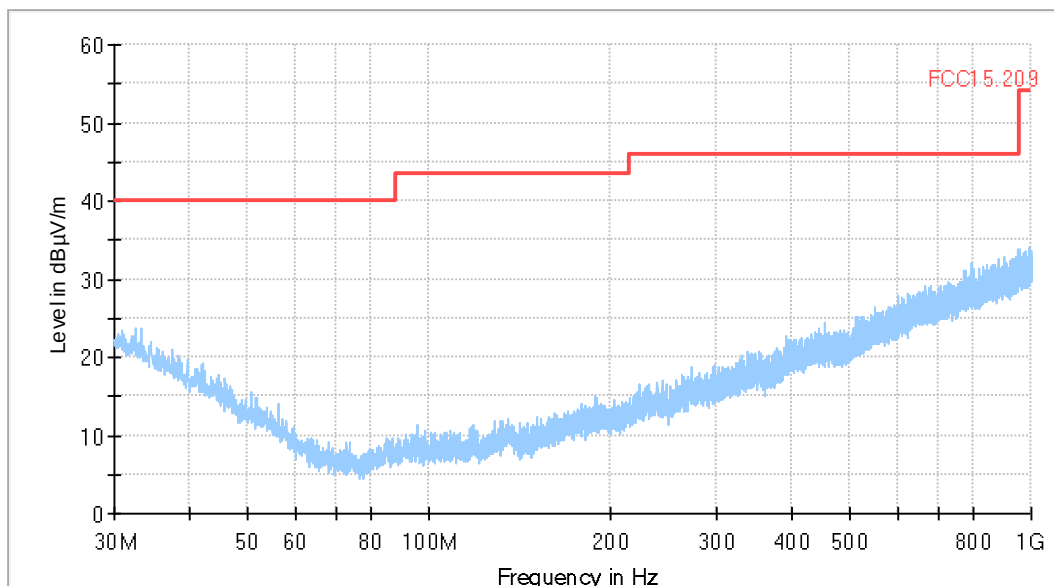
Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.205&15.209 & RSS Gen. Issue 5
Antenna polarisation:	horizontal/vertical
Environmental Conditions:	Humidity : 50%rH; Temperature: 20°C
Operator Name:	
EUT:	
Operating Mode:	TX
Power supply:	
Comment:	Channel no. low/middle/high
Verdict:	Passed

EUT Information

PMT number:	20-1-00949S04_C02
Manufacturer:	Prodrive Technologies B.V.

Full Spectrum

Full Spectrum



3.02_RSE_TXRX_standing

Common Information

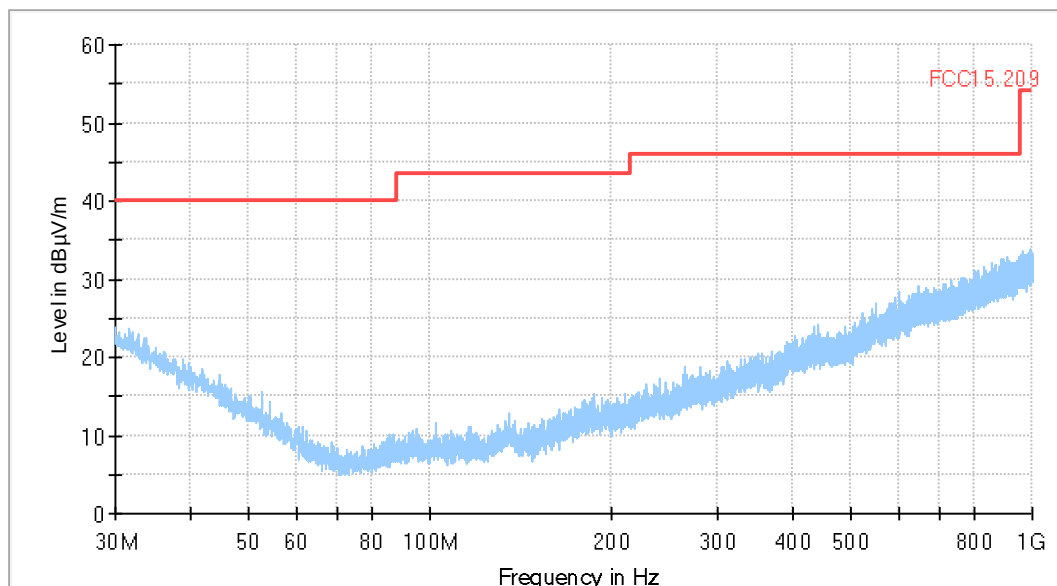
Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.205&15.209 & RSS Gen. Issue 5
Antenna polarisation:	horizontal/vertical
Environmental Conditions:	Humidity : 50%rH; Temperature: 20°C
Operator Name:	
EUT:	
Operating Mode:	TXRX 13,56 MHz
Power supply:	
Comment:	Channel no. low/middle/high
Verdict:	Passed

EUT Information

PMT number:	20-1-00949S04_C02
Manufacturer:	Prodrive Technologies B.V.

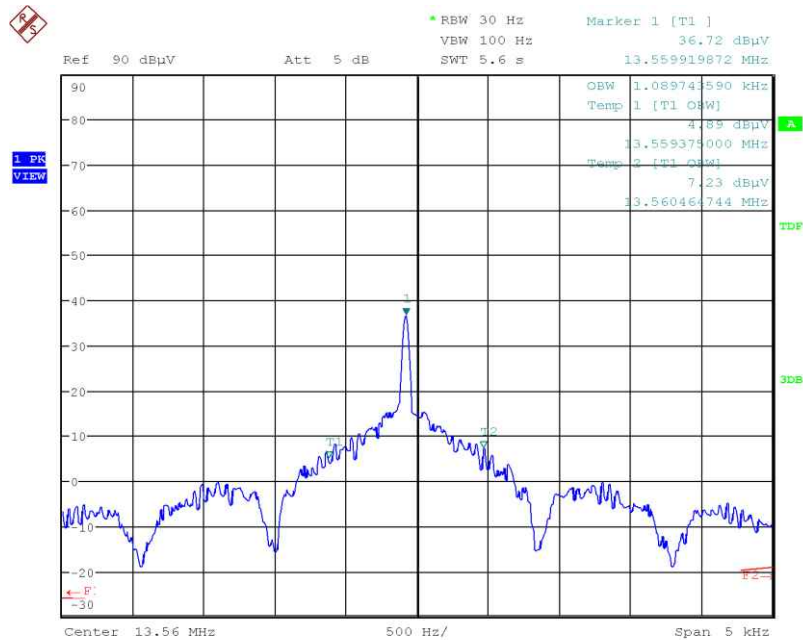
Full Spectrum

Full Spectrum



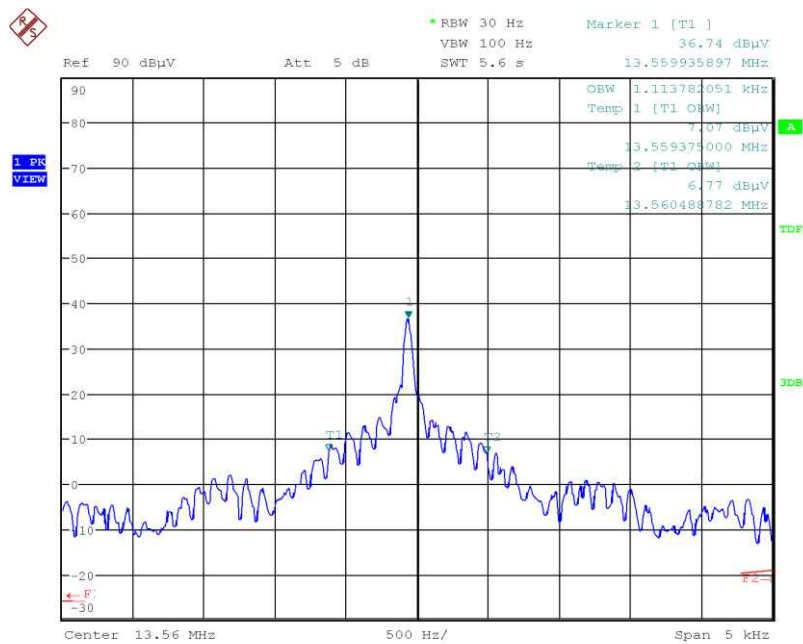
Occupied bandwidth tests

EUT TX mode (without RFID tag)



Date: 10.AUG.2021 13:49:29

EUT TXRX mode (with RFID tag)

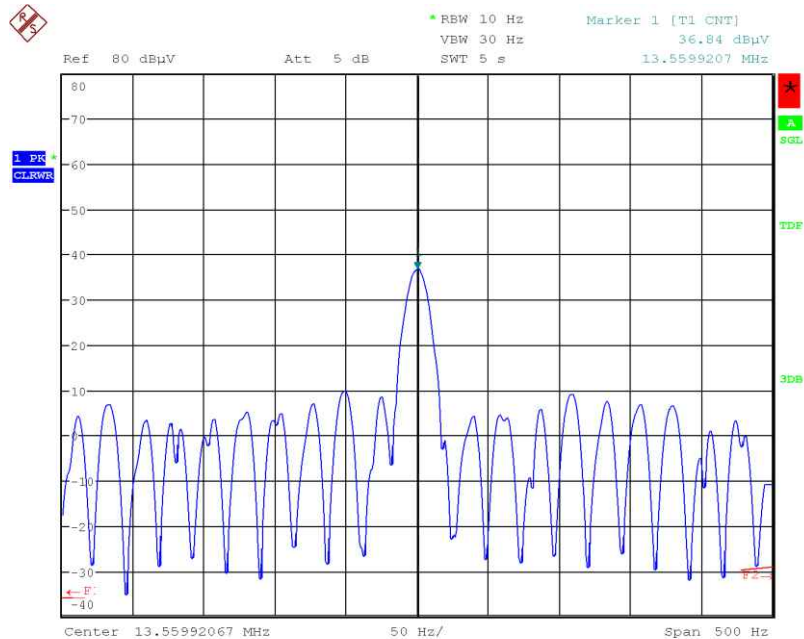


Date: 10.AUG.2021 13:54:16

1.1 Frequency stability

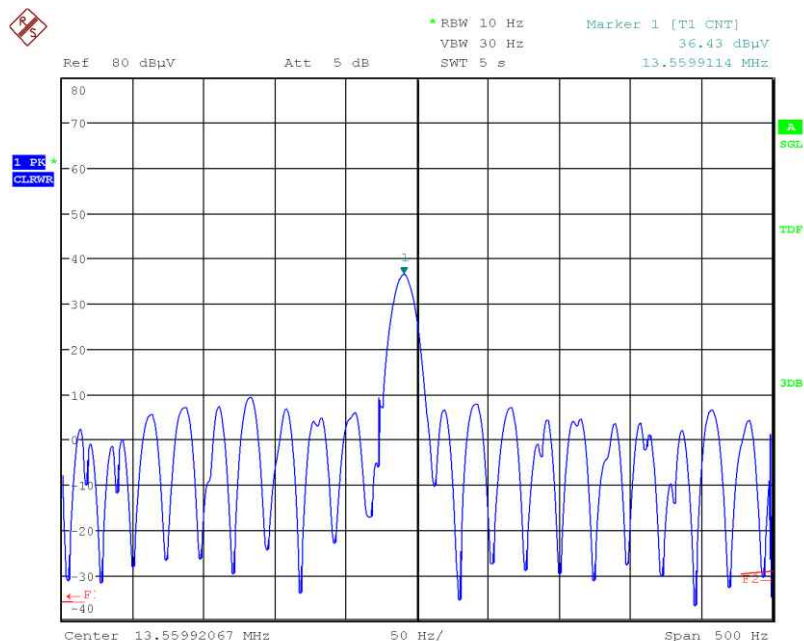
Only reference and worst-case measurement diagram are shown.

TnomVnom (voltage variation)

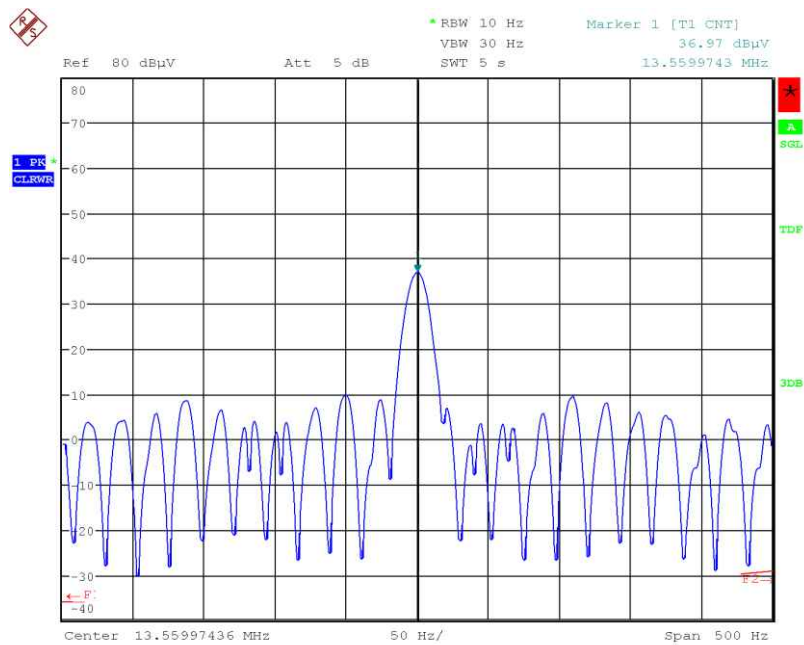


Date: 10.AUG.2021 15:16:56

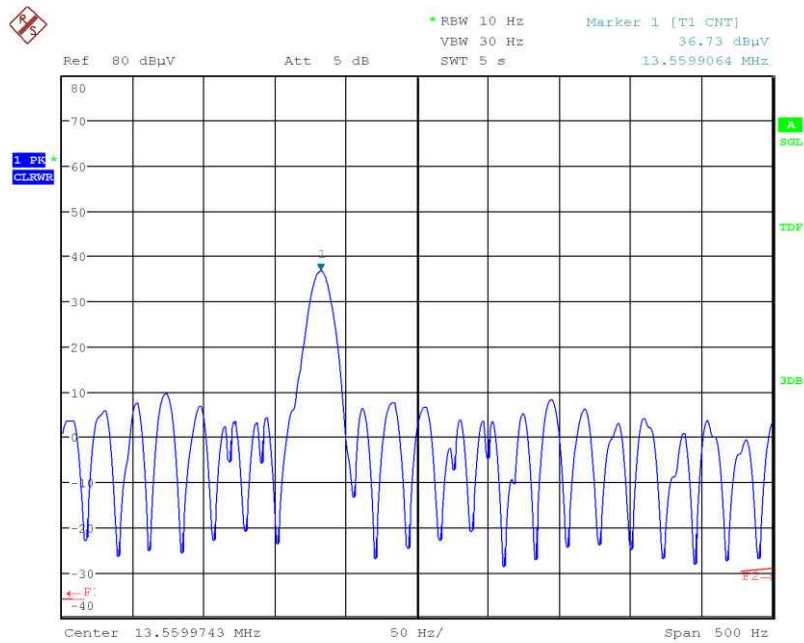
TnomV=36 VDC (voltage variation worst case)



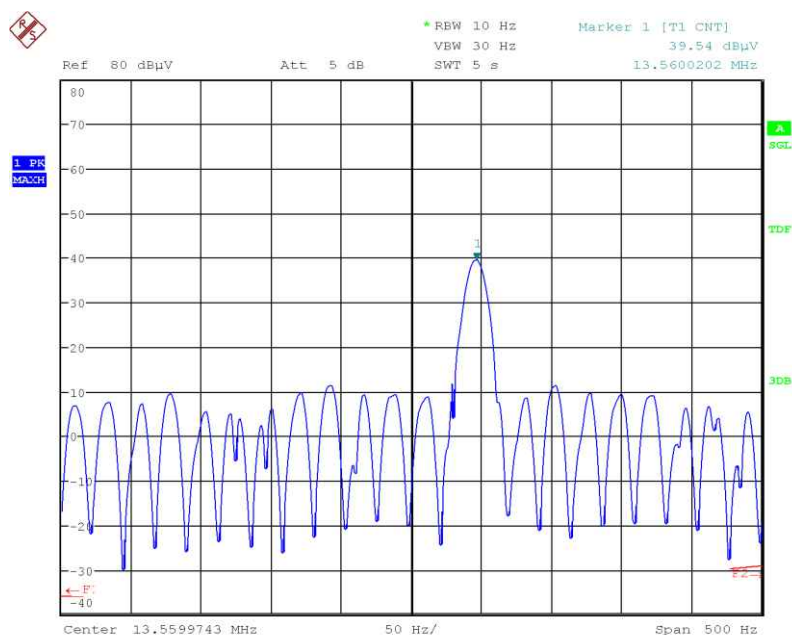
Date: 10.AUG.2021 15:43:21

VnomTnom (temperature variation)

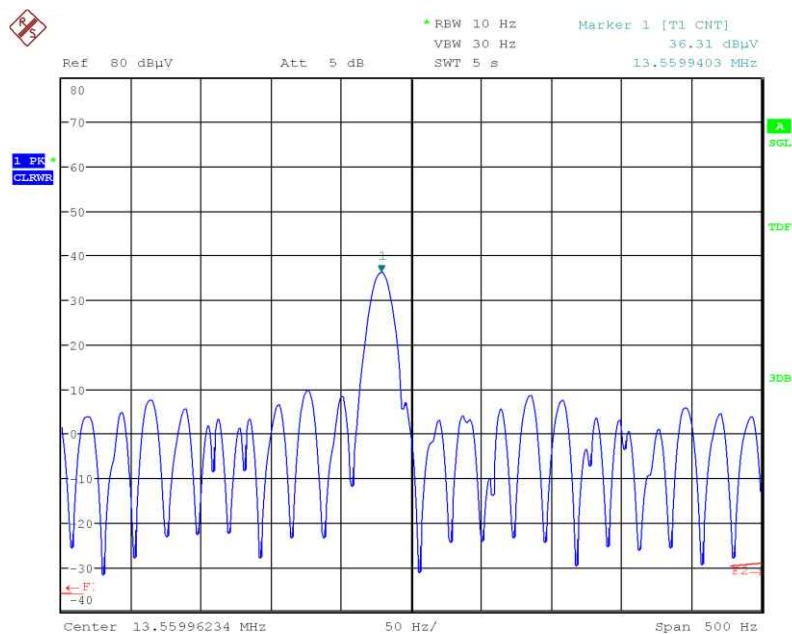
Date: 11.AUG.2021 08:26:56

VnomT=50 °C at 2 min

Date: 11.AUG.2021 11:35:06

VnomTmin (temperature variation, worst case -30°C after 10mins)

Date: 12.AUG.2021 10:12:48

VnomTmax (temperature variation, worst case 75°C after 2mins)

Date: 11.AUG.2021 09:38:17

End Of Annex 1