

Annex 1: Test Result Diagrams to PARTIAL TEST REPORT No.: 2-20842790-15-9a

According to:
FCC Regulations
Part 15.209
Part 15.247

IC-Regulations
RSS-Gen, Issue 4
RSS-247, Issue 1

for

Datalogic ADC S.r.l.
JOYA TOUCH
Type: P00AN04HL0HT0W7-GR0

FCC-ID: U4GJNGWB
IC: 3862E-JNGWB
PMN: JOYA TOUCH
HVIN: JNG P HH







Laboratory Accreditation and Listings			
 <p>DAkkS Deutsche Akkreditierungsstelle D-PL-12047-01-01</p>	 <p>FCC FEDERAL COMMUNICATIONS COMMISSION USA • NOISSIS MRA US-EU 0003</p>	 <p>Industry Canada Reg. No.: 3462D-1 Reg. No.: 3462D-2 Reg. No.: 3462D-3</p>	 <p>Voluntary Controls for Electromagnetic Emissions Reg. No.: R-2666 C-2914, T-1967, G-301</p>
 <p>WiFi ALLIANCE AUTHORIZED RF LABORATORY</p>	 <p>ctia AuthorizedTM Test Lab Lab Code: 20011130-00</p>		
accredited according to DIN EN ISO/IEC 17025			
<p>CETECOM GmbH Laboratory Radio Communications & Electromagnetic Compatibility Im Teelbruch 116 • 45219 Essen • Germany Registered in Essen, Germany, Reg. No.: HRB Essen 8984 Tel.: + 49 (0) 20 54 / 95 19-954 • Fax: + 49 (0) 20 54 / 95 19-964 E-mail: info@cetecom.com • Internet: www.cetecom.com</p>			

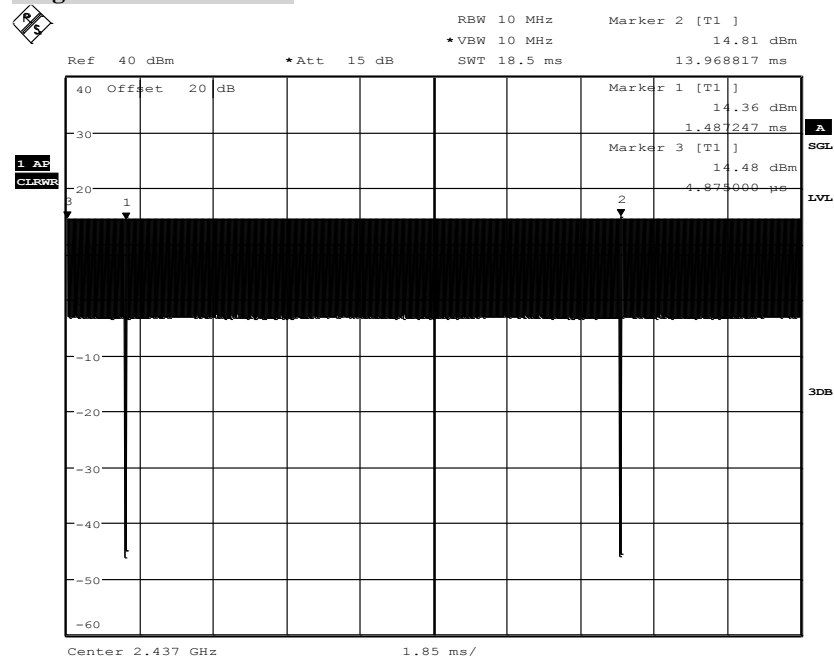
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1. Duty-Cycle of Transmitter

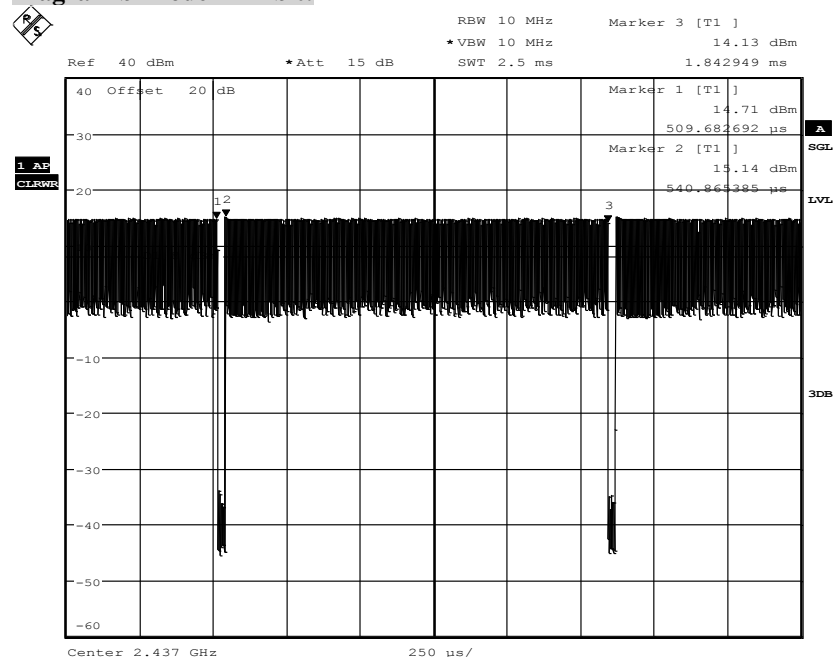
The characteristics of the implemented test mode was checked on middle channel no. 6 (b-Mode , g –Mode and n – Mode HT20) only.

Diagram b-Mode 1Mbit:



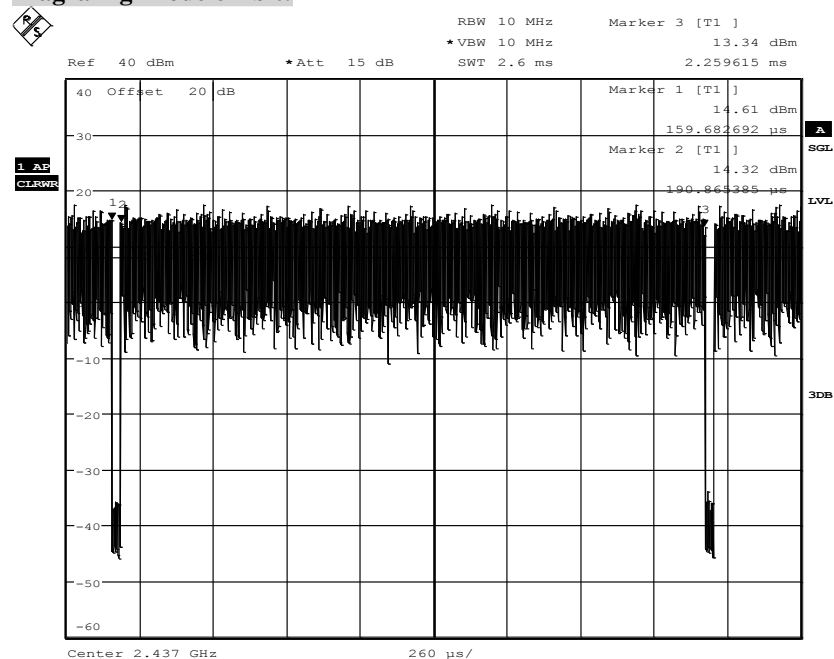
Date: 2.MAY.2016 22:40:09

Diagram b-Mode 11 Mbit:



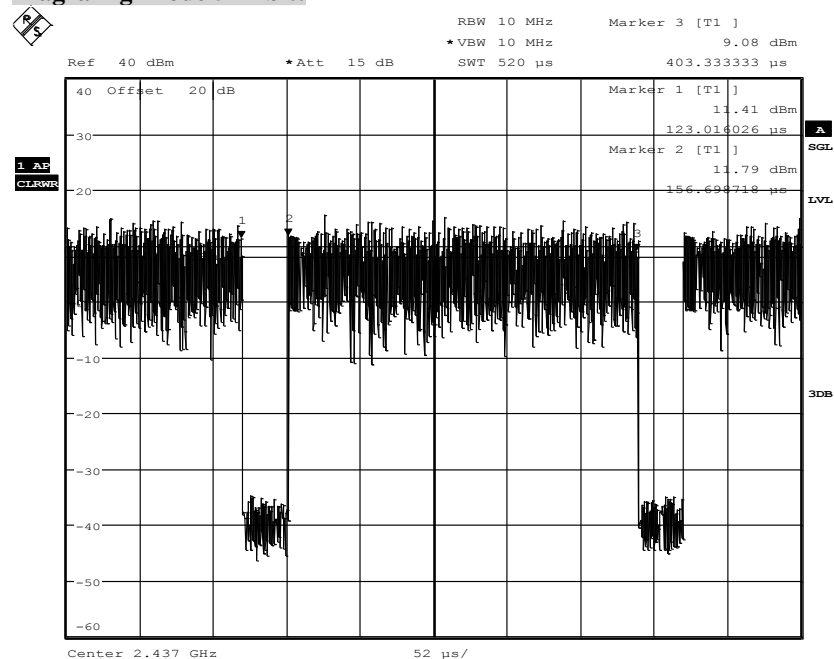
Date: 2.MAY.2016 22:42:05

Diagram g-Mode 6Mbit:



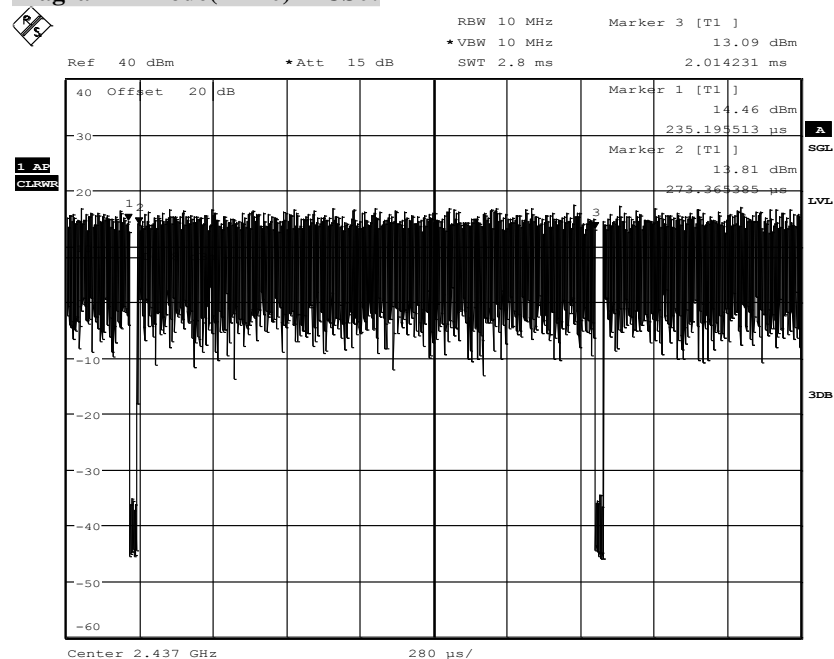
Date: 2.MAY.2016 22:43:24

Diagram g-Mode 54Mbit:



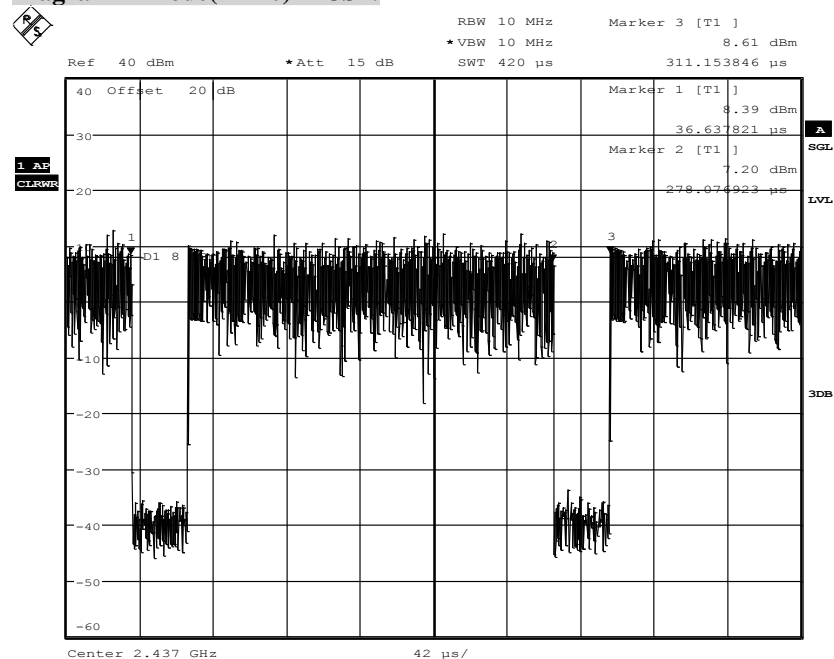
Date: 2.MAY.2016 22:44:32

Diagram n-Mode(HT20) MCS0:



Date: 2.MAY.2016 22:45:58

Diagram n-Mode(HT20) MCS7:



Date: 2.MAY.2016 22:47:40

2. Maximum Peak Conducted Output Power

2.1. 20MHz signal BW

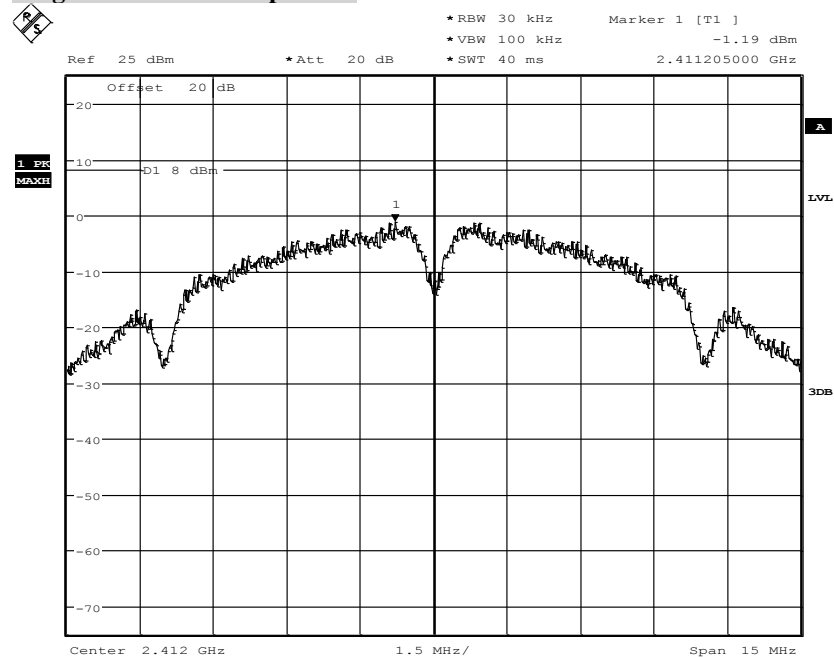
b-mode		Channel no. / [dBm]			Max-Value / [dBm]
Data rate	Modulation	1	6	11	
1MBit		14,36	14,27	13,66	14,36
2Mbit		14,35	14,27	13,45	
5.5Mbit		14,26	14,08	13,37	
11MBit		14,36	14,10	13,36	
g-Mode		Channel no. / [dBm]			Max-Value / [dBm]
Data rate	Modulation	1	6	11	
6Mbit		13,62	15,78	12,25	15,98
9Mbit		13,71	15,73	12,35	
12Mbit		13,64	15,77	12,27	
18Mbit		13,55	15,67	12,17	
24Mbit		13,09	15,98	12,56	
36Mbit		12,68	15,64	12,13	
48Mbit		12,69	14,43	12,15	
54MBit		12,85	13,11	12,29	
n-Mode HT20 (1 spatial stream: 1SS)		Channel no. / [dBm]			Max-Value / [dBm]
Data rate	Modulation	1	6	11	
MCS0 - 6.5Mbps	BPSK	12,69	12,95	11,48	12,95
MCS1 - 13Mbps	QPSK	12,68	12,57	12,65	
MCS2 - 19.5Mbps	QPSK	12,52	12,54	11,32	
MCS3 - 26Mbps	QAM16	12,64	12,61	11,44	
MCS4 - 39Mbps	QAM16	12,59	12,87	11,43	
MCS5 - 52Mbps	QAM64	12,53	12,77	11,33	
MCS6 - 58.5Mbps	QAM64	11,58	10,48	10,22	
MCS7 - 65Mbps	QAM64	11,44	10,32	10,04	

Remarks:

- 1.) The values in above table are conducted output power without declared antenna gain .
- 2.) The maximum measured conducted power values among each mode for each channel are highlighted.

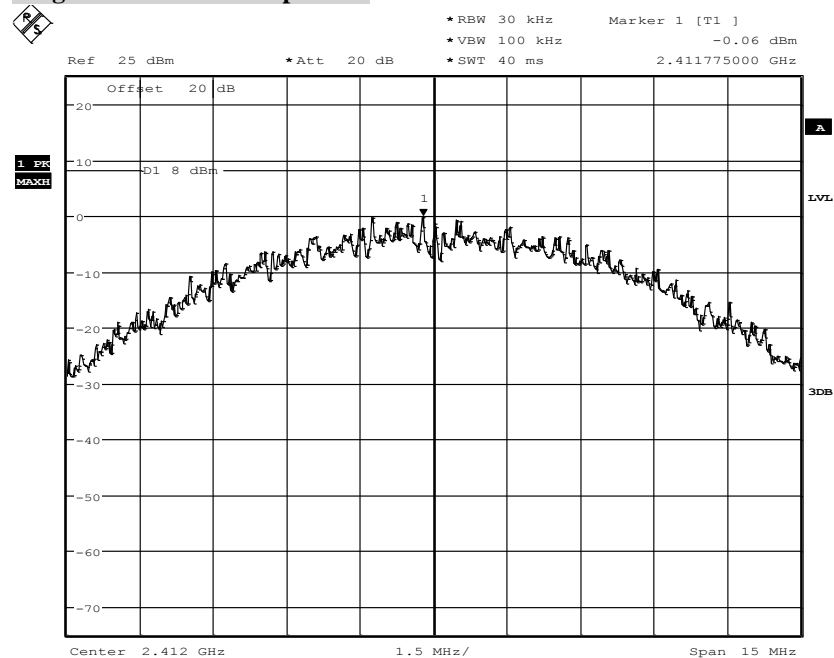
3. Conducted Power Spectral Density

Diagram b-Mode 1Mbps Ch1:



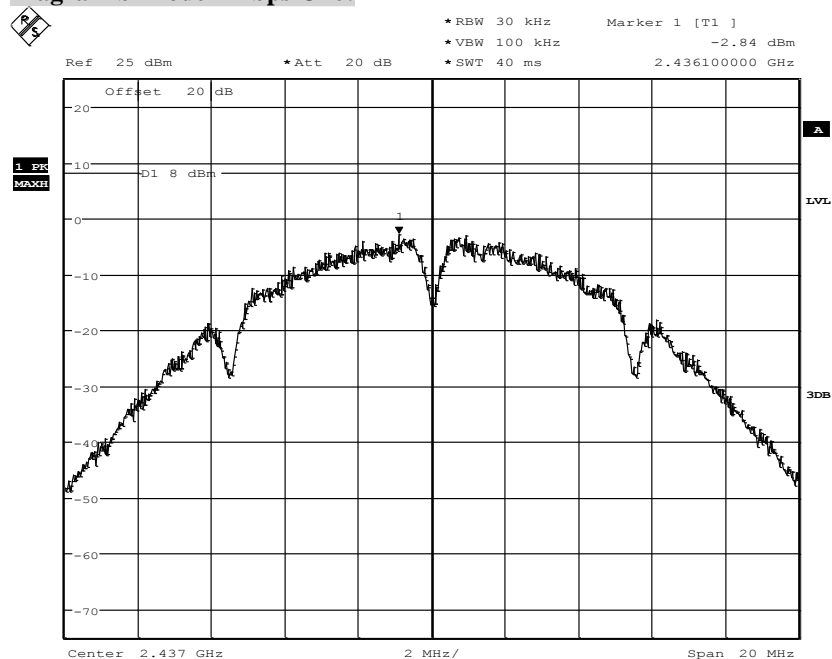
Date: 2.MAY.2016 17:48:35

Diagram b-Mode 11Mbps Ch1:



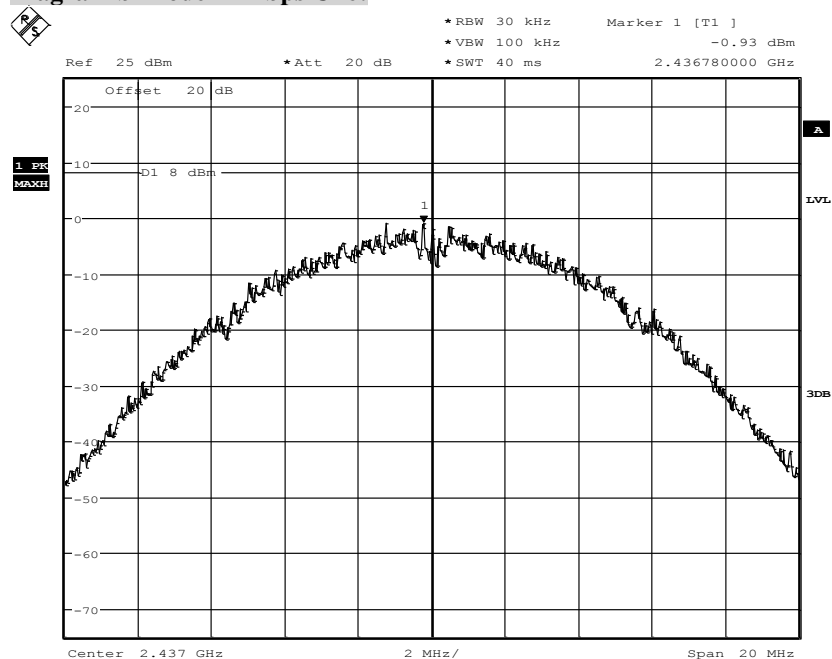
Date: 2.MAY.2016 17:54:51

Diagram b-Mode 1Mbps Ch6:



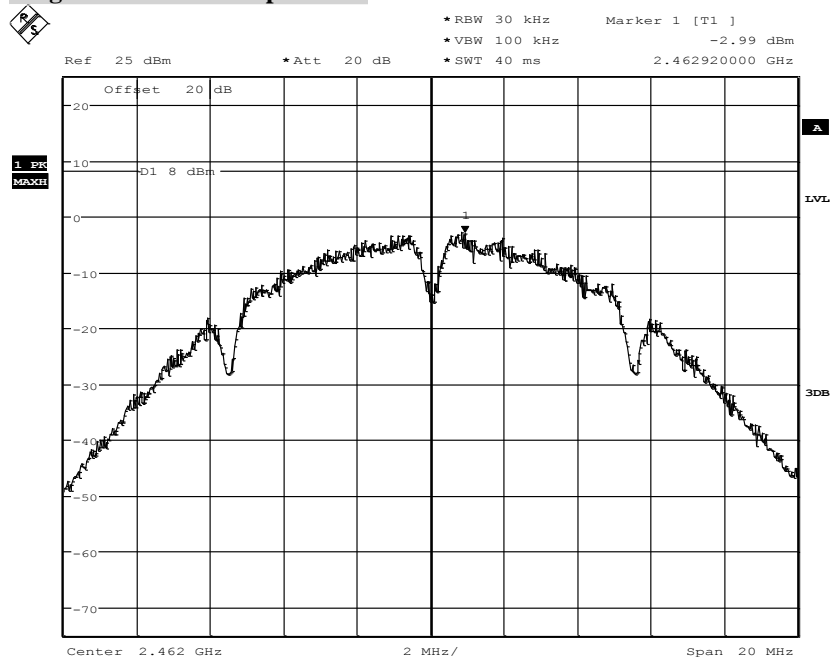
Date: 2.MAY.2016 18:25:23

Diagram b-Mode 11Mbps Ch6:



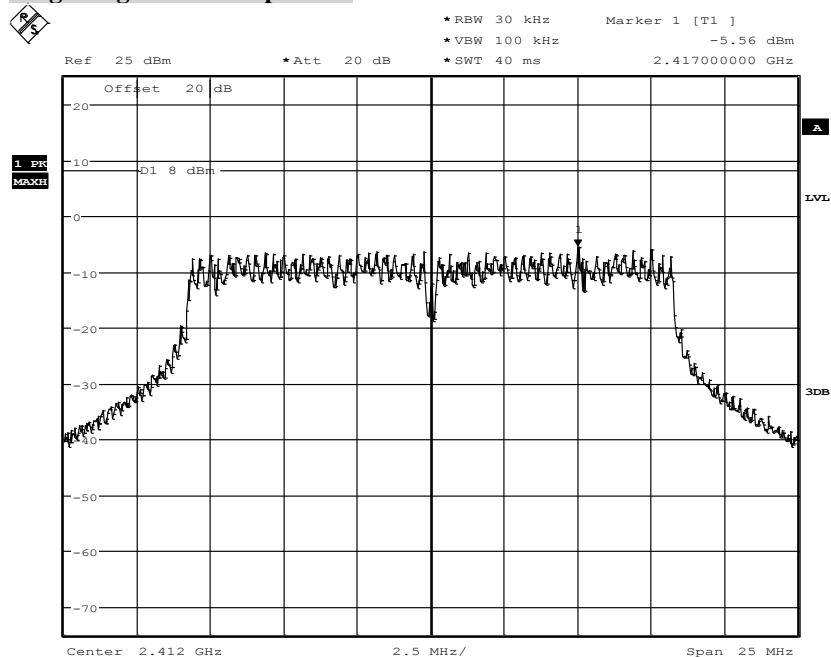
Date: 2.MAY.2016 18:26:14

Diagram b-Mode 1Mbps Ch11:



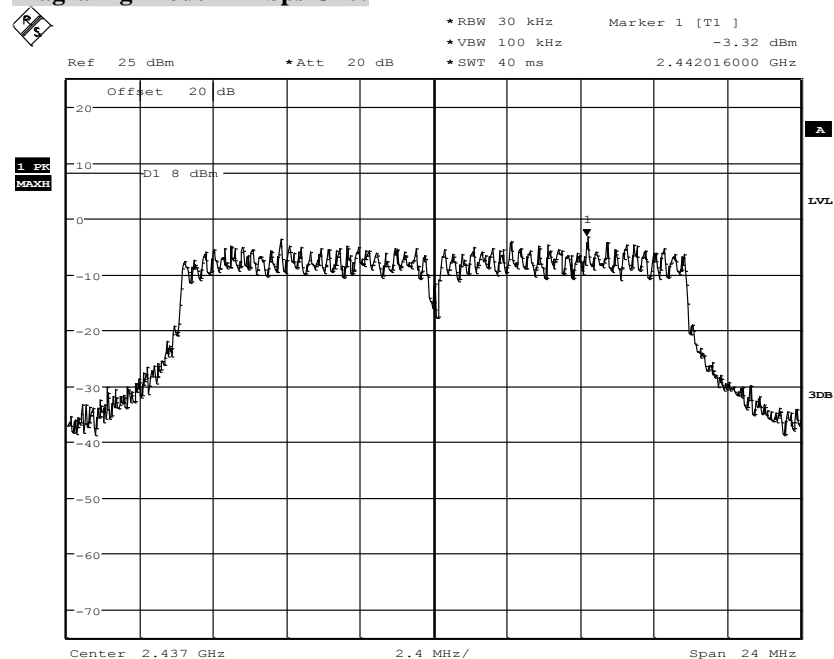
Date: 2.MAY.2016 18:42:10

Diagram g-Mode 9Mbps Ch1:



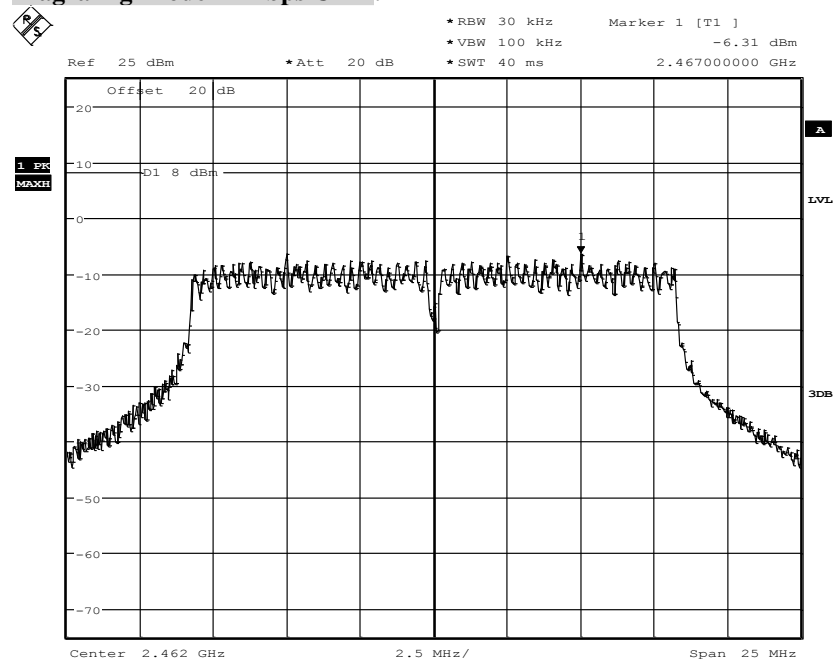
Date: 2.MAY.2016 17:58:26

Diagram g-Mode 24Mbps Ch6:



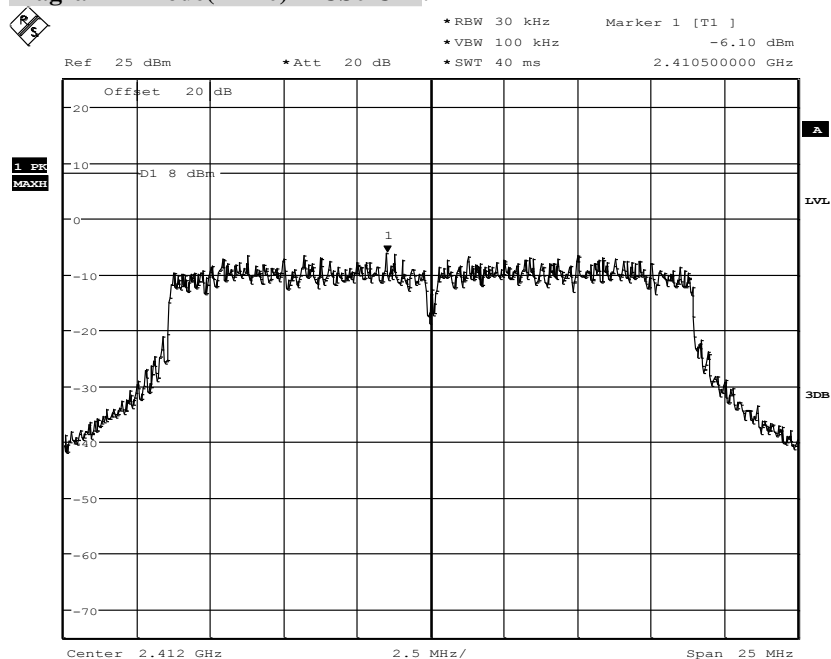
Date: 2.MAY.2016 18:27:10

Diagram g-Mode 24Mbps Ch11:



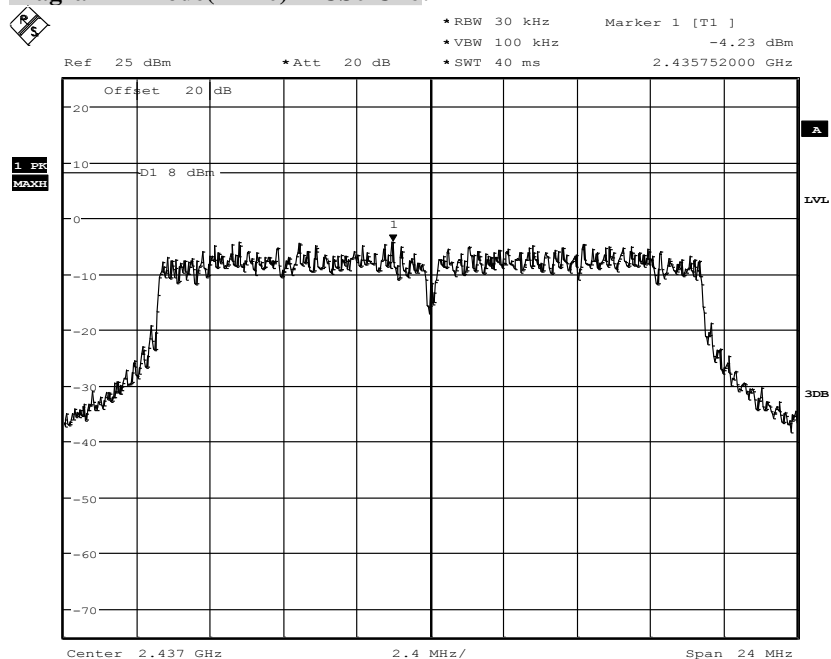
Date: 2.MAY.2016 18:43:35

Diagram n-Mode(HT20) MCS0 Ch1:



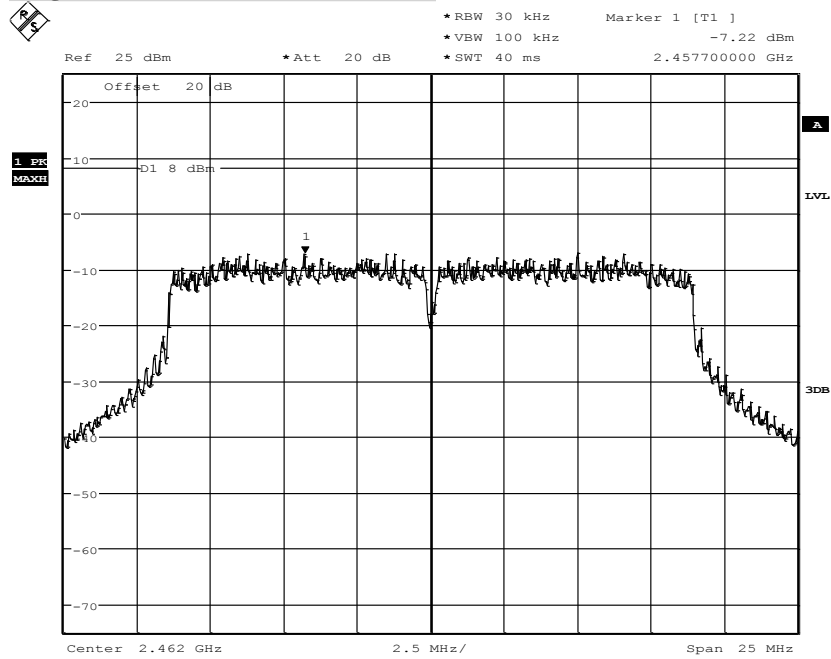
Date: 2.MAY.2016 18:10:12

Diagram n-Mode(HT20) MCS0 Ch6:



Date: 2.MAY.2016 18:39:31

Diagram n-Mode(HT20) MCS0 Ch11:



Date: 2.MAY.2016 18:46:33

4. Radiated magnetic field strengths measurements (9kHz to 30MHz)

Diagram No: 2.01_WLAN_b mode_1Mbps_Ch11_9kHz-30 MHz

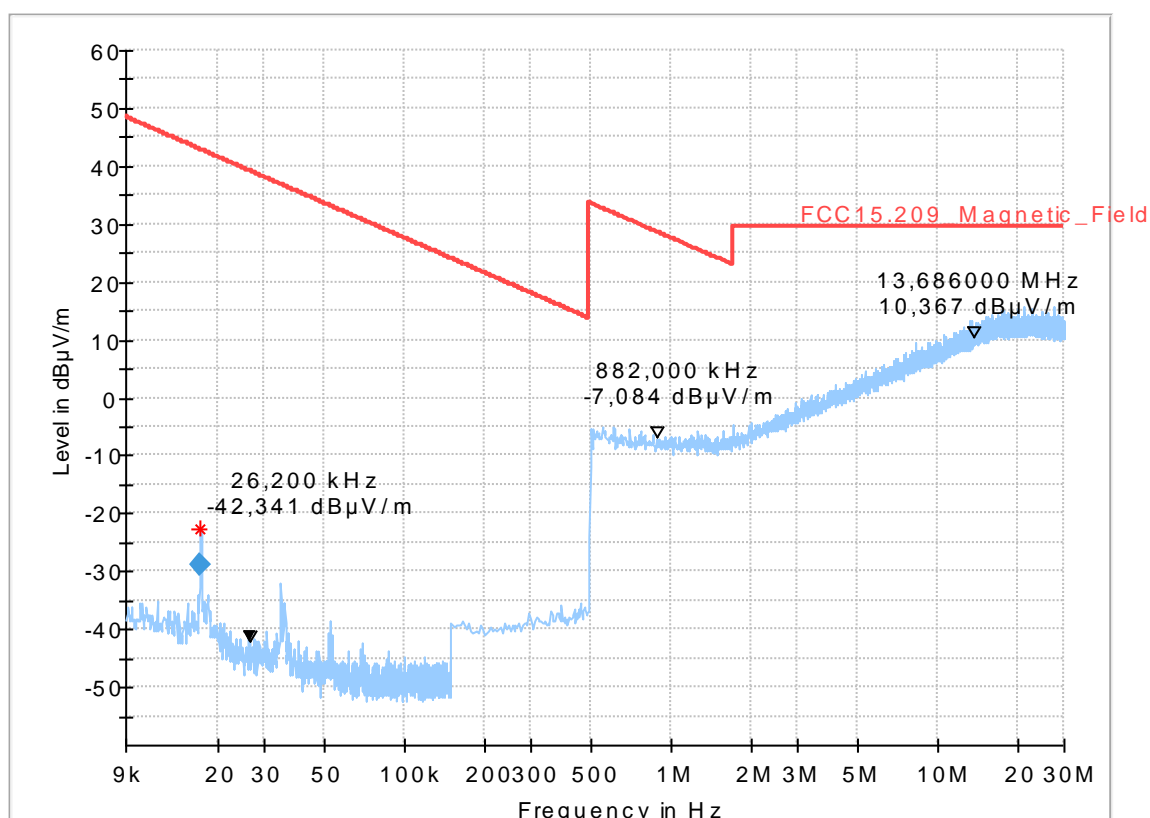
Common Information

Test description:	Magnetic Field Strength Measurement related to 30/300 m distance
Test site and distance:	Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance
Version of Testsoftware:	EMC32 V9.25.0
Distance correction:	used accord. table, pls. see test report
Used filter:	bypass
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
Test specification.:	FCC 15.209/15.205; RSS-Gen., Issue 4
Operator:	MFr
Operating conditions:	TX-on WLAN 802.11 b-mode, BW 20 MHz channel 11; 1Mbps;

EUT Information

Manufacturer:	Datalogic ADCL S.r.l.
MODEL:	JOYA TOUCH
EuT Type:	P00AN04HL0HT0W7-GR0
P/N:	911350015
S/N:	Z16P00044
HW Version:	Beta HW Version
SW Version:	WEC7
Firmware Version:	2.16
Input:	Fully Charged Internal Battery

Full Spectrum



Final Result

Frequency (MHz)	RMS (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
0.017160	-28.97	42.91	71.87	1000.0	0.200	100.0	H	128.0	-58.7

5. Radiated field strengths measurements (30MHz to 1GHz)

Diagram No: 3.01_WLAN_b mode_1Mbps_Ch11_30 MHz - 1 GHz

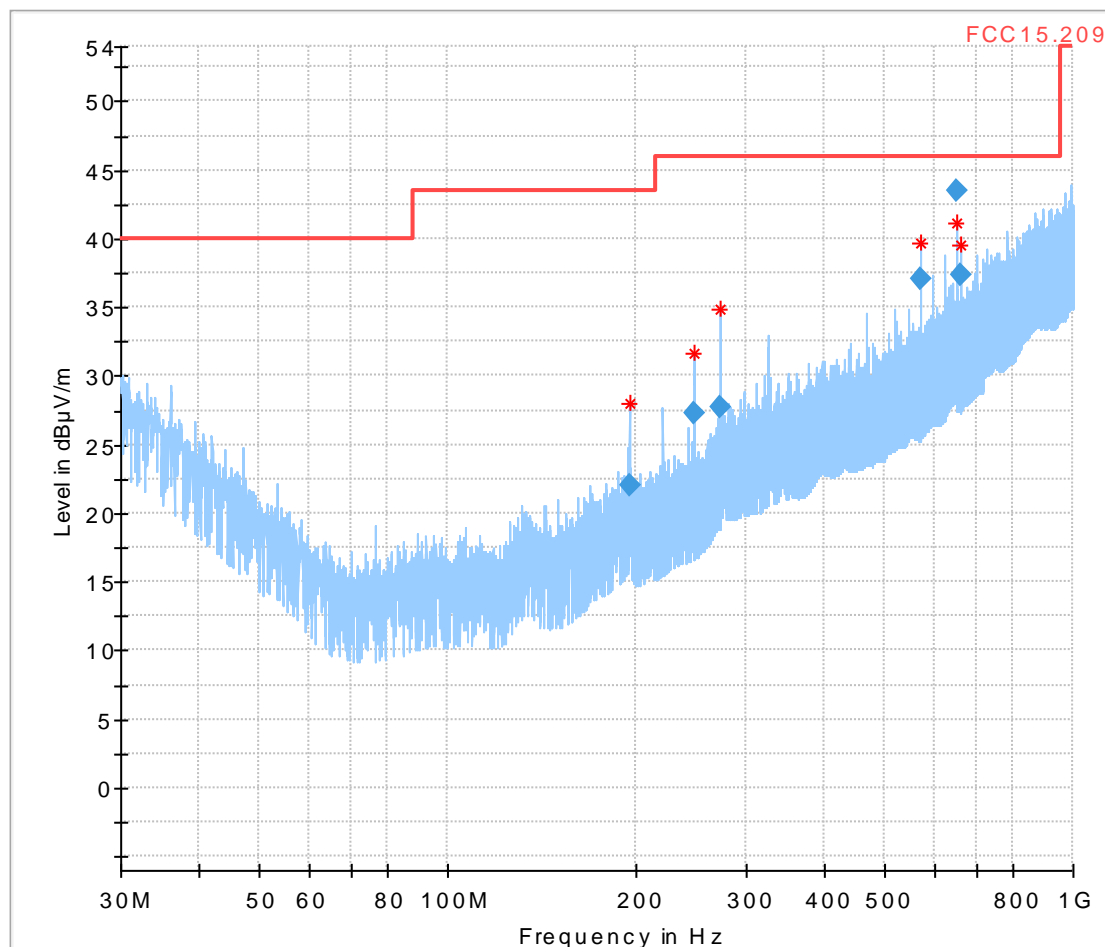
Common Information

Test description:	Electric Field Strength Measurement
Test site and distance:	Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance
Version of Testsoftware:	EMC32 V9.25.0
Distance correction:	not used
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:	TP NLP-1200
Test specification:	FCC 15.205 § 15.209; RSS-Gen: Issue 4
Operator:	APh
Operating conditions:	TX-on Continuous
Operating Mode:	TX-on WLAN 802.11 b-mode, BW 20 MHz channel 11; 1Mbps;

EUT Information

Manufacturer:	Datalogic ADCL S.r.l.
MODEL:	JOYA TOUCH
EuT Type:	P00AN04HL0GT0W7-GRO
P/N:	9113500015
S/N:	Z16P00044
HW Version:	Beta HW Version
SW Version:	WEC7
Firmware Version:	2.16
Input:	Fully Charged Internal Battery

Full Spectrum



Final_Result

Frequency (MHz)	QuasiPeak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)
194.990000	22.00	43.50	21.50	1000.0	120.000	159.0	V	151.0	0.0	12.5
247.000000	27.26	46.00	18.74	1000.0	120.000	150.0	V	22.0	0.0	13.2
273.000000	27.70	46.00	18.30	1000.0	120.000	153.0	V	14.0	0.0	14.9
571.990000	37.07	46.00	8.93	1000.0	120.000	121.0	H	27.0	0.0	21.7
650.000000	43.44	46.00	2.56	1000.0	120.000	175.0	H	93.0	90.0	23.3
662.980000	37.38	46.00	8.62	1000.0	120.000	178.0	H	106.0	90.0	23.2

6. Radiated field strength measurements (1GHz to 25 GHz)

Diagram No:4.01_WLAN 802.11_TX_b-mode_BW 20 MHz CH11_1Mbps

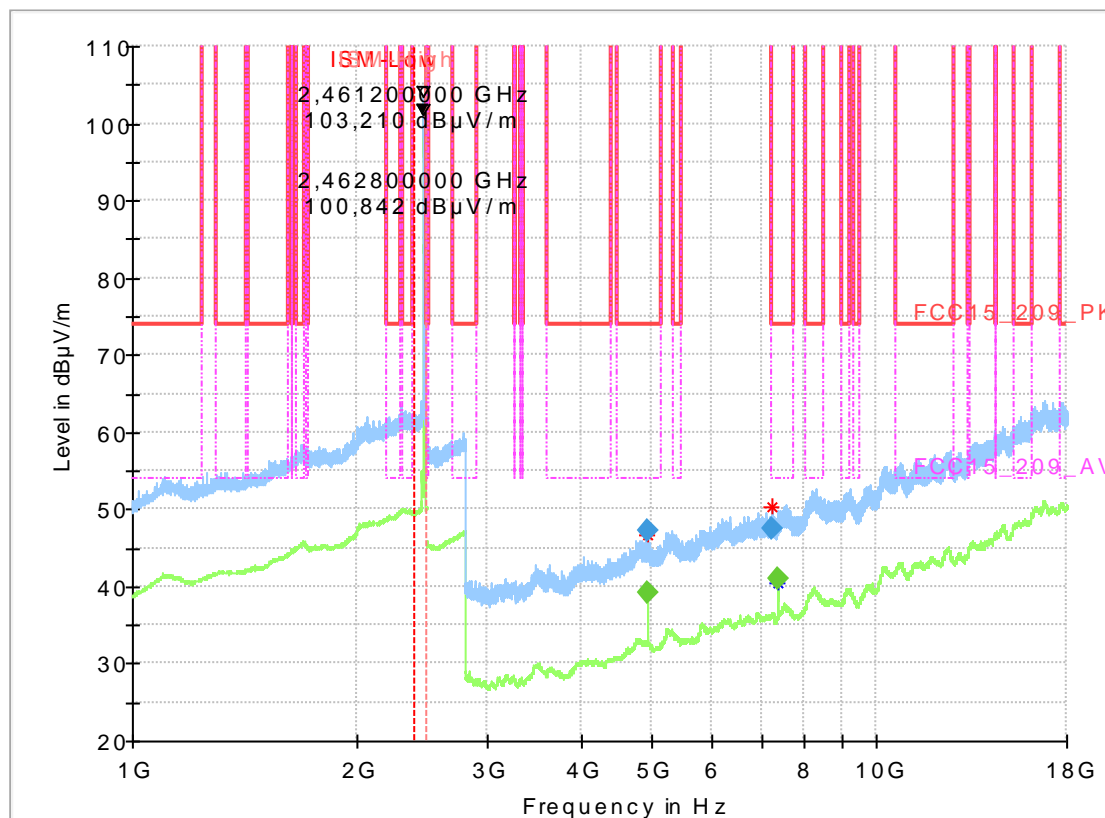
Common Information

Test Description:	Radiated field strength emission in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 4
Antenna polarisation:	horizontal/vertical
Environmental Conditions:	Humidity:28%RH; Temperature: 23°C
Operation mode:	TX-on WLAN 802.11 b-mode, BW 20 MHz channel 11; Data rate 1 Mbps
Operator Name:	KMo

EUT Information

Manufacturer:	Datalogic ADCL S.r.l.
MODEL:	JOYA TOUCH
EuT Type:	P00AN04HL0HT0W7-GR0
P/N:	911350015
S/N:	Z16P00044
HW Version:	Beta HW Version
SW Version:	WEC7
Firmware Version:	2.16
Input:	Fully Charged Internal Battery

Full Spectrum



Final_Result

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Elevation (deg)
4924.000000	---	39.09	54.00	14.91	100.0	1000.000	155.0	V	226.0	90.0
4924.000000	47.14	---	74.00	26.86	100.0	1000.000	155.0	V	212.0	90.0
7226.880000	47.47	---	74.00	26.53	100.0	1000.000	155.0	V	136.0	0.0
7386.760000	---	41.08	54.00	12.92	100.0	1000.000	155.0	V	234.0	90.0

(continuation of the "Final_Result" table from column 16 ...)

Frequency (MHz)	Correction
4924.000000	4.4
4924.000000	4.4
7226.880000	10.7
7386.760000	10.8

Diagram No:4.01a_WLAN 802.11_TX_b-mode_BW 20 MHz CH11_1Mbps

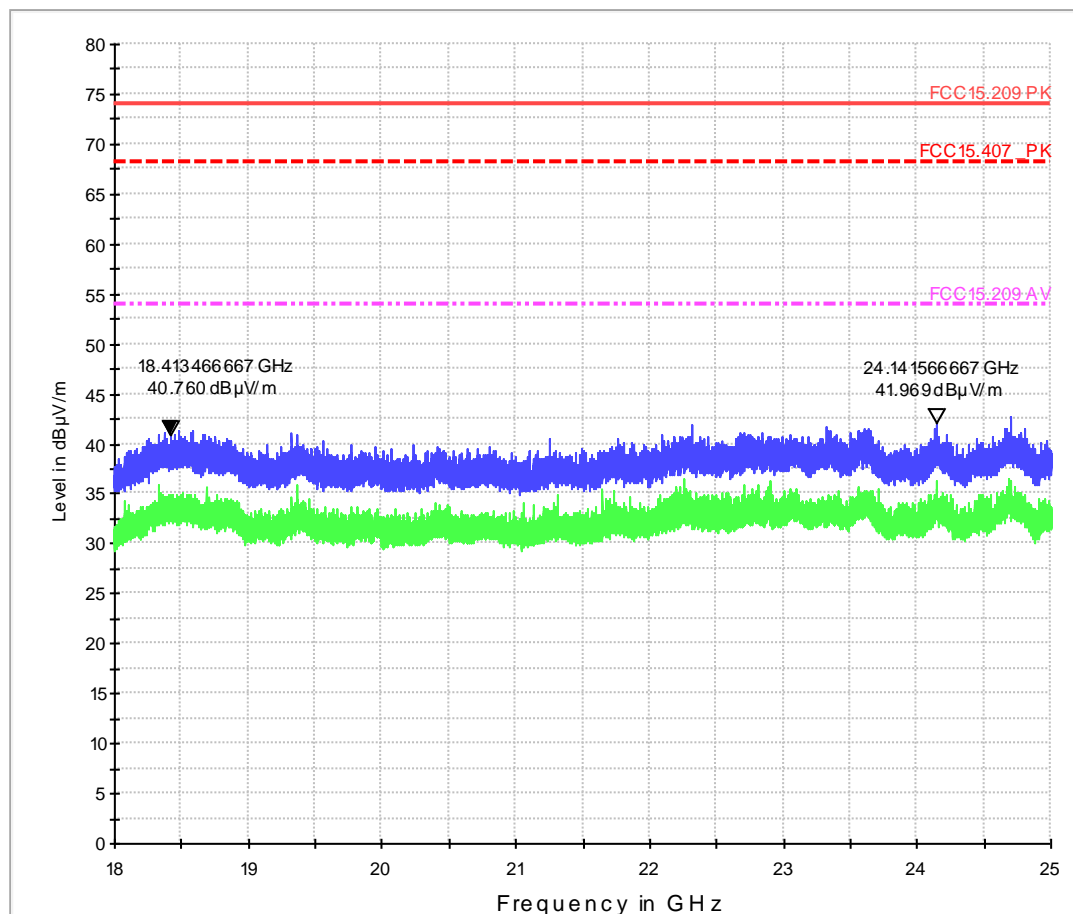
Common Information

Test Description:	Radiated field strength emission in 1m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.247, 15.205&15.209 Intentional Radiator
Antenna polarisation:	horizontal/vertical
Distance correction factor	3 to 1m: -10.5 dB applying to measurement results
SW-Version:	EMC32 V8.53.0
Operation mode:	TX mode continuous
Operator Name:	TFr
Comment:	Channel no. low/middle/high

EUT Information

Manufacturer:	Datalogic ADCL S.r.l.
MODEL:	JOYA TOUCH
EuT Type:	P00AN04HL0HT0W7-GR0
P/N:	911350015
S/N:	Z16P00044
HW Version:	Beta HW Version
SW Version:	WEC7
Firmware Version:	2.16
Input:	Fully Charged Internal Battery

FCC_Sweep_15.247_18_25GHz_Pre



7. Radiated Band-Edge Measurements accord. §15.209 & §15.205

7.1. Channel 1 b-Mode (left band edge)

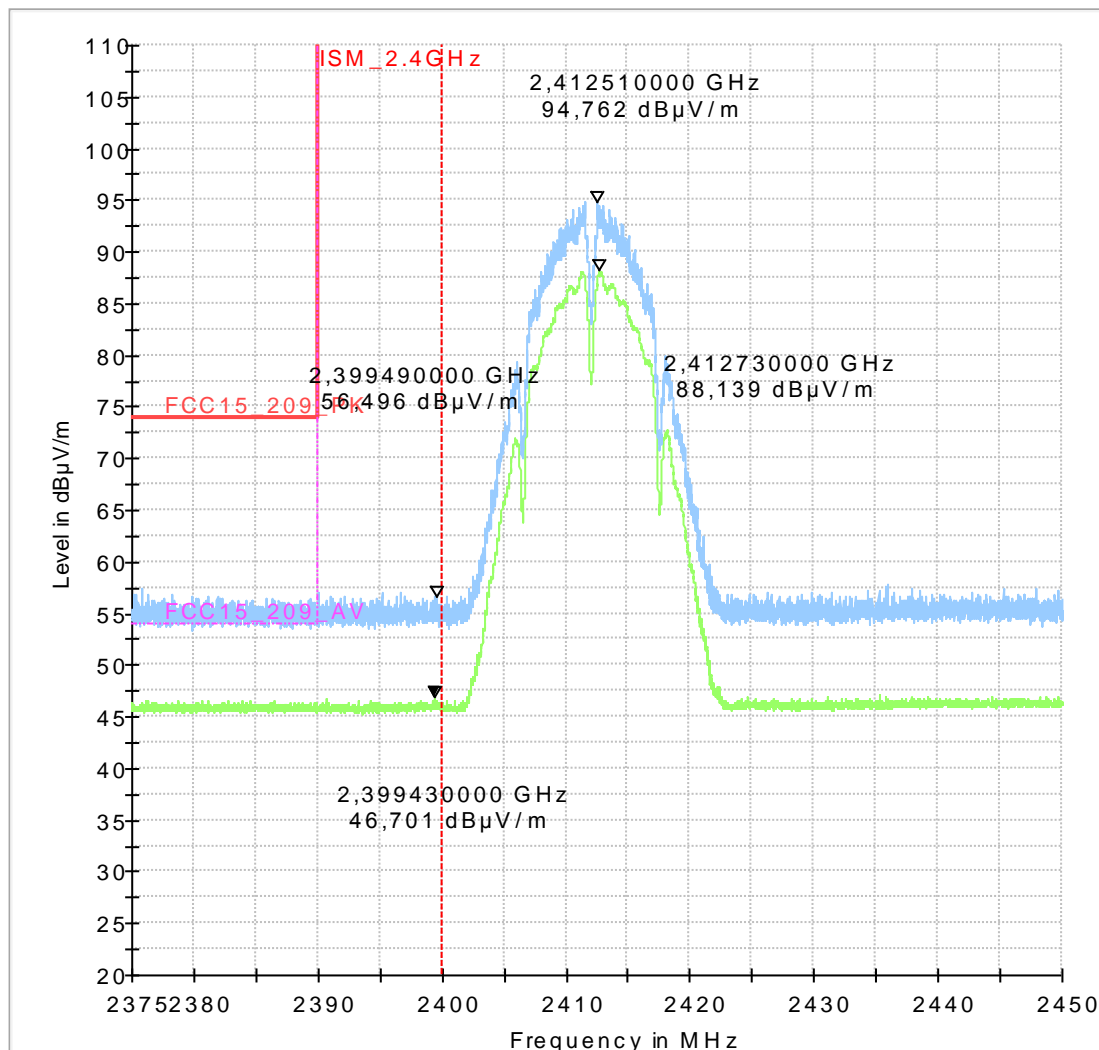
9.01_BE_Low_TX_b-mode_BW 20 MHz CH1_1Mbps

Common Information

Test Description:	Band-Edge: Radiated Field Strength Emissions in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 4
Antenna polarisation:	horizontal/vertical
Operation mode:	TX-on WLAN 802.11 b-mode, BW 20 MHz channel 1; Data rate 1Mbps
Operator Name:	KMo
Environmental Conditions	Humidity: 38%rH; Temperature: 22°C

EUT Information

Manufacturer:	Datalogic ADCL S.r.l.
MODEL:	JOYA TOUCH
EuT Type:	P00AN04HL0HT0W7-GR0
P/N:	911350015
S/N:	Z16P00044
HW Version:	Beta HW Version
SW Version:	WEC7
Firmware Version:	2.16
Input:	Fully Charged Internal Battery



7.2. Channel 11 b-Mode (right band edge)

Diagram No.: 9.02_BE_High_TX_b-mode_BW 20 MHz CH11_1Mbps_

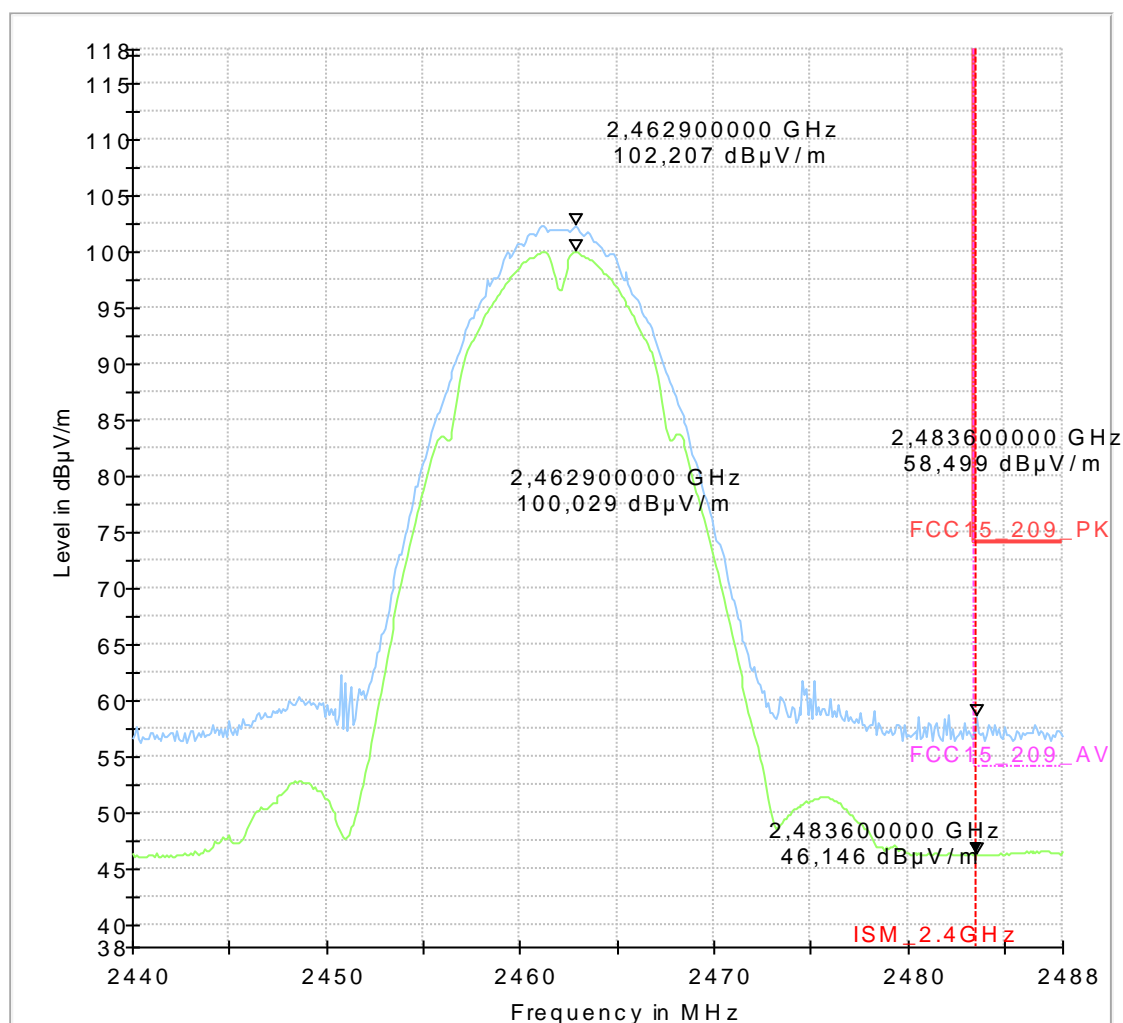
Common Information

Test Description:	Band-Edge: Radiated Field Strength Emissions in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 4
Antenna polarisation:	horizontal/vertical
Operation mode:	TX-on WLAN 802.11 b-mode, BW 20 MHz channel 11; Data rate 1Mbps
Environment Conditions:	Humidity: 38%rH; Temperature: 22°C
Operator Name:	KMo

EUT Information

Manufacturer:	Datalogic ADCL S.r.l.
MODEL:	JOYA TOUCH
EuT Type:	P00AN04HL0HT0W7-GR0
P/N:	911350015
S/N:	Z16P00044
HW Version:	Beta HW Version
SW Version:	WEC7
Firmware Version:	2.16
Input:	Fully Charged Internal Battery

Full Spectrum



7.3. Channel 1 g-Mode (left band edge)

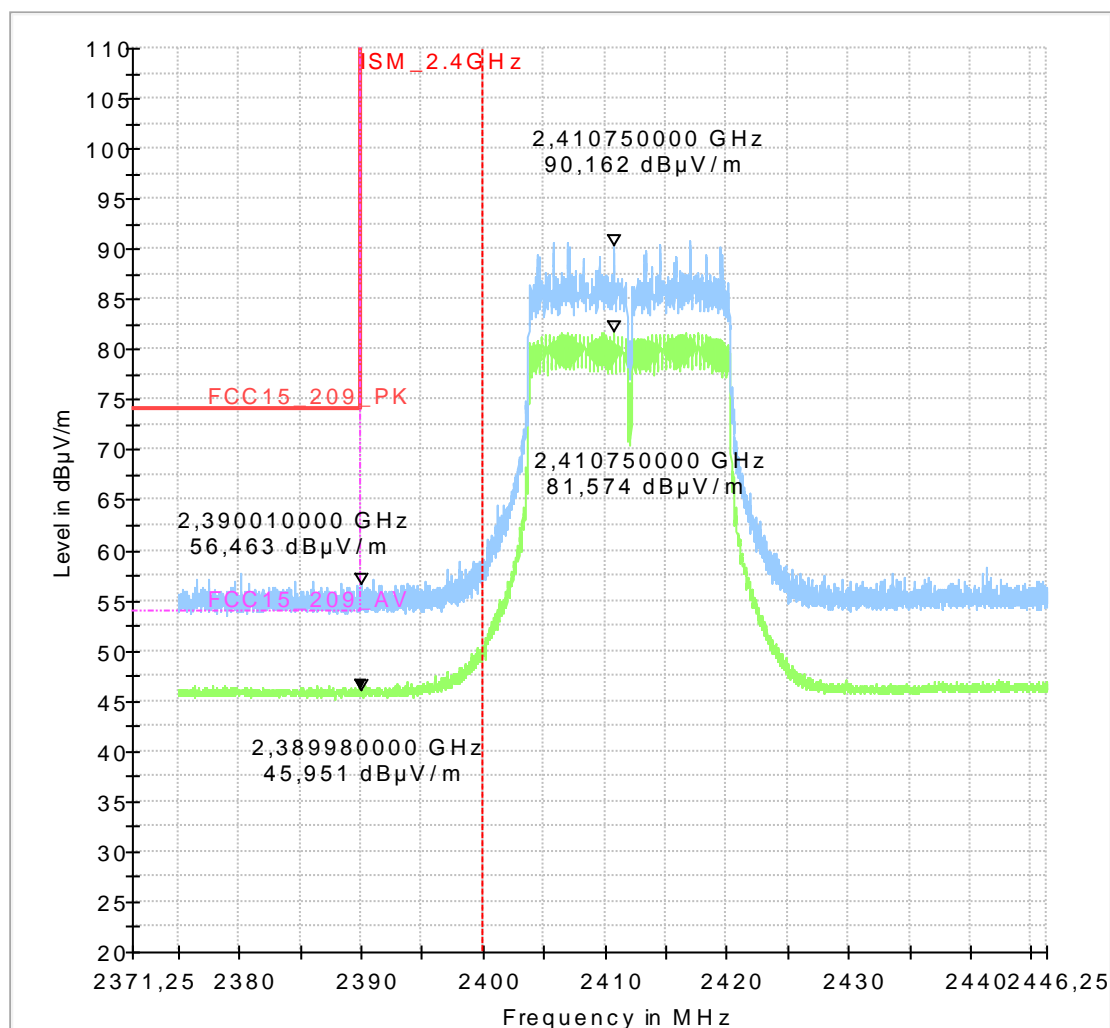
9.03_BE_Low_TX_g-mode_BW 20 MHz CH1_6Mbps_reduced power levels

Common Information

Test Description:	Band-Edge: Radiated Field Strength Emissions in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 4
Antenna polarisation:	horizontal/vertical
Operation mode:	TX-on WLAN 802.11 g-mode, BW 20 MHz channel 1; Data rate 6Mbps
Operator Name:	APh
Environmental Conditions	Humidity: 38%rH; Temperature: 22°C

EUT Information

Manufacturer:	Datalogic ADCL S.r.l.
MODEL:	JOYA TOUCH
EuT Type:	P00AN04HL0HT0W7-GR0
P/N:	911350015
S/N:	Z16P00044
HW Version:	Beta HW Version
SW Version:	WEC7
Firmware Version:	2.16
Input:	Fully Charged Internal Battery



7.4. Channel 11 g-Mode (right band edge)

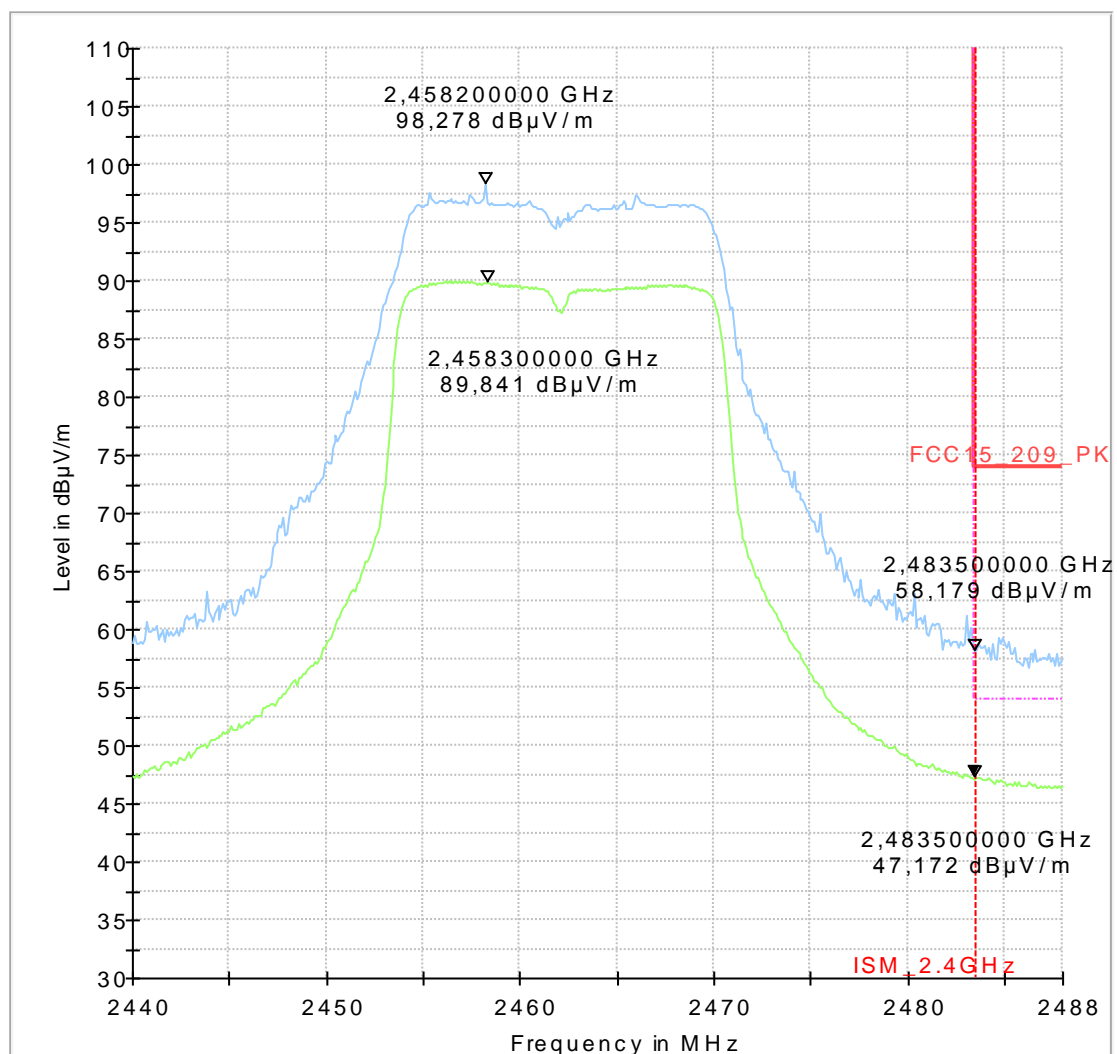
Diagram No.: 9.04_BE_High_TX_g-mode_BW 20 MHz CH11_6Mbps

Common Information

Test Description:	Band-Edge: Radiated Field Strength Emissions in 3m distance
Test Site:	Ref. Nr. 443 Fully Anechoic Room (FAR)
Test Standard:	FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 4
Antenna polarisation:	horizontal/vertical
Operation mode:	TX-on WLAN 802.11 g-mode, BW 20 MHz channel 11; Data rate 6 Mbps
Environment Conditions	Humidity: 32%rH; Temperature: 22°C
Operator Name:	APh

EUT Information

Manufacturer:	Datalogic ADCL S.r.l.
MODEL:	JOYA TOUCH
EuT Type:	P00AN04HL0HT0W7-GR0
P/N:	911350015
S/N:	Z16P00044
HW Version:	Beta HW Version
SW Version:	WEC7
Firmware Version:	2.16
Input:	Fully Charged Internal Battery



7.5. Channel 1 n-Mode(HT20) (left band edge)

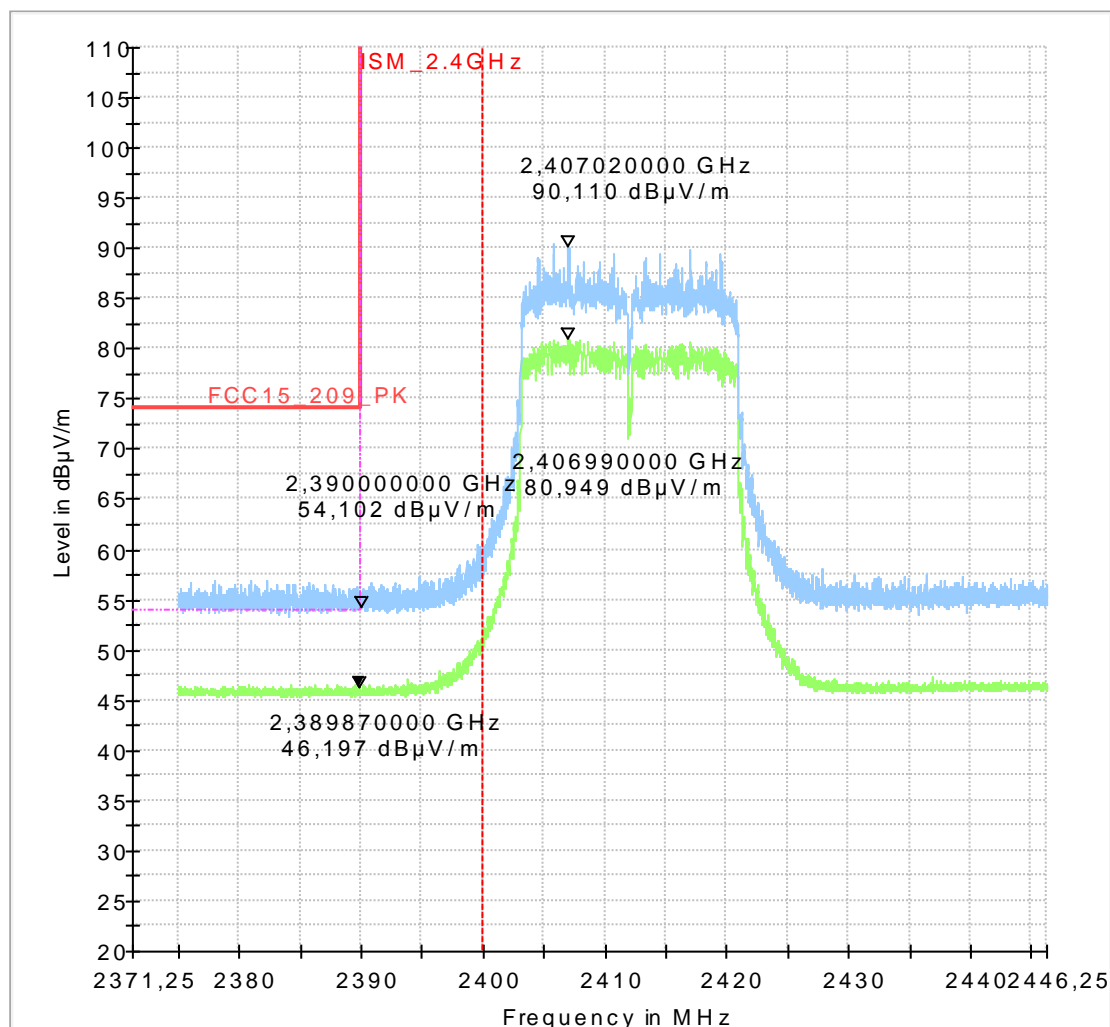
9.05_BE_Low_TX_n-mode_BW 20 MHz CH1_MCS0

Common Information

Test Description:	Band-Edge: Radiated Field Strength Emissions in 3m distance
Test Site:	CETECOM GmbH Essen
Test Standard:	FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 4
Antenna polarisation:	horizontal/vertical
Operation mode:	TX-on WLAN 802.11 g-mode, BW 20 MHz channel 1; Data rate 6Mbps
Operator Name:	Aph
Environmental Conditions	Humidity: 38%rH; Temperature: 22°C

EUT Information

Manufacturer:	Datalogic ADCL S.r.l.
MODEL:	JOYA TOUCH
EuT Type:	P00AN04HL0HT0W7-GR0
P/N:	911350015
S/N:	Z16P00044
HW Version:	Beta HW Version
SW Version:	WEC7
Firmware Version:	2.16
Input:	Fully Charged Internal Battery



7.6. Channel 11 n-Mode(HT20) (right band edge)

Diagram No.: 9.06_BE_High_TX_n-mode_BW 20 MHz CH11_MCS0

Common Information

Test Description:	Band-Edge: Radiated Field Strength Emissions in 3m distance
Test Site:	Ref. Nr. 443 Fully Anechoic Room (FAR)
Test Standard:	FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 4
Antenna polarisation:	horizontal/vertical
Operation mode:	TX-on WLAN 802.11 n-mode, BW 20 MHz channel 11; Data rate MCS0
Environment Conditions	Humidity: 32%rH; Temperature: 22°C
Operator Name:	APh

EUT Information

Manufacturer:	Datalogic ADCL S.r.l.
MODEL:	JOYA TOUCH
EuT Type:	P00AN04HL0HT0W7-GR0
P/N:	911350015
S/N:	Z16P00044
HW Version:	Beta HW Version
SW Version:	WEC7
Firmware Version:	2.16
Input:	Fully Charged Internal Battery

