

FCC PART 90



TEST AND MEASUREMENT REPORT

For

Teltronic S.A.U.

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FCC ID: WT7PTMDT500760B Model: MDT-500 763-870 MHz

Report Type: Original Report		Product Type: Land-Mobile and Fixed Radio Transmitter and Receiver
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DOCUMENT REVISION HISTORY

Revision Number Report Number		Description of Revision	Date of Revision
0	R1212274-90	Original Report	2013-03-20

1. General Information

1.1 Product Description for Equipment Under Test (EUT)

This test and measurement report was prepared on behalf of *Teltronic S.A.U.* and their product, FCC ID: WT7PTMDT500760B, model: MDT-500 763-870 MHz, which will henceforth be referred to as the EUT (Equipment Under Test). The EUT is a land-mobile and fixed radio transmitter and receiver with GPS receiver.

Specifications			
	C4FM: 769-775 MHz / 799-805 MHz D-LMR: 769-775 MHz / 799-805 MHz / 806-824 MHz / 851-869 MHz		
Frequency Band	TETRA: 809-824 MHz / 854-869 MHz FM: 806-824 MHz / 851-869 MHz		
Madulation Trues	C4FM FM		
Modulation Type	D-LMR: $\pi/4$ -DQPSK, TDMA 4 slots TETRA: $\pi/4$ -DQPSK, TDMA 4 slots		
Emission Designator	C4FM: 8K10F1E, 8K10F1D, 8K10F1W FM: 14K0F3E, 16K0F3E		
	D-LMR: 20K0D7W, 20K0D7E, 20K0D7D, 20K0Q7W, 20K0Q7E, 20K0Q7D TETRA: 22K0D7W, 22K0D7E, 22K0D7D, 22K0Q7W, 22K0Q7E, 22K0Q7D		
RF Output Power	TETRA, D-LMR, C4FM, FM: 1 Watt (High Power) TETRA, D-LMR: 0.03 Watt (Low Power) C4FM, FM: 0.3 Watt (Low Power)		
Channel Spacing	C4FM: 12.5 kHz FM: 20 KHz, 25 KHz D-LMR, TETRA: 25 KHz		
Necessary /authorized Bandwidth	C4FM: 8.1 KHz (Necessary BW) / 11.25 KHz (Authorized BW) FM: 14 KHz (Necessary BW) / 20 KHz (Authorized BW) 16 KHz (Necessary BW) / 20 KHz (Authorized BW) D-LMR: 20 KHz TETRA: 22 KHz		
Power Supply	13.2 DC volt supply input		

RF Channel Spacing for D-LMR and TETRA: 25 kHz (Spectrum Efficiency 6.25 kHz) Note: TDMA access scheme with 4 physical channels per carrier. The channel bandwidth is 25 kHz. As a result, the equipment meets the narrowbanding spectrum efficiency standard of one voice channel per 6.25 kHz of channel bandwidth. Modulation is π /4-DQPSK with 18 Ksym/sec. This modulation is based on transmitting two bits per symbol, so the data rate for each physical channel is 9000 bits per second (higher than narrowbanding standard of 4800 bps per 6.25 kHz of channel bandwidth).

1.2 Mechanical Description

The EUT measures approximately 21cm (L) x 16cm (W) x 5cm (H) and weighs 1675.5 g.

The test data gathered are from production sample. Serial number: 00018A031178900 provided by Teltronic S.A.U.

1.3 Objective

This type approval report is prepared on behalf of *Teltronic S.A.U.* in accordance with Part 90 and Rule & Order 12-114 of the Federal Communication Commissions rules.

The objective was to determine the RF output power, Occupied Bandwidth, Transmitter Spurious Emissions, Emission Mask and Frequency Stability are in compliance with the FCC rules.

1.4 Related Submittal(s)/Grant(s)

None

1.5 Test Methodology

All tests and measurements indicated in this document were performed in accordance with the Code of federal Regulations Title 47 Part 2, Sub-part J as well as the following individual parts:

Part 90 - Private Land Mobile Radio Service

Applicable Standards:TIA603-C and ANSI 63.4-2003, American National Standard for Method of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

All emissions measurement was performed by Bay Area Compliance Laboratories Corp. The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

1.6 Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in the field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

Based on CISPR16-4-2:2003, The Treatment of Uncertainty in EMC Measurements, the values ranging from ± 2.0 dB for Conducted Emissions tests and ± 4.0 dB for Radiated Emissions tests are the most accurate estimates pertaining to uncertainty of EMC measurements at BACL Corp.

1.7 Test Facility and Accreditation

The test site used by BACL Corp. to collect radiated and conducted emissions measurement data is located at its facility in Sunnyvale, California, USA.

The test site at BACL Corp. has been fully described in reports submitted to the Federal Communication Commission (FCC) and Voluntary Control Council for Interference (VCCI). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on February 11 and December 10, 1997, and Article 8 of the VCCI regulations on December 25, 1997. The test site also complies with the test methods and procedures set forth in CISPR 22:2008 §10.4 for measurements below 1 GHz and §10.6 for measurements above 1 GHz as well as ANSI C63.4-2003, ANSI C63.4-2009, TIA/EIA-603 & CISPR 24:2010.

The Federal Communications Commission and Voluntary Control Council for Interference have the reports on file and they are listed under FCC registration number: 90464 and VCCI Registration No.: A-0027. The test site has been approved by the FCC and VCCI for public use and is listed in the FCC Public Access Link (PAL) database.

Additionally, BACL Corp. is an American Association for laboratory Accreditation (A2LA) accredited laboratory (Lab Code 3297-02). The current scope of accreditations can be found at http://www.a2la.org/scopepdf/3297-02.pdf?CFID=1132286&CFTOKEN=e42a3240dac3f6ba-6DE17DCB-1851-9E57-477422F667031258&jsessionid=8430d44f1f47cf2996124343c704b367816b

2 System Test Configuration

2.1 Justification

The EUT was configured for testing according to TIA/EIA-603-C.

The EUT was tested in the normal (native) operating mode to represent *worst*-case results during the final qualification test.

2.2 EUT Exercise Software

The software used was tDriver USA F Approval Test 1.0.8.

2.3 Equipment Modifications

No modifications were made to the EUT.

2.4 Internal Configuration

Manufacturers	Descriptions	Models	Serial Numbers
Teltronic S.A.U.	Main Board	F077001	10849481
Teltronic S.A.U.	Interconnections Board	F077002	10880911
Teltronic S.A.U.	Host Board	F072001	10793507
Teltronic S.A.U.	GPS Board	F054203	10731687
Teltronic S.A.U.	Bridge Board	-	-

2.5 Local Support Equipment

Manufacturer	Description	Model No.	Serial No.
Dell	Laptop	PP05L	7T390 A02

2.6 Local Support Equipment Power Supply and Line Filters

Manufacturer Description		Model	Serial Number
BK Precision	DC Power Supply	1621A	D185052265
Minebea Matsushita Motor Corporation DC Fan		3610KL-04W-B50	11742

2.7 External I/O Cabling List and Details

Cable Description	Length (m)	From	То
Serial cable	>1.0	Laptop Serial port	EUT Serial Port
Power Supply Cable	>1.0	Power Supply	EUT
RF cable	>1.0	EUT Output	PSA

2.8 Test Setup Block Diagram



Conducted Test



3 **Summary of Test Results**

FCC Rules	Description of Tests	Results
FCC §1.1310, §2.1091	RF Exposure	Compliant
FCC §2.1046, §90.205	RF Output Power	Compliant
FCC §2.1047, §90.207	Modulation Characteristics, Audio Frequency Response and Audio Filter Response	Compliant ¹
FCC §2.1049, §90.209, §90.210	Occupied Bandwidth and Emission Mask	Compliant
FCC§2.1051,§90.210 §90.221	Spurious Emissions at Antenna Terminals	Compliant
FCC §2.1055, §90.213, §90.539	Frequency Stability	Compliant
FCC §2.1053, §90.210, §90.221, §90.543 (f)	Field Strength of Spurious Radiation 1559-1610 MHz Radiated Emissions (GNSS)	Compliant
FCC §90.214	Transient Frequency Behavior	N/A
FCC §2.1049, §90.221, §90.543	Adjacent Channel Power	Compliant

N/A: Not applicable.

Note 1: This test was completed by Teltronic S.A.U with test report: Modulation Characteristics: D370000 RG95ed0100 Laboratory Measurements Reference Guide

4 FCC §2.1091 - RF Exposure Information

4.1 Applicable Standards

FCC §2.1091, (a) Requirements of this section are a consequence of Commission responsibilities under the National Environmental Policy Act to evaluate the environmental significance of its actions. See subpart I of part 1 of this chapter, in particular §1.1307(b).

According to \$1.1310 and \$2.1091 RF exposure is calculated.

Limits for Exposure

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Averaging Time (minutes)
	(A) Limits for C	Occupational/Control	lled Exposure	
0.3-1.34	614	1.63	*(100)	6
1.34-30	1842/f	4.89/f	*(900/f ²)	6
30-300	61.4	0.163	1.0	6
300-1500	/	/	f/300	6
1500-100,000	/	/	5	6

f = frequency in MHz

* = Plane-wave equivalent power density

4.2 MPE Prediction

Prediction of MPE limit at a given distance, Equation from OET Bulletin 65, Edition 97-01

$S = PG/4\pi R^2$

Where: S = power density

P = power input to antenna

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the center of radiation of the antenna

Modulation: D-LMR Frequency: 769-775 MHz

Duty Cycle (TDMA 4 slots)	<u>25%</u>
Maximum peak output power at antenna input terminal (dBm):	<u>29.89</u>
Maximum peak output power at antenna input terminal (mW):	<u>974.990</u>
Prediction distance (cm):	<u>35</u>
Prediction frequency (MHz):	774.9
Maximum Antenna Gain, typical (dBi):	<u>15</u>
Maximum Antenna Gain (numeric):	31.62
Power density of prediction frequency at 35 cm (mW/cm ²):	0.501
MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²):	2.583

Modulation: Frequency:	D-LMR 799-805 MHz	
	Duty Cycle (TDMA 4 slots)	25%
	Maximum peak output power at antenna input terminal (dBm):	29.84
	Maximum peak output power at antenna input terminal (mW):	<u>963.829</u>
	Prediction distance (cm):	<u>35</u>
	Prediction frequency (MHz):	<u>804.9</u>
	<u>Maximum Antenna Gain, typical (dBi):</u>	<u>15</u>
	$\frac{Maximum Antenna Gain (numeric):}{Power density of prediction frequency at 25 cm (mW/cm2)}$	<u>31.62</u> 0.405
	MPE limit for uncontrolled exposure at prediction frequency (mW/cm^2) :	<u>0.495</u> 2.683
Modulation: Frequency:	D-LMR 806-824 MHz	
	Duty Cycle (TDMA 4 slots)	<u>25%</u>
	Maximum peak output power at antenna input terminal (dBm):	<u>29.83</u>
	Maximum peak output power at antenna input terminal (mW):	<u>961.612</u>
	Prediction distance (cm):	<u>35</u>
	Prediction frequency (MHz):	<u>815</u>
	<u>Maximum Antenna Gain, typical (dBi):</u>	<u>15</u> 21.62
	$\frac{Maximum Antenna Gain (numeric)}{Power density of prediction frequency at 35 cm (mW/cm2)}$	<u>31.62</u> 0.494
	MPE limit for uncontrolled exposure at prediction frequency (mW/cm^2) :	<u>0.494</u> 2.717
Modulation: Frequency:	D-LMR 851-869 MHz	
	Duty Cycle (TDMA 4 slots)	<u>25%</u>
	Maximum peak output power at antenna input terminal (dBm):	<u>29.62</u>
	Maximum peak output power at antenna input terminal (mW):	<u>916.220</u>
	Prediction distance (cm):	<u>35</u>
	<u>Prediction frequency (MHZ):</u> Maximum Antanna Cain, turical (dBi):	<u>868.9</u> 15
	Maximum Antenna Gain, typical (dB1):	<u>15</u> 31.62
	Power density of prediction frequency at 35 cm (mW/cm ²):	$\frac{31.02}{0.471}$
	<u>MPE limit for uncontrolled exposure at prediction frequency (mW/cm^2):</u>	2.896
Modulation: Frequency:	TETRA 809-824 MHz	
	Duty Cycle (TDMA 4 slots)	25%
	Maximum peak output power at antenna input terminal (dBm):	<u>29.73</u>
	Maximum peak output power at antenna input terminal (mW):	939.723
	Prediction distance (cm):	35
	Prediction frequency (MHz):	<u>809.1</u>
	Maximum Antenna Gain, typical (dBi):	<u>15</u>
	Maximum Antenna Gain (numeric):	<u>31.62</u>
	Power density of prediction frequency at 35 cm (mW/cm ²):	<u>0.483</u>
	MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²):	<u>2.697</u>

Modulation:	TETRA 854-869 MH7				
Frequency.	034-007 WIIIZ				
	Duty Cycle (TDMA 4 slots)	<u>25%</u>			
	Maximum peak output power at antenna input terminal (dBm):	<u>29.9</u> 077 227			
	Maximum peak output power at antenna input terminal (mw):	<u>911.231</u> 25			
	Prediction frequency (MHz):	<u>35</u> 860			
	Maximum Antenna Gain, typical (dBi):	<u>800</u> 15			
	Maximum Antenna Gain (numeric):	<u>15</u> 31.623			
	Power density of prediction frequency at 35 cm (mW/cm ²):	0.502			
	MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²):	<u>2.867</u>			
Modulation:	C4FM				
Frequency:	769-775 MHz				
	Duty Cycle	<u>100%</u>			
	Maximum peak output power at antenna input terminal (dBm):	<u>30.8</u>			
	Maximum peak output power at antenna input terminal (mW):	1202.264			
	Prediction distance (cm):	<u>35</u>			
	Prediction frequency (MHz):	<u>772</u>			
	Maximum Antenna Gain, typical (dBi):	<u>15</u>			
	<u>Maximum Antenna Gain (numeric):</u>	<u>31.62</u>			
	<u>Power density of prediction frequency at 55 cm (mW/cm)</u> : MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²):				
	MPE mint for uncontrolled exposure at prediction frequency (mw/cm).	2.375			
Modulation:	C4FM 700 805 MHz				
Frequency.	7 77-8 05 WIIIZ				
	Duty Cycle	<u>100%</u>			
	Maximum peak output power at antenna input terminal (dBm):	<u>30.94</u> 1241 652			
	Maximum peak output power at antenna input terminal (mw):	<u>1241.052</u> 35			
	Prediction frequency (MHz):	<u>35</u> 802			
	Maximum Antenna Gain typical (dBi):	<u>15</u>			
	Maximum Antenna Gain (numeric):	<u>10</u> 31.623			
	Power density of prediction frequency at $35 \text{ cm} (\text{mW/cm}^2)$:	2.551			
	MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²):	<u>2.673</u>			
Modulation: Frequency:	FM (channel spacing 20 KHz) 806-824 MHz				
	Duty Cycle	100%			
	Maximum peak output power at antenna input terminal (dBm):	30.37			
	Maximum peak output power at antenna input terminal (mW):	1088.930			
	Prediction distance (cm):	<u>35</u>			
	Prediction frequency (MHz):	806.1			
	Maximum Antenna Gain, typical (dBi):	<u>15</u>			
	Maximum Antenna Gain (numeric):	<u>31.62</u>			
	Power density of prediction frequency at 35 cm (mW/cm ²):	<u>2.237</u>			
	MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²):	<u>2.687</u>			

Modulation: Frequency:	FM (channel spacing 20 KHz) 851-869 MHz				
	Duty Cycle	100%			
	Maximum peak output power at antenna input terminal (dBm):	30.43			
	Maximum peak output power at antenna input terminal (mW):	<u>1104.079</u>			
	Prediction distance (cm):	<u>35</u>			
	Prediction frequency (MHz):	<u>851.1</u>			
	Maximum Antenna Gain, typical (dBi):	<u>15</u>			
	Maximum Antenna Gain (numeric):	<u>31.62</u>			
	Power density of prediction frequency at 35 cm (mW/cm ²):	<u>2.268</u>			
	MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²):	<u>2.837</u>			
Modulation: Frequency:	FM (channel spacing 25 KHz) 806-824 MHz				
	Duty Cycle	100%			
	Maximum peak output power at antenna input terminal (dBm):				
	Maximum peak output power at antenna input terminal (mW):				
	Prediction distance (cm):				
	Prediction frequency (MHz):				
	Maximum Antenna Gain, typical (dBi):				
	Maximum Antenna Gain (numeric):	<u>31.62</u>			
	Power density of prediction frequency at 35 cm (mW/cm ²):	<u>2.232</u>			
	MPE limit for uncontrolled exposure at prediction frequency (mW/cm ²):	<u>2.687</u>			
Modulation: Frequency:	FM (channel spacing 25 KHz) 851-869 MHz				
	Duty Cycle	100%			
	Maximum peak output power at antenna input terminal (dBm):	30.45			
	Maximum peak output power at antenna input terminal (mW):	<u>1109.175</u>			
	Prediction distance (cm):	<u>35</u>			
	Prediction frequency (MHz):	<u>868.9</u>			
	Maximum Antenna Gain, typical (dBi):	<u>15</u>			
	Maximum Antenna Gain (numeric):	<u>31.62</u>			
	Power density of prediction frequency at 35 cm (mW/cm^2) :	<u>2.279</u>			
	MPE limit for uncontrolled exposure at prediction frequency (mW/cm^2) :	2.896			

Conclusion

The device complies with the MPE requirements by providing a safe separation distance of at least 35 cm between the antenna with maximum 15 dBi gain, including any radiating structure, and any persons when normally operated.

5 FCC §2.1046 & §90.205– RF Output Power

5.1 Applicable Standard

According to FCC §2.1046, and §90.205. The transmitting power of base transmitters must not exceed the limits given in paragraphs (a), (b) and (c) of §90.635.

(a) The effective radiated power and antenna height for base stations may not exceed 1 kilowatt (30 dBw) and 304 m. (1,000 ft.) above average terrain (AAT), respectively, or the equivalent thereof as determined from the Table. These are maximum values, and applicants will be required to justify power levels and antenna heights requested.

(b) The maximum output power of the transmitter for mobile stations is 100 watts (20 dBw).

5.2 Test Procedure

The RF output of the transmitter was connected to the input of the spectrum analyzer through sufficient attenuation.

5.3 Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Interval
Agilent	Spectrum Analyzer	E4440A	MY44303352	2012-10-16	1 Year

Statement of Traceability: **BACL Corp.** attests that all calibrations have been performed according to A2LA requirements, traceable to the NIST.

5.4 Test Environmental Conditions

Temperature:	20.6 °C
Relative Humidity:	52 %
ATM Pressure:	101.3 kPa

The testing was performed by Lionel Lara on 2013-02-07 at the RF site.

Teltronic S.A.U.

5.5 Test Results

763-806 MHz

Test Mode: 25kHz Channel Spacing, D-LMR

FCC Band	Frequency (MHz)	High Output Power (dBm)	High Output Power (Watt)	Low Output Power (dBm)	Low Output Power (Watt)
	769.1	29.78	0.95	14.32	0.027
769-775 MHz	772	29.19	0.83	14.25	0.027
	774.9	29.89	0.97	14.49	0.028
799-805 MHz	799.1	29.17	0.83	14.75	0.030
	802	29.28	0.85	15.07	0.032
	804.9	29.84	0.96	14.39	0.027

Note: Manufacturer's rated power is 0.03-1 Watts

Test Mode: 12.5 kHz Channel Spacing, C4FM

FCC Band	Frequency (MHz)	High Output Power (dBm)	High Output Power (Watt)	Low Output Power (dBm)	Low Output Power (Watt)
	769.1	29.27	0.85	25.04	0.32
769-775 MHz	772	30.8	1.20	24.23	0.26
	774.9	29.09	0.81	25.01	0.32
799-805 MHz	799.1	29.4	0.87	25.24	0.33
	802	30.94	1.24	25.51	0.36
	804.9	30.73	1.18	24.46	0.28

Note: Manufacturer's rated power is 0.3-1 Watts

806-870 MHz

Test Mode: 25kHz Channel Spacing, TETRA

FCC Band	Frequency (MHz)	High Output Power (dBm)	High Output Power (Watt)	Low Output Power (dBm)	Low Output Power (Watt)
	809.1	29.73	0.94	14.73	0.030
809-824 MHz	815	29.34	0.86	14.86	0.031
	823.9	29.52	0.90	14.73	0.030
854-869 MHz	854.1	29.88	0.97	14.8	0.030
	860	29.9	0.98	14.54	0.028
	868.9	29.55	0.90	15.16	0.033

Note: Manufacturer's rated power is 0.03-1 Watts

Test Mode: 25kHz Channel Spacing, D-LMR

FCC Band	Frequency (MHz)	High Output Power (dBm)	High Output Power (Watt)	Low Output Power (dBm)	Low Output Power (Watt)
	806.1	29.51	0.89	14.59	0.029
806-824 MHz	815	29.83	0.96	14.58	0.029
	823.9	29.26	0.84	14.09	0.026
851-869 MHz	851.1	29.56	0.90	14.34	0.027
	860	29.51	0.89	14.68	0.029
	868.9	29.62	0.92	14.75	0.030

Note: Manufacturer's rated power is 0.03-1 Watts

Test Mode: 20kHz Channel Spacing, FM

FCC Band	Frequency (MHz)	High Output Power (dBm)	High Output Power (Watt)	Low Output Power (dBm)	Low Output Power (Watt)
	806.1	30.37	1.09	25.04	0.32
806-824 MHz	815	29.36	0.86	25.04	0.32
	823.9	29.34	0.86	25	0.32
851-869 MHz	851.1	30.43	1.10	25.09	0.32
	860	29.48	0.89	25.12	0.33
	868.9	29.47	0.89	25.11	0.32

Note: Manufacturer's rated power is 0.3-1 Watts

Test Mode: 25kHz Channel Spacing, FM

FCC Band	Frequency (MHz)	High Output Power (dBm)	High Output Power (Watt)	Low Output Power (dBm)	Low Output Power (Watt)
806-824 MHz	806.1	30.36	1.09	25.01	0.32
	815	29.33	0.86	25.1	0.32
	823.9	29.36	0.86	24.1	0.26
851-869 MHz	851.1	29.5	0.89	24.19	0.26
	860	29.53	0.90	24.15	0.26
	868.9	30.45	1.11	24.18	0.26

Note: Manufacturer's rated power is 0.3-1 Watts

6 FCC §2.1047 & §90.207 – Modulation Characteristic

6.1 Applicable Standard

FCC §2.1047 & §90.207:

- (a) Equipment which utilizes voice modulated communication shall show the frequency response of the audio modulating circuit over a range of 100 to 5000 Hz. For equipment which is required to have a low pass filter, the frequency response of the filter, or all of the circuitry installed between the modulation limited and the modulated stage shall be supplied.
- (b) Equipment which employs modulation limiting, a curve showing the percentage of modulation versus the modulation input voltage shall be supplied.

Manufacturer	Description	Model	Serial Number	Calibratio n Date	Calibration Cycle
AGILENT	RF Generator	E4438C	MY450935 71	12/03/2012	2 years
ROHDE&SCHWA RZ	Radiocommunication Service Monitor	CMS54	846393/018	18/02/2012	2 years
XANTREX	Power Supply	XFR 100-28	E00132443	18/02/2012	3 years

6.2 Test Equipment List and Details

6.3 Test Environmental Conditions

Temperature:	25.1°C
Relative Humidity:	37.2%
ATM Pressure:	102.6 kPa

The testing was performed by Denny Soto on 2012-11-07 at Teltronic S.A.U.

6.4 Test Results

TETRA and D-LMR Transmitter Low Pass Filter

Type of Emission:

D-LMR: 20K0Q7E, 20K0Q7D, 20K0Q7W, 20K0D7E, 20K0D7D, 20K0D7W TETRA: 22K0Q7E, 22K0Q7D, 22K0Q7W, 22K0D7E, 22K0D7D, 22K0D7W The modulation used is π /4-shifted Differential Quaternary Phase Shift Keying (π /4-DQPSK), with a modulation rate of 18k symbol/sec. (36k bit/sec).

A root-raised-cosine filter (RRC) is used as transmitting and receiving filter in this digital communication system to perform matched filtering. The combined response of two such filters is that of the raised-cosine filter. The raised-cosine filter is a filter frequently used for pulse-shaping in digital modulation known for its ability to minimize intersymbol interference (ISI).

The access scheme is TDMA with 4 physical channels per carrier.

The following graph is the transfer function of the aforementioned filter for D-LMR modulation.





The following graph is the transfer function of the aforementioned filter for TETRA modulation.



Note: Plot was provided by the manufacturer.

Audio Low Pass Filter

The modulation is limited by data characteristics and its filters.

In the previous section, the phase and quadrature branches (I and Q) are filtered with a root-raisedcosine filter (RRC) with a symbol rate of 18k symbol/sec. After that, the signal is pi/4 DQPSK modulated (see the plot in the previous section) for D-LMR and TETRA modulations.

The signal processing is carried out using a digital filter implemented in the OMAP processor. The next picture shows its frequency response, which is valid for all modulations



Note: Plot was provided by the manufacturer.

FM Modulation Limiting vs. Voltage

806-824 MHz, FM (20 kHz)





806-824 MHz, FM (25 kHz)

Middle Channel



851-869 MHz, FM (20 kHz)



851-869 MHz, FM (25 kHz)

Middle Channel



FM Audio Frequency Response

806-824 MHz, FM (20 kHz)

Middle Channel



806-824 MHz, FM (25 kHz)

Middle Channel



851-869 MHz, FM (20 kHz)

Middle Channel



851-869 MHz, FM (25 kHz)





7 FCC §2.1049, §90.209 & §90.210 – Occupied Bandwidth & Emission Mask

7.1 Applicable Standard

According to FCC §90.210:

Frequency band (MHz)	Mask for equipment with Audio low pass filter	Mask for equipment without audio low pass filter	
Below 25 ¹	A or B	A or C	
25-50	В	С	
72-76	В	С	
150-174 ²	B, D, or E	C, D, or E	
150 Paging-only	В	С	
220-222	F	F	
421-512 ²	B, D, or E	C, D, or E	
450 Paging-only	В	G	
806-809/851-854	В	Н	
809-824/854-869 ³	В	G	
896-901/935-940	Ι	J	
902-928	К	К	
929-930	В	G	
4940-4990 MHz	L or M	L or M.	
5850-5925 ⁴			
All other bands	В	С	

1 Equipment using single sideband J3E emission must the requirements of Emission Mask A. Equipment using other emissions must meet the requirements of Emission Mask B or C, as applicable.

2 Equipment designed to operate with a 25 kHz channel bandwidth must meet the requirements of Emission Mask B or C, as applicable. Equipment designed to operate with a 12.5 kHz channel bandwidth must meet the requirements of Emission Mask D, and equipment designed to operate with a 6.25 kHz channel bandwidth Must meet the requirements of Emission Mask E.

3 Equipment used in this licensed to EA or non-EA systems shall comply with the emission mask provisions of § 90.691.

4 DSRCS Roadside Units equipment in the 5850-5925 MHz band is governed under subpart M of this part.

5 Equipment may alternatively meet the Adjacent Channel Power limits of § 90.221, where applicable.

Teltronic S.A.U.

Emission Mask B:

For transmitters that are equipped with an audio low-pass filter, the power of any emission must be attenuated below the unmodulated carrier power (P) as follows:

(1) On any frequency removed from the assigned frequency by more than 50 percent, but not more than 100 percent of the authorized bandwidth: At least 25 dB.

(2) On any frequency removed from the assigned frequency by more than 100 percent, but not more than 250 percent of the authorized bandwidth: At least 35 dB.

(3) On any frequency removed from the assigned frequency by more than 250 percent of the authorized bandwidth: At least $43 + 10 \log (P) dB$.

Emission Mask EA:

(a) Out-of-band emission requirement shall apply only to the "outer" channels included in an EA license and to spectrum adjacent to interior channels used by incumbent licensees. The emission limits are as follows:

(1) For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 116 Log10(f/6.1) decibels or 50 + 10 Log10(P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.

(2) For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 43 + 10Log10(P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

7.2 Test Procedure

The RF output of the transmitter was connected to the input of the spectrum analyzer through sufficient attenuation.

Occupied Bandwidth:

- •...<u>C4FM</u>: The resolution bandwidth of the spectrum analyzer was set at 100 Hz and the spectrum was recorded in the frequency band ±20 KHz from the carrier frequency
- ... <u>FM</u>: The resolution bandwidth of the spectrum analyzer was set at 200 Hz and the spectrum was recorded in the frequency band ±30 KHz from the carrier frequency.
- ... <u>D-LMR, TETRA:</u> The resolution bandwidth of the spectrum analyzer was set at 300 Hz and the spectrum was recorded in the frequency band ±30 KHz from the carrier frequency.

7.3 Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Interval
Agilent	Spectrum Analyzer	E4440A	MY44303352	2012-10-16	1 Year

Statement of Traceability: **BACL Corp.** attests that all calibrations have been performed according to A2LA requirements, traceable to the NIST.

7.4 Test Environmental Conditions

Temperature:	18.9-20.6 °C
Relative Humidity:	52-53 %
ATM Pressure:	101.1-101.3 kPa

The testing was performed by Lionel Lara on 2013-02-07 and 2013-02-16 in the RF Site.

7.5 Test Results

Please refer to the following plots.

Occupied Bandwidth (High Power)

769-775 MHz, D-LMR

🔆 Agilent BW/Avg Res BW 300.0 Hz <u>Man</u> Ch Freq 772 MHz Trig Free Auto Occupied Bandwidth Video BW Average 10 910.0 Hz Auto Man Ref 32 dBm Atten 40 dB VBW/RBW #Avg 3.00000 Log Auto Man ۵ 10 Average dB/ Offst 10.4 10 Off <u>0n</u> βB Avg/VBW Type Pwr (RMS) Center 772.000 0 MHz #Res BW 300 Hz Span 60 kĤz <u>Auto</u> Man Sweep 2.013 s (601 pts) VBW 910 Hz Occupied Bandwidth Occ BW % Pwr 99.00 % -26.00 dB x dB 19.1426 kHz Span/RBW **Transmit Freq Error** -210.564 Hz 106 <u>Man</u> x dB Bandwidth 21.398 kHz* Auto Copyright 2000-2011 Agilent Technologies

Middle Channel - 772 MHz

799-805 MHz, D-LMR



769-775 MHz, C4FM

Middle Channel - 772 MHz



⁷⁹⁹⁻⁸⁰⁵ MHz, C4FM

Middle Channel – 802 MHz



809-824 MHz, TETRA

Middle Channel - 815 MHz



854-869 MHz, TETRA

Middle Channel – 860 MHz



806-824 MHz, D-LMR

Middle Channel - 815 MHz



851-869 MHz, D-LMR

Middle Channel – 860 MHz



806-824 MHz, FM (20 kHz CS)

Middle Channel - 815 MHz



851-869 MHz, FM (20 kHz CS)



806-824 MHz, FM (25 KHz CS)

Middle Channel – 815 MHz



851-869 MHz, FM (25 kHz CS)

Middle Channel – 860 MHz



Occupied Bandwidth (Low Power)

769-775 MHz, D-LMR

🔆 Agilent Freq/Channel **Center Freq** Ch Freq 772 MHz Trig Free 772.000000 MHz Occupied Bandwidth Center 772.0000000 MHz Start Freq 771.970000 MHz Ref 25 dBm Atten 30 dB Stop Freq #Avg 772.030000 MHz Log 10 CF Step dB/ 6.00000000 kHz 0ffst 10.4 <u>Auto</u> Man βB FreqOffset 0.00000000 Hz Center 772.000 0 MHz #Res BW 300 Hz Span 60 kHz VBW 910 Hz Sweep 2.013 s (601 pts) Signal Track Occupied Bandwidth Occ BW % Pwr 99.00 % 0n <u>Off</u> -26.00 dB хdВ 19.0756 kHz **Transmit Freq Error** -197.104 Hz x dB Bandwidth 21.374 kHz* Copyright 2000-2011 Agilent Technologies

Middle Channel - 772 MHz

799-805 MHz, D-LMR

Middle Channel – 802 MHz


769-775 MHz, C4FM

Middle Channel - 772 MHz



⁷⁹⁹⁻⁸⁰⁵ MHz, C4FM

Middle Channel – 802 MHz



809-824 MHz, TETRA

Middle Channel - 815 MHz



854-869 MHz, TETRA

Middle Channel – 860 MHz



806-824 MHz, D-LMR

Middle Channel - 815 MHz



⁸⁵¹⁻⁸⁶⁹ MHz, D-LMR

Middle Channel – 860 MHz



806-824 MHz, FM (20 kHz CS)

Middle Channel - 815 MHz



851-869 MHz, FM (20 kHz CS)

Middle Channel – 860 MHz



806-824 MHz, FM (25 KHz CS)

Middle Channel - 815 MHz



851-869 MHz, FM (25 kHz CS)

Middle Channel – 860 MHz



Emission Mask B (High Power)

806-824 MHz, FM (20 kHz CS)





Middle Channel – 815 MHz



High Channel – 823.9 MHz



851-869 MHz, FM (20 kHz CS)





Middle Channel – 860 MHz



High Channel – 868.9 MHz



806-824 MHz, FM (25 kHz CS)



Low Channel - 806.1 MHz

Middle Channel – 815 MHz



High Channel – 823.9 MHz



851-869 MHz, FM (25 kHz CS)

Low Channel – 851.1 MHz



Middle Channel – 860 MHz



High Channel – 868.9 MHz



806-824 MHz, D-LMR

Low Channel - 806.1 MHz



Middle Channel – 815 MHz





High Channel – 823.9 MHz

851-869 MHz, D-LMR

Low Channel – 851.1 MHz





Middle Channel – 860 MHz

High Channel – 868.9 MHz



EA Mask (High Power)

809-824 MHz, D-LMR

Low Channel - 809.0125 MHz



High Channel – 823.9875 MHz



854-869 MHz, D-LMR



Low Channel – 854.0125 MHz

High Channel - 868.9875 MHz



809-824 MHz, FM (20 kHz CS)



Low Channel - 809.0125 MHz

High Channel – 823.9875 MHz



854-869 MHz, FM (20 kHz CS)



Low Channel - 854.0125 MHz

High Channel - 868.9875 MHz



809-824 MHz, FM (25 kHz CS)



Low Channel - 809.0125 MHz

High Channel - 823.9875 MHz



854-869 MHz, FM (25 kHz CS)



Low Channel - 854.0125 MHz

High Channel - 868.9875 MHz



Emission Mask B (Low Power)

806-824 MHz, FM (20 kHz CS)



Low Channel - 806.1 MHz

Middle Channel – 815 MHz



High Channel – 823.9 MHz



851-869 MHz, FM (20 kHz CS)

Low Channel – 851.1 MHz



Middle Channel - 860 MHz



High Channel – 868.9 MHz



806-824 MHz, FM (25 kHz CS)



Low Channel – 806.1 MHz

Middle Channel – 815 MHz



High Channel – 823.9 MHz



851-869 MHz, FM (25 kHz CS)

Low Channel – 851.1 MHz



Middle Channel – 860 MHz



High Channel – 868.9 MHz



806-824 MHz, D-LMR

Low Channel - 806.1 MHz



Middle Channel – 815 MHz



High Channel – 823.9 MHz



851-869 MHz, D-LMR

Low Channel – 851.1 MHz



Middle Channel – 860 MHz



High Channel – 868.9 MHz



EA Mask (Low Power)

809-824 MHz, D-LMR

Low Channel - 809.0125 MHz



High Channel - 823.9875 MHz



854-869 MHz, D-LMR



Low Channel – 854.0125 MHz

High Channel - 868.9875 MHz



809-824 MHz, FM (20 kHz CS)



Low Channel - 809.0125 MHz

High Channel - 823.9875 MHz



854-869 MHz, FM (20 kHz CS)



Low Channel - 854.0125 MHz

High Channel - 868.9875 MHz



809-824 MHz, FM (25 kHz CS)



Low Channel - 809.0125 MHz

High Channel - 823.9875 MHz



854-869 MHz, FM (25 kHz CS)



Low Channel - 854.0125 MHz

High Channel - 868.9875 MHz



8 FCC §2.1051, §90.210 & §90.221 - Spurious Emissions at Antenna Terminals

8.1 Applicable Standard

<u>TETRA (809-824 MHz / 854-869 MHz):</u>

According to FCC 90.221: (d) On any frequency removed from the assigned frequency by more than 75 kHz, the attenuation of any emission must be at least $43 + 10 \log (Pwatts) dB$.

D-LMR & FM (Mask B, 806-824 MHz / 851-869 MHz):

According to FCC §90.210 (b) (3): On any frequency removed from the assigned frequency by more than 250 percent of the authorized bandwidth: At least 43 + 10 log (Pwatts) dB.

D-LMR & C4FM (769-775 MHz / 799-805 MHz):

According to FCC 90.543 (c): *Out-of-band emission limit*. On any frequency outside of the frequency ranges covered by the ACP tables in this section, the power of any emission must be reduced below the mean output power (P) by at least $43 + 10 \log$ (Pwatts) dB measured in a 100 KHz bandwidth for frequencies less than 1 GHz, and in a 1 MHz bandwidth for frequencies greater than 1 GHz.

8.2 Test Procedure

The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation. The resolution bandwidth of the spectrum analyzer was set at 100 kHz for frequencies below 1 GHz and at 1 MHz for frequencies above 1 GHz. Sufficient scans were taken to show any out of band emissions up to 10th harmonic

8.3 Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Interval
Agilent	Spectrum Analyzer	E4440A	MY44303352	2012-10-16	1 Year

Statement of Traceability: **BACL Corp.** attests that all calibrations have been performed according to A2LA requirements, traceable to the NIST.

8.4 Test Environmental Conditions

Temperature:	18.9 °C		
Relative Humidity:	53 %		
ATM Pressure:	101.1 kPa		

The testing was performed by Lionel Lara on 2013-02-16 in the RF Site.

8.5 Test Results

Please refer to the following plots.

Note: Only the worst modulation was chosen between TETRA and D-LMR in each frequency band. Once the worst modulation was determined, then the worst channel was chosen for each modulation between TETRA/D-LMR, C4FM and FM in each frequency band.
High Power

769-775 MHz, D-LMR

High Channel – 774.9 MHz





799-805 MHz, D-LMR



High Channel – 804.9 MHz



769-775 MHz, C4FM



Middle Channel – 772 MHz



799-805 MHz, C4FM

🔆 Ag	jilent								F	₹ T	Marker
Ref 32	dBm		Atten	40 dB				Mk	r1 600 -50.3	0.7 MHz 5 dBm	Select Marker
#Hvg Log											<u> </u>
10											Manmal
dB/											Normai
0ffst 10//											
dB											Delta
DI											
-13.0 dBm											Delta Pair
PAug											(Tracking Ref)
r nvg											Ket 🛕
M1 S2											Span Pair
S3 FC											Span <u>Center</u>
пп £(f):						1					
FTun	-++A	- Agenerative and the A		فطورهم والمراجع	-	X	********	الرمور ومستعده	- بري - يو - به هوه بر		Off
Swp											
											More
Start 3	30.0 MH	z					<u>`</u>	Stop	1.000	0 GHz	1 of 2
#Kes E	SM I00	KHZ		٨R	W 300 I	KHZ	Sweep	293.2	ms (60	1 pts)	
Copyr	ight 20	JUO-2 0	10 Ag	ilent T	echnol	ogies					

Middle Channel – 802 MHz

🔆 Agilent		RT	Peak Search
Ref 32 dBm Atter #Avg Marker	1 40 dB	Mkr1 7.120 GHz _33.80 dBm	Next Peak
Log 10 7.120000000 dB/ 0ffst -33.80 dBm	GHz		Next Pk Right
10.4 dB DI			Next Pk Left
-13.0 dBm PAvg			Min Search
M1 S2 S3 FC AA	www.comerce.comerce.com		Pk-Pk Search
£ (f): FTun Swp			Mkr → CF
Start 1.000 GHz #Res BW 1 MHz	VBW 3 MHz	Stop 10.000 GHz Sweep 27.2 ms (601 pts)	More 1 of 2
Copyright 2000-2010 A	gilent l'echnologie	S	

806-824 MHz, D-LMR

Mkr1 471.4 MHz Ref 32 dBm Atten 30 dB -51.06 dBm *Hvg Start 515.000000 MHz Log 30.00000000 MHz 30.0000000 MHz dB/ 0 1 Offst 20.5 1 1 20.5 1 1 1 dB 1 1 1 1 01 1 1 1 1 1 -13.0 1 1 1 1 0000000 MHz MI \$2 1 1 1 1 1 1 0 1 0 0 0000000 MHz 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	🔆 Ag	ilent										Freq/Channel
HVg Log 10 Start 30.00000000 MHz Start Freq 30.0000000 MHz Offst 20.5 dB Stop Freq 1.0000000 GHz DI -13.0 dBm CF Step 97.0000000 MHz M1 S2 S3 FC AA Start Treq 0.0000000 GHz Start S0.0 MHz Stop Freq 1.0000000 GHz Start S0.0 MHz Stop Freq 0.0000000 Hz Start S0.0 MHz Stop I.000 0 GHz	Ref 32	dBm		Atten	30 dB				Mkr	1 47: -51.0	L.4 MHz 16 dBm	Center Freq
Offst 20.5 Stop Freq 1.0000000 GHz DI -13.0 CF Step 97.0000000 MHz Auto *PAvg Freq Offset 0.0000000 Hz M1 S2 S3 FC AA Stop I 000 0 GHz Start 30.0 MHz Stop 1.000 0 GHz	#HVg Log 10 dB/	Star 30.0	t 0000	000	MHz							Start Freq 30.0000000 MHz
-13.0 dBm #PAvg M1 S2 S3 FC AR £(f): FTun Swp Start 30.0 MHz Start 30.0 MHz HUL 200 HU HUL 200 HU HUL 200 HU Start 30.0 MHz HUL 200 HU HUL 200 HU HU HUL 200 HU HU HU HU HU HU HU HU HU HU	0++st 20.5 dB DI											Stop Freq 1.00000000 GHz
M1 S2 S3 FC AA £(f): FTun Swp Start 30.0 MHz LDU 200 LU LDU 200 LU LU LDU 200 LU LU LDU 200 LU LU LU LU LU LU LU LU LU LU	-13.0 dBm #PAvg											CF Step 97.000000 MHz <u>Auto</u> Man
Start 30.0 MHz Stop 1.000 0 GHz	M1 S2 S3 FC AA											Freq Offset 0.00000000 Hz
Start 30.0 MHz Stop 1.000 0 GHz	£(f): FTun Swp		-1,,-,,-,1,-1-		,	\$		·····	•			Signal Track On <u>Off</u>
*Kes BW 100 KHZ VBW 300 KHZ Sweep 293.2 ms (601 pts)	Start 3 #Res B	0.0 MH W 100	z kHz		VB	W 300 I	kHz	Sweep	Stop 293.2	1.000 ms (60	0 GHz 1 pts)	

Middle Channel – 815 MHz



854-869 MHz, TETRA

🔆 Ag	ilent										Marker
Ref 32	dBm		Atte	n 40 dB				Mk	r1 433 -49.5	7.4 MHz 8 dBm	Select Marker
₩НV9 Log 10 dB/ Offst	Mark 437. -49.	ter 4000 58 d	000 Bm	MHz							Normal
10.4 dB DI -13.0											Delta
dBm PAvg M1 so											(Tracking Ref) Ref <u>A</u>
53 FC					1						Span Pair Span <u>Center</u>
FTun Swp											Off More
Start 3 #Res B	30.0 MH W 100	z kHz	31.0.0	V	3W 300	kHz naion	Sweep	Stop 293.2) 1.000 ms (60	0 GHz 1 pts)	1 of 2

Middle Channel – 860 MHz

🔆 Aa	ilent										Peak Search
Ref 32 #Avg	dBm Mark	or	Atten	40 dB				Mk	r1 7.1 -33.3	20 GHz 4 dBm	Next Peak
Log 10 dB/ Offst	-7.12 -33.	0000 .34 d	0000 Bm _	GHz							Next Pk Right
10.4 dB DI _13.0											Next Pk Left
dBm PAvg											Min Search
M1 S2 S3 FC		mann			and the second sec			~~~	~~	~	Pk-Pk Search
€(f): FTun Swp											Mkr → CF
Start 1 #Res B	.000 G W 1 MH	Hz z		VI	BM 3 MI	Ηz	Swee	Sto p 27.2	p 10.00 ms (60	00 GHz 1 pts)	More 1 of 2
Copyri	ight 20	000-20)10 Ag	ilent T	echnol	ogies					

Report Number: R1212274-90

806-824 MHz, FM (20 kHz CS)

🔆 Ag	ilent										Marker
Ref 32	dBm		Atter	n 30 dB				Mk	r1 463 -51.0	3.3 MHz 6 dBm	Select Marker
#Avg Log	Mark	er Sooo	00	мц							1 2 3 4
10 dB/	403. -51.	.300e 06 d	Bm .	ri⊓∠							Normal
Offst 20.5											
ab Dl											Deita
-13.0 dBm											Delta Pair (Tracking Ref)
#PAvg											Ref 🛕
M1 S2 S3 FC											Span Pair Span <u>Center</u>
HH £(f):					1						
Flun Swp			~~~~~~					hteres (1990, 1997, 1997, 1997, 1997, 1997, 1997, 1997, 1997, 1997, 1997, 1997, 1997, 1997, 1997, 1997, 1997, 1	* **********		Off
Start 3		7						Stor	1 000	0 GHz	More
#Res B	W 100	kHz		VB	W 300	kHz	Sweep	293.2	ms (60	1 pts)	1 of 2
Copyri	ight 20	000-20)11 A	gilent T	echnol	ogies					

Low Channel – 806.1 MHz

🔆 Ag	jilent										Trace
Ref 32 #Avg	dBm Mork	or	Atten	30 dB				Mk	r1 7.0 -38.3	90 GHz 3 dBm	Trace
Log 10 dB/ Offst	-7.09 38.	.ei 10000 .33 d	0000 IBm _	GHz							Clear Write
20.5 dB DI											Max Hold
-13.0 dBm #PAvg											Min Hold
M1 S2 S3 FC AA						ulanda and an	1 •	aperto-ste'-M		~~~~~	Viev
£ (f): FTun Swp											Blanl
Start 1 #Res B	L.000 G W 1 MH	Hz z		V	BW 3 MI	lz	Swee	Sto p 27.2	p 10.00 ms (60	00 GHz 1 pts)	More 1 of 3
Copyr	ight 20	000-20	011 Ag	ilent T	echnol	ogies					

851-869 MHz, FM (25 kHz CS)

🔆 Ag	ilent											Marker
Ref 32	dBm		Atte	n 30 (dB				Mk	r1 481 -51.2	L.0 MHz 2 dBm	Select Marker
#HVg Log 10 dB/ Offst	Mark 481. -51.	(er .0000 .22 d	000 Bm	MHz								Normal
20.5 dB DI -13.0												Delta
dBm #PAvg												Ueita Pair (Tracking Ref) Ref <u>A</u>
MI 52 S3 FC AA £(f):						1						Span Pair Span <u>Center</u>
FTun Swp		****		an a			******	*******		andranad ^{da} nam	***,****, <u>~_1,,</u> ,,,,**(Off More
Start 3 #Res B	30.0 MH W 100	lz kHz 100-20	a11	ailon	VBk	300 achaol	(Hz	Sweep	Stop 293.2	o 1.000 ms (60	0 GHz 1 pts)	1 of 2

High Channel – 868.9 MHz

🔆 Ag	jilent										Peak Search
Ref 32 #Avg	dBm Mark	or	Atten	30 dB				Mk	r1 7.0 -37.8	90 GHz 6 dBm	Next Peak
Log 10 dB/ Offst	7.09	0000 86 d	0000 Bm _	GHz							Next Pk Right
20.5 dB DI											Next Pk Left
-13.0 dBm #PAvg											Min Search
M1 S2 S3 FC AA			- Antonio and			and and an interval	1 ••••••••	What the state of			Pk-Pk Search
€(f): FTun Swp											Mkr → CF
Start 1 #Res E	1.000 G 3W 1 MH	Hz z		VI	BW 3 MI	Hz	Swee	Sto p 27.2	p 10.00 ms (60	00 GHz 1 pts)	More 1 of 2
Copyr	ight 20	00-20	011 Ag	ilent T	echnol	ogies					

Teltronic S.A.U.

9 FCC §2.1055 (d), §90.213 &§90.539 - Frequency Stability

9.1 Applicable Standard

According to FCC §90.213: (a) Unless noted elsewhere, transmitters used in the services governed by this part must have a minimum frequency stability as specified in the following table.

[Parts per million (ppm)]

Frequency range	Fixed and base	Mobile stations					
(MHz)	stations	Over 2 watts output power	2 watts or less output power				
Below 25	^{1,2,3} 100	100	200				
25-50	20	20	50				
72-76	5		50				
150-174	^{5,11} 5	⁶ 5	^{4,6} 50				
216-220	1.0		1.0				
220-222 ¹²	0.1	1.5	1.5				
421-512	^{7,11,14} 2.5	⁸ 5	⁸ 5				
806-809	¹⁴ 1.0	1.5	1.5				
809-824	¹⁴ 1.5	2.5	2.5				
851-854	1.0	1.5	1.5				
854-869	1.5	2.5	2.5				
896-901	¹⁴ 0.1	1.5	1.5				
902-928	2.5	2.5	2.5				
902-928 ¹³	2.5	2.5	2.5				
929-930	1.5						
935-940	0.1	1.5	1.5				
1427-1435	⁹ 300	300	300				
Above 2450 ¹⁰							

14 Control stations may operate with the frequency tolerance specified for associated mobile frequencies.

According to FCC §90.539 (c): The frequency stability of mobile, portable, and control transmitters operating in the narrowband segment must be 400 parts per billion or better when AFC is locked to the base station. When AFC is not locked to the base station, the frequency stability must be at least 1.0 ppm for 6.25 kHz, 1.5 ppm for 12.5 kHz (2 channel aggregate), and 2.5 ppm for 25 kHz (4 channel aggregate).

9.2 Test Procedure

Frequency Stability vs. Temperature: The equipment under test was connected to an external DC power supply and the RF output was connected to the Spectrum Analyzer via feed-through attenuators. The EUT was placed inside the temperature chamber. The DC leads and RF output cable exited the chamber through an opening made for the purpose.

After the temperature stabilized for approximately 20 minutes, the frequency output was recorded from the Spectrum Analyzer.

Frequency Stability vs. Voltage: An external variable DC power supply Source. The voltage was set to 115% and 85% of the nominal value. The output frequency was recorded for each voltage.

9.3 Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Cycle
Agilent	Spectrum Analyzer	E4446A	US44300386	2012-09-29	1 Year
Tenney	Temperature Chamber	TUJR	27445-06	2012-07-09	1 Year

Statement of Traceability: **BACL Corp.** attests that all calibrations have been performed according to A2LA requirements, traceable to the NIST.

9.4 Test Environmental Conditions

Temperature:	18.9 °C
Relative Humidity:	53 %
ATM Pressure:	101.1 kPa

The testing was performed by Lionel Lara on 2013-02-16 in the RF Site.

9.5 Test Results

769-775 MHz

Test Envir	onment	Channel	Measured	Frequency	Frequency	Limit						
Supply Voltage (Vdc)	Temperature (°C)	Frequency (MHz)	Frequency (MHz)	Error (Hz)	Error (ppm)	(ppm)						
	Frequency vs. Temperature											
	-30	772	772.000117	117	0.15155	±1.5						
	-20	772	772.000117	117	0.15155	±1.5						
	-10	772	772.000117	117	0.15155	±1.5						
	0	772	772.000117	117	0.15155	±1.5						
13.2	10	772	772.000100	100	0.12953	±1.5						
	20	772	772.000100	100	0.12953	±1.5						
	30	772	772.000100	100	0.12953	±1.5						
	40	772	771.999900	-100	-0.129534	±1.5						
	50	772	771.999900	-100	-0.129534	±1.5						
		Frequency	vs. Voltage									
15.18 20		772	771.999967	-33	-0.042746	±1.5						
11.22 20		772	772.000083	83	0.10751	±1.5						

799-805 MHz

Test Envir	onment	Channel	Measured	Frequency	Frequency	Limit
Supply Voltage (Vdc)	Temperature (°C)	Frequency (MHz)	Frequency (MHz)	Error (Hz)	Error (ppm)	(ppm)
		Frequency v	s. Temperatur	e		
	-30	802	802.000100	100	0.12469	±1.5
	-20	802	802.000117	117	0.14589	±1.5
	-10	802	802.000100	100	0.12469	±1.5
	0	802	802.000133	133	0.16584	±1.5
13.2	10	802	802.000067	67	0.08354	±1.5
	20	802	801.999950	-50	-0.062344	±1.5
	30	802	801.999950	-50	-0.062344	±1.5
	40	802	801.999950	-50	-0.062344	±1.5
	50	802	801.999917	-83	-0.103491	±1.5
		Frequency	v vs. Voltage			
15.18 20		802	801.999950 -50		-0.062344	±1.5
11.22 20		802	801.999967	-33	-0.041147	±1.5

806-824 MHz

Test Envir	onment	Channel	Measured	Frequency	Frequency	Limit
Supply Voltage (Vdc)	Temperature (°C)	Frequency (MHz)	Frequency (MHz)	Error (Hz)	Error (ppm)	(ppm)
		Frequency vs	. Temperature	;		
	-30	815	815.000100	100	0.1227	±1.5
	-20	815	815.000100	100	0.1227	±1.5
	-10	815	815.000100	100	0.1227	±1.5
	0	815	815.000100	100	0.1227	±1.5
13.2	10	815	814.999933	-67	-0.082209	±1.5
	20	815	814.999933	-67	-0.082209	±1.5
	30	815	814.999933	-67	-0.082209	±1.5
	40	815	814.999933	-67	-0.082209	±1.5
	50	815	814.999950	-50	-0.06135	±1.5
		Frequency	vs. Voltage			
15.18	20	815	814.999983	-17	-0.020859	±1.5
11.22	11.22 20		814.999967	-33	-0.040491	±1.5

851-869 MHz

Test Envir	onment	Channel	Measured	Frequency	Frequency	Limit						
Supply Voltage (Vdc)	Temperature (°C)	Frequency (MHz)	Frequency (MHz)	Error (Hz)	Error (ppm)	(ppm)						
	Frequency vs. Temperature											
	-30	860	860.000117	117	0.13605	±1.5						
	-20	860	860.000117	117	0.13605	±1.5						
	-10	860	860.000100	100	0.11628	±1.5						
	0	860	860.000083	83	0.09651	±1.5						
13.2	10	860	860.000033	33	0.03837	±1.5						
	20	860	859.999917	-83	-0.096512	±1.5						
	30	860	859.999950	-50	-0.05814	±1.5						
	40	860	859.999967	-33	-0.038372	±1.5						
	50	860	859.999983	-17	-0.019767	±1.5						
		Frequency	vs. Voltage									
15.18	20	860	859.999900	-100	-0.116279	±1.5						
11.22 20		860	859.999900	-100	-0.116279	±1.5						

10 FCC §2.1053, §90.221, §90.210 & §90.543 – Field Strength of Spurious Radiation

10.1 Applicable Standard

TETRA (809-824 MHz / 854-869 MHz):

According to FCC 90.221 (d): On any frequency removed from the assigned frequency by more than 75 kHz, the attenuation of any emission must be at least $43 + 10 \log (Pwatts) dB$.

D-LMR & FM (Mask B, 806-824 MHz / 851-869 MHz):

According to FCC §90.210 (b) (3): On any frequency removed from the assigned frequency by more than 250 percent of the authorized bandwidth: At least 43 + 10 log (Pwatts) dB.

D-LMR & C4FM (769-775 MHz / 799-805 MHz):

According to FCC §90.543 (c): *Out-of-band emission limit*. On any frequency outside of the frequency ranges covered by the ACP tables in this section, the power of any emission must be reduced below the mean output power (P) by at least 43 + 10 log (Pwatts) dB measured in a 100 KHz bandwidth for frequencies less than 1 GHz, and in a 1 MHz bandwidth for frequencies greater than 1 GHz.

According to FCC §90.543 (f):

For operations in the 763-775 MHz and 793-805 MHz bands, all emissions including harmonics in the band 1559-1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

10.2 Test Procedure

The transmitter was placed on Styrofoam on the turntable, and it was normal transmitting with 500hm termination which was also placed on the turntable.

The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT.

The frequency range up to tenth harmonic of the fundamental frequency was investigated.

Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution.

Spurious emissions in dB = 10 lg (TXpwr in Watts/0.001) - the absolute level

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Interval
Agilent	Spectrum Analyzer	E4440A	MY44303352	2012-10-16	1 Year
Sunol Science Corp	System Controller	SC99V	122303-1	N/R	-
Sunol Science Corp	Combination Antenna	JB3	A020106-2	2012-08-15	1 Year
EMCO	Horn Antenna	3115	9511-4627	2012-10-17	1 Year
Hewlett Packard	Pre-amplifier	8447D	2944A06639	2012-06-09	1 Year
Mini-Circuits	Pre-amplifier	ZVA-183-S	570400946	2012-05-09	1 Year
Eaton	Horn antenna	96001	Mar-07	2012-10-17	1 Year
Rohde & Schwarz	Signal Generator	SMIQ03	849192/0085 / DE23746	2012-04-23	2 Years

10.3 Test Equipment List and Details

Statement of Traceability: **BACL Corp.** attests that all calibrations have been performed according to A2LA requirements, traceable to the NIST.

10.4 Test Environmental Conditions

Temperature:	19 °C
Relative Humidity:	42 %
ATM Pressure:	101.4 kPa

The testing was performed by Lionel Lara on 2013-02-22 in 5 meter chamber 3.

10.5 Test Results

According to the data hereinafter, the EUT <u>complied with the FCC Pt 90</u> standard's radiated emissions limits, and had a worst case margin of:

Worst Margin: -3.74 dB at 1609.8 MHz in the Horizontal polarization.

Please see following table for detailed results.

Note: Only the worst modulation was chosen between TETRA and D-LMR in each frequency band. Once the worst modulation was determined, then the worst channel was chosen for each modulation between TETRA/D-LMR, C4FM and FM in each frequency band.

FCC ID: WT7PTMDT500760B

769-775 MHz, D-LMR, High Power

Indi	cated	Test Antenna									
Freq. (MHz)	Amp. (dBuV)	Azimuth Degrees	Height (cm)	Polar (H/V)	Freq. (MHz)	Level (dBm)	Antenna Cord. (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
1549.8	44.96	163	146	Н	1549.8	-53.95	7.87	1.34	-47.42	-13	-34.42
1549.8	43.22	129	156	V	1549.8	-55.69	7.87	1.34	-49.16	-13	-36.16

High Channel – 774.9 MHz

799-805 MHz, DLMR, High Power

High Channel – 804.9 MHz

Indi	cated	Test Antenna										
Freq. (MHz)	Amp. (dBuV)	Azimuth Degrees	• Azimuth Degrees	Height (cm)	Polar (H/V)	Freq. (MHz)	Level (dBm)	Antenna Cord. (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
1609.8	47.72	166	132	Н	1609.8	-50.9	8.5	1.34	-43.74	-40	-3.74	
1609.8	45.26	130	144	V	1609.8	-53.36	8.5	1.34	-46.2	-40	-6.2	

For emissions in the band 1559-1610 MHz the limit becomes -40 dBm according to <u>§90.543 (f)</u>

769-775 MHz, C4FM, High Power

Middle Channel – 772 MHz

Indi	cated	Test Antenna					- • •				
Freq. (MHz)	Amp. (dBuV)	Azimuth Degrees	Height (cm)	Polar (H/V)	Freq. (MHz)	Level (dBm)	Antenna Cord. (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
1544	42.69	164	141	Н	1544	-56.22	7.87	1.34	-49.69	-13	-36.69
1544	42.25	130	153	V	1544	-56.66	7.87	1.34	-50.13	-13	-37.13

799-805 MHz, C4FM, High Power

Middle Channel - 802 MHz

Indi	cated	Test Antenna									
Freq. (MHz)	Amp. (dBuV)	Azimuth Degrees	Height (cm)	Polar (H/V)	Freq. (MHz)	Level (dBm)	Antenna Cord. (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
1604	47.7	166	137	Н	1604	-50.92	8.5	1.34	-43.76	-40	-3.76
1604	45.65	129	148	V	1604	-52.97	8.5	1.34	-45.81	-40	-5.81

For emissions in the band 1559-1610 MHz the limit becomes -40 dBm according to §90.543 (f)

FCC ID: WT7PTMDT500760B

806-824 MHz, D-LMR, High Power

Indi	cated	A rimuth Test Antenna				Substitute	d				
Freq. (MHz)	Amp. (dBuV)	Azimuth Degrees	Height (cm)	Polar (H/V)	Freq. (MHz)	Level (dBm)	Antenna Cord. (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
1630	48.58	171	135	Н	1630	-49.92	8.5	1.34	-42.76	-13	-29.76
1630	45.21	142	141	V	1630	-53.29	8.5	1.34	-46.13	-13	-33.13

Middle Channel – 815 MHz

854-869 MHz, TETRA, High Power

Middle Channel – 860 MHz

Indi	cated	Test Antenna									
Freq. (MHz)	Amp. (dBuV)	Azimuth Degrees	Height (cm)	Polar (H/V)	Freq. (MHz)	Level (dBm)	Antenna Cord. (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
1720	51.35	170	104	Н	1720	-46.69	8.49	1.34	-39.54	-13	-26.54
1720	49.03	132	150	V	1720	-49.01	8.49	1.34	-41.86	-13	-28.86

806-824 MHz, FM (20 kHz CS), High Power

Low Channel – 806.1 MHz

Indi	icated		Test Antenna								
Freq. (MHz)	Amp. (dBuV)	Azimuth Degrees	Height (cm)	Polar (H/V)	Freq. (MHz)	Level (dBm)	Antenna Cord. (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
1612.2	46.8	171	138	Н	1612.2	-51.82	8.5	1.34	-44.66	-13	-31.66
1612.2	45.22	132	142	V	1612.2	-53.4	8.5	1.34	-46.24	-13	-33.24

851-869 MHz, FM (25 kHz CS), High Power

High Channel – 868.9 MHz

Indicated			Test Aı	ntenna							
Freq. (MHz)	Amp. (dBuV)	Azimuth Degrees	Height (cm)	Polar (H/V)	Freq. (MHz)	Level (dBm)	Antenna Cord. (dBi)	Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
1737.8	49.44	173	175	Н	1737.8	-48.6	8.49	1.34	-41.45	-13	-28.45
1737.8	48.29	132	151	V	1737.8	-49.75	8.49	1.34	-42.6	-13	-29.6

11 FCC §2.1049 §90.221 & §90.543 – Adjacent Channel Power

11.1 Applicable Standard

According to FCC §90.221: (a) For the frequency bands indicated below, operations using equipment designed to operate with a 25 kHz channel bandwidth may be authorized up to a 22 kHz bandwidth if the equipment meets the adjacent channel power (ACP) limits below. The table specifies a value for the ACP as a function of the displacement from the channel center frequency and a measurement bandwidth of 18 kHz.

(c)(1) Maximum adjacent power levels for frequencies in the 809-824/854-869 MHz band:

Frequency offset	Maximum ACP (dBc) for devices less than 15 watts	Maximum ACP (dBc) for devices 15 watts and above
25 kHz	-55 dBc	-55 dBc
50 kHz	-65 dBc	-65 dBc
75 kHz	-65 dBc	-70 dBc

(2) In any case, no requirement in excess of -36 dBm shall apply.

(d) On any frequency removed from the assigned frequency by more than 75 kHz, the attenuation of any emission must be at least $43 + 10 \log (Pwatts) dB$.

According to FCC §90.543: Transmitters designed to operate in 769-775 MHz and 799-805 MHz frequency bands must meet the emission limitations in paragraphs (a) through (d) of this section. Transmitters operating in 763-768 MHz and 793-798 MHz bands must meet the emission limitations in (e) of this section.

(a) The adjacent channel power (ACP) requirements for transmitters designed for various channel sizes are shown in the following tables. Mobile station requirements apply to handheld, car mounted and control station units. The tables specify a value for the ACP as a function of the displacement from the channel center frequency and measurement bandwidth. In the following tables, "(s)" indicates a swept measurement may be used.

Offset from center frequency (kHz)	Measurement bandwidth (kHz)	Maximum ACP relative (dBc)			
9.375	6.25	-40			
15.625	6.25	-60			
21.875	6.25	-60			
37.50	25.00	-60			
62.50	25.00	-65			
87.50	25.00	-65			
150.00	100	-65			
250.00	100	-65			
350.00	100	-65			
>400 to 12 MHz	30 (s)	-75			
12 MHz to paired receive band	30 (s)	-75			
In the paired receive band	30 (s)	-100			

12.5 kHz Mobile Transmitter ACP Requirements

25 kHz Mobile Transmitter ACP Requirements

Offset from center frequency (kHz)	Measurement bandwidth (kHz)	Maximum ACP relative (dBc)		
15.625	6.25	-40		
21.875	6.25	-60		
37.50	25	-60		
62.50	25	-65		
87.50	25	-65		
150.00	100	-65		
250.00	100	-65		
350.00	100	-65		
>400 kHz to 12 MHz	30 (s)	-75		
12 MHz to paired receive band	30 (s)	-75		
In the paired receive band	30 (s)	-100		

11.2 Test Procedure

The RF output of the transmitter was connected to the input of the spectrum analyzer through sufficient attenuation.

11.3 Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	
Agilent	Spectrum Analyzer	E4440A	MY44303352	2012-10-16	

Statement of Traceability: **BACL Corp.** attests that all calibrations have been performed according to A2LA requirements, traceable to the NIST.

11.4 Test Environmental Conditions

Temperature:	19.4℃
Relative Humidity:	50%
ATM Pressure:	101.2 kPa

The testing was performed by Lionel Lara on 2013-02-21 at the RF site.

11.5 Test Results

Please refer to the following plots.

ACP (High Power)

769-775 MHz, D-LMR

Low Channel - 769.1 MHz





Report Number: R1212274-90

🔆 Ag	jilent								R	: Т	Peak Search
Ref 20	dBm		Atten	20 dB				Mkr1	768.7 -52.0	00 MHz 7 dBm	Next Peak
#HVg Log 20											
20 dB/ Offer											Next Pk Right
10.4 dB											Next Pk eft
DI -45.0								1			
dBm PAva											Min Search
M1 S2											
S3 FC AA											Pk-Pk Search
£ (f): #f>50k											Mkr → CF
Swp											
Start 7 #Res B	′57.100 W 30 k) MHz Hz		#\	/BW 1 M	 1Hz	#S	Stop weep 30	768.70 0 s (60	00 MHz 1 pts)	More 1 of 2
Copyr	ight 21	000-20	010 Ag	ilent T	echno	logies					

-12MHz to -400kHz



+400kHz to +12MHz

🔆 Ag	jilent								R	Т	Peak Search
Ref 20 #Avg	dBm		Atten	20 dB				Mkr1	781.100 -62.77	0 MHz dBm	Next Peak
Log 20 dB/ Offst											Next Pk Right
10.4 dB DI	1 1										Next Pk Left
-45.0 dBm PAvg							· · · ·				Min Search
M1 S2 S3 FC AA											Pk-Pk Search
£(†): #f>50k Swp											Mkr→CF
Start 7 #Res B	781.100 3W 30 ki	MHz Hz		#V	'BW 1 M	lHz	#\$\	Stop Weep 30	799.000) s (601) MHz pts)	More 1 of 2
Lobar	ight 20	900-2I	ara Hð	ment i	ecnno	iugies					

+12MHz to receive band

🔆 Aç	jilent								F	: T	Peak Search
Ref 20 #Ava	dBm		Atten	20 dB				Mkr	1 803. -71.2	58 MHz 0 dBm	Next Peak
Log 20 dB/ Offst											Next Pk Right
10.4 dB DI -70.0								1			Next Pk Left
dBm PAvg								\$			Min Search
M1 S2 S3 FC AA											Pk-Pk Search
£ (f): ∗f>50k Swp											Mkr → CF
Start 7 #Res B	/ 799.00 3W 30 k	MHz Hz	^	#V	BW 1 M	Hz	#Sv	Sto Yeep 3	op 805.0 0 s (60	00 MHz 1 pts)	More 1 of 2
Copyr	ight 20	000-2	010 Ac	ilent T	echnol	naies					

In receive band

Middle Channel – 772 MHz





FCC ID: WT7PTMDT500760B

🔆 Agilent				RT	Peak Search
Ref 20 dBm #Avg	Atten 20 dB		Mkr1	771.600 MHz -52.32 dBm	Next Peak
Log 20 dB/ Offst					Next Pk Right
10.4 dB					Next Pk Left
-45.0 Land American American dBm PAvg	^	<u> </u>			Min Search
M1 S2 S3 FC AA					Pk-Pk Search
£(f): #f>50k Swp					Mkr→CF
Start 760.000 MHz #Res BW 30 kHz	*VE	BW 1 MHz +	Stop \$Sweep 30	771.600 MHz s (601 pts)	More 1 of 2
copyright 2000-20	olo Hglient I (cnnologies			

-12MHz to -400kHz



+400kHz to +12MHz

🔆 Agilent					R	Т	Peak Search
Ref 20 dBm #Avg	Atter	1 20 dB		Mkr1	784.000 -62.78	∣MHz dBm	Next Peak
Log 20 dB/ Offst							Next Pk Right
10.4 dB DI <u>‡</u>							Next Pk Left
-45.0 Y dBm PAvg							Min Search
M1 S2 S3 FC AA							Pk-Pk Search
£ (f): #f>50k Swp							Mkr → CF
Start 784.000 #Res BW 30 k	MHz ^ Hz	#VBW 1 1	MHz	Stop #Sweep 30	799.000)s (601	MHz pts)	More 1 of 2
Copyright 20	000-2010 A	gilent Techno	logies				

+12MHz to receive band



In receive band

High Channel – 774.9 MHz





🔆 Agi	lent								R	Т	Peak Search
Ref20 #Avg	dBm		Atten	20 dB				Mkr1	774.5 -52.1	00 MHz 6 dBm	Next Peak
Log 20 dB/ Offst											Next Pk Right
10.4 dB DI -45.0											Next Pk Left
dBm PAvg	-, 4			<u> </u>		-^					Min Search
M1 S2 S3 FC AA											Pk-Pk Search
£(f): #f>50k Swp -											Mkr→CF
Start 7 #Res Bl	62.900 J 30 k	I MHz ´ Hz	210.04	#\	BW 1 M	IHz	#S	Stop weep 3(774.50 0 s (60	00 MHz 1 pts)	More 1 of 2
leabau	Sur Zi	500-20	oro uš	ment i	Gennio	logies					

-12MHz to -400kHz



+400kHz to +12MHz

FCC ID: WT7PTMDT500760B

🔆 Agile	nt							R	Т	Peak Search
Ref 20 d #Ava	Bm	Atten	20 dB				Mkr1	786.90 -62.63	0 MHz dBm	Next Peak
Log 20 dB/										Next Pk Right
0ffst 10.4 dB										Next Pk Left
-45.0 Y dBm PAvg										Min Search
M1 S2 S3 FC AA										Pk-Pk Search
£(f): #f>50k Swp										Mkr → CF
Start 780 #Res BW	Start 786.900 MHz ^ Stop 799.000 MHz Res BW 30 kHz #VBW 1 MHz #Sweep 30 s (601 pts)									
Copyrig	ht 2000-2	010 Ag	ilent T	echnol	ogies					

+12MHz to receive band

🔆 Ag	jilent								F	?Т	Peak Search
Ref 20	dBm		Atten	20 dB				Mkr	1 802. -71.0	90 MHz 0 dBm	Next Peak
#Hvg Log											
20 JP /											Next Pk Right
ab/ Offst											
10.4 dB											Next Pk Left
DI							1				
-70.0 dBm			<u> </u>				ô				Min Soorah
PAvg											nin Search
M1 S2											Dk-Dk Sooroh
53 FC AA											FK-FK Seal Cli
£ (f):											
#t>50к Swp	İ										Mkr → CF
											Mana
Start 7	799.00	МНz						Sto	p 805.	00 MHz	1 of 2
#Res B	W 30 K	HŻ		#V	BWIM	HŻ	#51	veep 3	0 S (60	1 pts)	
Copyr	iaht 20	300-20	010 Ac	ilent T	echnol	ogies					

In receive band

799-805 MHz, D-LMR

Low Channel - 799.1 MHz



* Agilent	Freq/Channel
Ch Freq 799.1 MHz Trig Free Adi Channel Power PASS	Center Freq 799.100000 MHz
Center 799.1000000 MHz	Start Freq 798.700000 MHz
Ref 23 dBm Atten 30 dB #AvgA Log	Stop Freq 799.500000 MHz
10 dB/ Offst 10.4	CF Step 80.0000000 kHz <u>Auto</u> Man
dB Center 799.100 0 MHz Span 800 kHz	FreqOffset 0.00000000 Hz
#Kes BW 200 HZ #VBW 200 HZ Sweep 12.84 s (601 pts) RMS Results Freq Offset Ref BW dBc Lower dBm dBc Upper dBm Carrier Power 150.0 kHz 100.0 kHz -73.63 -42.68 -72.65 -41.69 concorrent 150.0 kHz 100.0 kHz -73.63 -42.68 -72.65 -41.69	Signal Track ^{On <u>Off</u>}
38.95 dBm / 258.8 kHz 100.0 kHz -78.19 -47.23 -75.54 -45.58 25.0000 kHz 350.0 kHz 100.0 kHz -80.54 -49.59 -78.00 -47.05	
File Operation Status, C:\STATE067.STA renamed C:\ACP252.STA	

🔆 Agilent				RΤ	Peak Search
Ref 20 dBm #Avg	Atten 20 dB		Mkr1 79: -4	9.500 MHz 8.21 dBm	Next Peak
Log 20 dB/ 0ffst					Next Pk Right
10.4 dB DI	↓ 				Next Pk Left
-45.0 dBm PAvg		······································			Min Search
M1 S2 S3 FC AA					Pk-Pk Search
£(f): #f>50k Swp					Mkr → CF
Start 799.500 MH2 #Res BW 30 kHz	#VBW 1	. MHz #S	Stop 811 weep 30 s (.100 MHz 601 pts)	More 1 of 2
Copyright 2000-2	010 Agilent Tech	nologies			

+12MHz to +400kHz



⁻⁴⁰⁰kHz to -12MHz

🔆 Ag	jilent								R	Т	Peak Search
Ref 20 #Avg	dBm		Atten	20 dB				Mkr1	787.10 -65.19	0 MHz dBm	Next Peak
Log 20 dB/ Offst											Next Pk Right
10.4 dB DI											Next Pk Left
-45.0 dBm PAvg	<u> </u>										Min Search
M1 S2 S3 FC AA											Pk-Pk Search
£ (f): #f>50k Swp											Mkr → CF
Start 7 #Res B	Start 775.000 MHz ^ Stop 787.100 MHz #Res BW 30 kHz #VBW 1 MHz #Sweep 30 s (601 pts)									More 1 of 2	
Copyr	ight 20	000-2	010 Ag	lilent T	echnol	ogies					

-12MHz to receive band

🔆 Agilei	nt								F	₹ T	Peak Search
Ref 20 df	Bm		Atten	20 dB				Mkr	1 774. -72.0	Next Peak	
Log 20 dB/											Next Pk Right
10.4 dB — DI — -70.0											Next Pk Left
dBm - PAvg				×					<u> </u>		Min Search
M1 S2 S3 FC AA											Pk-Pk Search
£(f): #f>50k Swp											Mkr → CF
Start 769 #Res BW 3	9.00 MI 30 kHz	Hz ^ z	4.9.0-	#V	BW 1 M	Hz	#S\	Sto veep 3	р 775. 0 s (60	00 MHz 1 pts)	More 1 of 2

In receive band

Middle Channel – 802 MHz





Report Number: R1212274-90

FCC ID: WT7PTMDT500760B



+12MHz to +400kHz



-400kHz to -12MHz

🔆 Ag	jilent								R	Т	Peak Search
Ref 20 #Avg	dBm		Atten	20 dB				Mkr1	790.0 -65.2	00 MHz 4 dBm	Next Peak
Log 20 dB/ Offst											Next Pk Right
10.4 dB DI -45.0										1	Next Pk Left
dBm PAvg											Min Search
M1 S2 S3 FC AA											Pk-Pk Search
£(f): #f>50k Swp											Mkr → CF
Start 7 #Res B	775.000 W 30 ki	MHz Hz	31.0.0.	#V	'BW 1 M	IHz	#SI	Stop Weep 30	790.00 0 s (60)0 MHz 1 pts)	More 1 of 2
Copyr	igint 20	000-2	ara Hð	ment I	ecnnu	iugres					

-12MHz to receive band

🔆 👫 Ag	jilent								R	: Т	Peak Search
Ref 20	dBm		Atten	20 dB				Mkr:	1 771. -72.1	99 MHz 3 dBm	Next Peak
#HVg Log 20											Nevt Pk Pight
dB/ Offst 10.4											
dB DI - 70.0											Next Pk Left
dBm PAvg				· ·		>					Min Search
M1 S2 S3 FC AA											Pk-Pk Search
£ (f): #f>50k Swp											Mkr→CF
Start 7 #Res B	769.00 3W 30 ki	MHz Hz		#V	 BW 1 M	Hz	#Sn	Sto Veep 30	р 775.0 0 s (60	00 MHz 1 pts)	More 1 of 2
Copyr	iaht 20	100-20	10 Ac	ilent T	echnol	naies					

In receive band



High Channel – 804.9 MHz



Report Number: R1212274-90



+12MHz to +400kHz



-400kHz to -12MHz
Mkr1 792,900 MHz Ref 20 dB -65.37 dBm Next Pe #Avg -65.37 dBm Next Pe 20 dB/ 0 0 Next Pe	R L Peak Search					jilent	🔆 Ag
#Hvg Log 20 dB/	Mkr1 792.900 MHz dB	Mkr1		20 dB	Atten	dBm	Ref 20
20 dB/ Next Pk Rig							#Hvg Loa
	Next Pk Right						20 JB7
Offst							ab/ Offst
dB Next Pk I	Next Pk Left						10.4 dB
							DI
dBm Min Soor	Min Search						-45.0 dBm
PAvg							PAvg
M1 S2	Die Die Counce						M1 S2
S3 FC PK-PK Sear	PK-PK Search						S3 FC AA
£(f):							£ (f):
Flun Mkr →	Mkr → CF						Flun Swp
Start 775.000 MHz Stop 792.900 MHz 1 o	Stop 792,900 MHz 1 of 2	Stop			2	75.000 MHz	Start 7
*Res DM S0 KHZ *VDW 1 MHZ *Sweep S0 S (601 pts)	*VDW I MHZ *Sweep 30 s (601 pts)	#SWeep 34	hnologies	#VBW	2010 04	w 30 KH2 iaht 2000-	Tonwr

-12MHz to receive band

🔆 Ag	jilent								F	?Т	Peak Search
Ref 20	dBm		Atten	20 dB				Mkr	1 774. -71.6	91 MHz 7 dBm	Next Peak
#Hvg Log 20 dB/											Next Pk Right
Offst 10.4 dB DI											Next Pk Left
-70.0 dBm PAvg											Min Search
M1 S2 S3 FC AA											Pk-Pk Search
€(f): f>50k Swp											Mkr → CF
Start 7 #Res B	769.00 W 30 kl	MHz Hz	^	#V	BW 1 M	Hz	#\$1	Sto weep 31)p 775.0 0 s (60	00 MHz 1 pts)	More 1 of 2
Copyr	ight 26	100-20	J10 Ag	ilent T	echnol	ogies					

In receive band

769-775 MHz, C4FM

🔆 Agilent Freq/Channel Center Freq 769.1 MHz Ch Freq Trig Free 769.100000 MHz Adj Channel Power PASS Center 769.1000000 MHz Start Freq 769.000000 MHz Ref 35 dBm Atten 40 dB Stop Freq #Avg 769.200000 MHz Log 10 CF Step dB/ 20.0000000 kHz Offst Man <u>Auto</u> 10.4 dB FreqOffset 0.00000000 Hz alle site Center 769.100 0 MHz #Res BW 200 Hz Span 200 kHz #VBW 200 Hz Sweep 3.156 s (601 pts) RMS Results Freq Offset Carrier Power 9.375 kHz 20 85 dBm / 15.63 kHz Signal Track Ref BW dBc Lower 6.250 kHz -46.69 6.250 kHz -62.35 6.250 kHz -67.02 25.00 kHz -65.14 25.00 kHz -65.14 dBc Uppe dBn dBr 0n <u>Off</u> -17.85 -33.51 -38.17 -49.87 -63.21 -66.01 -64.29 -21.02 21.88 kHz 37.50 kHz -37.1712.5000 kHz -36.30 kH7 25.00 kHz -69.2541 -70.14 41 71.54 .00 kHz kH7 Copyright 2000–2011 Agilent Technologie

Low Channel – 769.1 MHz



🔆 Ag	jilent								R	Т	Peak Search
Ref 20 #Avg	dBm		Atten	20 dB				Mkr1	768.70 -51.51	0 MHz dBm	Next Peak
Log 20 dB/ Offst											Next Pk Right
10.4 dB DI -45.0										1	Next Pk Left
dBm PAvg		<u> </u>									Min Search
M1 S2 S3 FC AA											Pk-Pk Search
£(f): #f>50k Swp											Mkr→CF
Start 7 #Res B	257.100 W 30 ki	∣ MHz Hz	^	#\	 /BW 1 M	lHz	#\$	Stop weep 30	768.700 ð s (601	0 MHz pts)	More 1 of 2
Copyr	ight 20	<u>000-2</u> 1	010 Hg	llent	echno	ogies					

-12MHz to -400kHz



+400kHz to +12MHz

🔆 Agilent			RT	Peak Search
Ref 20 dBm Atten #Avg	20 dB	Mkr1 7 -	81.100 MHz 62.56 dBm	Next Peak
Log 20 dB/ 0ffst				Next Pk Right
10.4 dB DI				Next Pk Left
-45.0 t dBm PAvg				Min Search
M1 S2 S3 FC AA				Pk-Pk Search
£(f): #f>50k Swp				Mkr → CF
Start 781.100 MHz #Res BW 30 kHz	#VBW 1 MHz	Stop 7: #Sweep 30 s	99.000 MHz (601 pts)	More 1 of 2
Copyright 2000-2010 Ag	ilent Technologies			

+12MHz to receive band



In receive band



Middle Channel – 772 MHz



Report Number: R1212274-90

🔆 Agilent		R T 🗌	Peak Search
Ref 20 dBm At #Avg	M tten 20 dB	kr1 771.600 MHz -51.01 dBm	Next Peak
Log 20 dB/ 0ffst			Next Pk Right
10.4 dB DI 			Next Pk Left
dBm Array			Min Search
M1 S2 S3 FC AA		F	Pk-Pk Search
£(f): #f>50k Swp			Mkr → CF
Start 760.000 MHz^ #Res BW 30 kHz	#VBW 1 MHz #Swee	Stop 771.600 MHz p 30 s (601 pts)	More 1 of 2
Copyright 2000-2010	0 Agilent Technologies		

-12MHz to -400kHz



+400kHz to +12MHz

🔆 Agil	lent								R	Т	Peak Search
Ref 20 #Avg	dBm		Atten	20 dB				Mkr1	784.00 -61.72	0 MHz dBm	Next Peak
Log 20 dB/ Offst											Next Pk Right
10.4 dB											Next Pk Left
-45.0 dBm PAvg	_										Min Search
M1 S2 S3 FC AA											Pk-Pk Search
£ (f): #f>50k Swp _											Mkr → CF
Start 78 #Res BW	34.000 I 30 kl	MHz Iz		#\	BW 1 M	Hz	#Sv	Stop Veep 30	799.00 0 s (601	0 MHz pts)	More 1 of 2
Copyrig	ght 20	100-20	J10 Ag	illent T	echnol	ogies					

+12MHz to receive band

🔆 Ag	jilent								R	? T	Peak Search
Ref 20	dBm		Atten	20 dB				Mkr	1 800. -71.3	00 MHz 2 dBm	Next Peak
#Hvg Log 20											
20 dB/ Offet											Next Pk Right
10.4 dB											Next Pk Left
DI -70.0		1									
dBm PAvg		V									Min Search
M1 S2											
S3 FC AA											Pk-Pk Search
£ (f): ≢f>50k											Mkr → CF
Ѕ₩р											
Start 7 #Res B	799.00 W 30 k	MHz Hz		- #\	BW 1 M	IHz	#S\	Sto veep 3	op 805.0 0 s (60	00 MHz 1 pts)	More 1 of 2
Copyr	ight 21	000-20)10 Ag	ilent T	echnol	ogies					

In receive band

High Channel – 774.9 MHz





🔆 Agile	ent								R	Т	Peak Search
Ref 20 d #Ava	lBm		Atten	20 dB				Mkr1	774.50 -51.90	0 MHz dBm	Next Peak
Log 20 dB/											Next Pk Right
dB										1	Next Pk Left
-45.0 dBm PAvg						- ^	^	/			Min Search
M1 S2 S3 FC AA											Pk-Pk Search
≇f>50k \$wp											Mkr → CF
Start 762 #Res BW	2.900 30 kH:	MHz z		#V	BW 1 M	Hz	#S1	Stop weep 30	774.500)s(601) MHz pts)	More 1 of 2
COBALIA	11 20	00-20	TO US	nent i	Conno	09165					

-12MHz to -400kHz



+400kHz to +12MHz

FCC ID: WT7PTMDT500760B

🔆 Agil	lent								R	Т	Peak Search
Ref 20 #Avg	dBm		Atten	20 dB				Mkr1	786.90 -62.44	0 MHz dBm	Next Peak
Log 20 dB/ 0ffet											Next Pk Right
10.4 dB											Next Pk Left
-45.01 dBm PAvg	·								· · · · ·		Min Search
M1 S2 S3 FC AA											Pk-Pk Search
€(f): - #f>50k Swp -											Mkr → CF
Start 78 #Res BW	786.900 MHz *Stop 799.000 MHz 8W 30 kHz #VBW 1 MHz #Sweep 30 s (601 pts)									More 1 of 2	
Copyrig	ght 20	00-20)10 Ag	ilent T	echno	ogies					

+12MHz to receive band

🔆 Ag	ilent								F	₹ Т	Peak Search
Ref 20	dBm		Atten	20 dB				Mkr	1 802. -71.3	.90 MHz 32 dBm	Next Peak
Log 20 dB/											Next Pk Right
Offst 10.4 dB DI											Next Pk Left
-70.0 dBm PAvg											Min Search
M1 S2 S3 FC AA											Pk-Pk Search
£ (f): #f>50k Swp											Mkr → CF
Start 7 #Res B	'99.00 W 30 k	MHz Hz	^	#V	BW 1 M	Hz	#\$	Sto weep 3	op 805. 0 s (60	00 MHz 1 pts)	More 1 of 2
Cupyri	ignt Zi	000-21	ara Hõ	ment I	ecnino	ugres					

In receive band

799-805 MHz, C4FM

* Agilent	Freq/Channel
Ch Freq 799.1 MHz Trig Free Adi Channel Power PASS	Center Freq 799.100000 MHz
Center 799.1000000 MHz	Start Freq 799.000000 MHz
Ref 30 dBm Atten 30 dB #Avg Log	Stop Freq 799.200000 MHz
10 dB/ 0ffst	CF Step 20.0000000 kHz <u>Auto</u> Man
dB Lynninger and the second se	FreqOffset 0.00000000 Hz
#Res BW 200 Hz #VBW 200 Hz Sweep 3.156 s (601 pts) RMS Results Freq Offset Ref BW dBc Lower dBm dBc Upper dBm Carrier Power 0.375 kHz -5410 -2432 -4470 -1492	Signal Track On Off
29.82 48m / 15.53 kHz 6.250 kHz -24.37 -44.47 -14.97 29.82 48m / 15.63 kHz 6.250 kHz -68.13 -34.17 -63.05 -33.23 12.5000 kHz 21.88 kHz 6.250 kHz -68.14 -38.32 -67.60 -37.78 37.50 kHz 25.00 kHz -65.21 -35.39 -66.10 -36.28 62.50 kHz 25.00 kHz -71.28 -41.46 -70.67 -40.85 87.50 kHz 25.00 kHz -72.75 -42.92 -72.35 -42.53	
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Low Channel – 799.1 MHz



Report Number: R1212274-90

FCC ID: WT7PTMDT500760B



+12MHz to +400kHz



-400kHz to -12MHz

🔆 Agilent					R	Т	Peak Search
Ref 20 dBm #Avg	Atten	20 dB		Mkr1	787.100 -64.66	MHz dBm	Next Peak
Log 20 dB/							Next Pk Right
10.4 dB						1	Next Pk Left
-45.0 dBm PAvg							Min Search
M1 S2 S3 FC AA							Pk-Pk Search
£ (f): #f>50k Swp							Mkr → CF
Start 775.000 MH #Res BW 30 kHz	z	#VBW 1 M	1Hz	Stop #Sweep 30	787.100)s(601	MHz pts)	More 1 of 2
Copyright 2000	-2010 Ag	ilent Techno	logies				

-12MHz to receive band

🔆 Ag	ilent								F	?Т	Peak Search
Ref 20	dBm		Atten	20 dB				Mkr	1 774. -72.2	77 MHz 5 dBm	Next Peak
#Hvg Log 20											
dB/ Offst											Next Pk Right
10.4 dB											Next Pk Left
л -70.0 dBm											Min Coorah
PAvg											min search
M1 S2 S3 FC											Pk-Pk Search
=== £(f): #f>50k											Mkr > CF
Swp											
Start 7 #Res B	'69.00 W 30 kl	MHzî Hz		+V	BW 1 M	Hz	#Sy	Sto veep 3	op 775.0 0 s (60	00 MHz 1 pts)	More 1 of 2
Copyri	ight 20	000-2	010 A	gilent T	echnol	ogies					

In receive band

Middle Channel – 802 MHz





Report Number: R1212274-90

Mkr1 802.400 MHz Next Peak #Avg	🔆 Agilent					R	Т	Peak Search
Log 20 Next Pk Right 20 Next Pk Right 0ffst Next Pk Left 10.4 Next Pk Left 04 Next Pk Left 05 Next Pk Left 06 Next Pk Left 07 Next Pk Left 08 Next Pk Left 09 Next Pk Left Next Pk Left Min Search 08 Next Pk Left 09 Next Pk Left 01 Next Pk Left 04 Next Pk Left 050 Next Pk	Ref 20 dBm #Ava	Atten	20 dB		Mkr1	802.400 -47.72	MHz dBm	Next Peak
Offst 10.4 10.4 Next Pk Left DI -45.0 Min Search dBm 1 1 1 PAvg 1 1 1 M1 S2 S3 FC 1 1 AA 1 1 1 AF 1 1 1 PK-Pk Search 1 1 AF 1 1 Stop 814.000 MHz 1 of 2 *Res EW 30 kHz *VEW 1 MHz *Sweep 30 s (601 pts)	Log 20 dB/							Next Pk Right
43.0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 <td>10.4 dB</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Next Pk Left</td>	10.4 dB							Next Pk Left
M1 S2 S3 FC AA £(f): *f>50k Swp Start 802.400 MHz *Res BW 30 kHz *VBW 1 MHz *Sweep 30 s (601 pts) AB *VBW 1 MHz *Sweep 30 s (601 pts)	dBm PAvg		^					Min Search
€(f): Mkr → CF #f>50k Mkr → CF Swp Start 802.400 MHz Start 802.400 MHz Stop 814.000 MHz #Res BW 30 kHz #VBW 1 MHz	M1 S2 S3 FC AA							Pk-Pk Search
Start 802.400 MHz Stop 814.000 MHz More #Res BW 30 kHz #VBW 1 MHz #Sweep 30 s (601 pts)	£ (f): #f>50k Swp							Mkr → CF
Conversion A 2000 2010 Avilant Technologies	Start 802.400 #Res BW 30 kH	MHz Iz	#VBW 1 M	Hz #Sv	Stop Yeep 30	814.000 s (601	MHz pts)	More 1 of 2

+12MHz to +400kHz



-400kHz to -12MHz

🔆 Ag	jilent								R	Т	Peak Search
Ref 20 #Ava	dBm		Atten	20 dB				Mkr1	790.00 -65.06	0 MHz dBm	Next Peak
Log 20 dB/ Offet											Next Pk Right
10.4 dB DI										1	Next Pk Left
-45.0 dBm PAvg				·····	·					`	Min Search
M1 S2 S3 FC AA											Pk-Pk Search
£(†): #f>50k Swp											Mkr → CF
Start 7 #Res B	75.000 W 30 ki	MHz Hz	^	#\	BW 1 M	Hz	#S	Stop weep 30	790.00 ðs(601	0 MHz pts)	More 1 of 2
Copyr	ignt 20	900-2I	ata Hõ	ment i	ecnno	ugres					

-12MHz to receive band

🔆 🔆 🔆	jilent								F	T	Peak Search
Ref 20	dBm		Atten	20 dB				Mkr	1 769. -72.2	51 MHz 6 dBm	Next Peak
+nvg Log 20 dB/											Next Pk Right
Uffst 10.4 dB DI											Next Pk Left
-70.0 dBm PAvg											Min Search
M1 S2 S3 FC AA											Pk-Pk Search
£ (f): #f>50k Swp											Mkr→CF
Start 7 #Res B	 769.00 3W 30 kl	MHz Hz	^	#\	BW 1 M	Hz	#Sv	Sto Veep 31	р 775.0 0 s (60	00 MHz 1 pts)	More 1 of 2
lCapyr	iaht 20	300-2I	010 A<	ilent T	echnol	naies					

In receive band

High Channel – 804.9 MHz





🔆 Agilent				RT	Peak Search
Ref 20 dBm #Avg	Atten 20 dB		Mkr1	805.300 MHz -48.09 dBm	Next Peak
Log 20 dB/ Offst					Next Pk Right
10.4 dB					Next Pk Left
dBm PAvg					Min Search
M1 S2 S3 FC AA					Pk-Pk Search
£ (f): FTun Swp					Mkr→CF
Start 805.300 MHz #Res BW 30 kHz	2010 Agilent T	BW 1 MHz	Stop #Sweep 30	816.900 MHz 0 s (601 pts)	More 1 of 2

+12MHz to +400kHz



-400kHz to -12MHz

FCC ID: WT7PTMDT500760B

Mkr1 792.900 MHz Next Peak #Avg	🔆 Agilent		RT	Peak Search
Log 20 dB/ 0ffst 10.4 dB DI -45.0 dBm PAvg Min Search Min Search PAvg Min Search PAvg Min Search PAvg Start 775.000 MHz #Res BW 30 kHz #VBW 1 MHz #VBW 1 M	Ref 20 dBm Atter #Avg	20 dB	Mkr1 792.900 MHz _65.13 dBm	Next Peak
01.4	Log 20 dB/			Next Pk Right
-45.0 dBm Min Search PAvg Min Search PAvg Pk-Pk Search AR Pk-Pk Search AR Pk-Pk Search AR Pk-Pk Search Start 775.000 MHz More #Res BW 30 kHz #VBW 1 MHz #Sweep 30 s (601 pts)	DI			Next Pk Left
M1 S2 S3 FC Pk-Pk Search AA AA AA £(f): Mkr → CF FTun Mkr → CF Swp Start 775.000 MHz ¥Res BW 30 kHz #VBW 1 MHz	-45.0 dBm PAvg			Min Search
€(f): Mkr → CF Swp Start 775.000 MHz Start 775.000 MHz *VBW 1 MHz *Res BW 30 kHz *VBW 1 MHz	M1 S2 S3 FC AA			Pk-Pk Search
Start 775.000 MHz Stop 792.900 MHz More #Res BW 30 kHz #VBW 1 MHz #Sweep 30 s (601 pts)	£ (f): FTun Swp			Mkr→CF
Conviriant 2000, 2010, Onitont Technologica	Start 775.000 MHz #Res BW 30 kHz	#VBW 1 MHz #Si	Stop 792.900 MHz weep 30 s (601 pts)	More 1 of 2

-12MHz to receive band



In receive band

809-824 MHz, TETRA

BW/Avg 🔆 Agilent Res BW Ch Freq 809.1 MHz Trig Free 200.0 Hz Man Auto Adj Channel Power Video BW 200.0 Hz Man Auto Ref 30 dBm Atten 20 dB VBW/RBW #Avg 1.00000 .0g Man <u>Auto</u> 10 dB/ Average 10Offst Off 0n 20.5łR Avg/VBW Type Marthan Parting 14 W W WW Pwr (RMS) Center 809.100 0 MHz Span 218 kHz´ <u>Auto</u> Man #Res BW 200 Hz VBW 200 Hz Sweep 3.478 s (601 pts) RMS Results Freq Offset Carrier Power 25.00 kHz 29.82 dBm / 20.00 kHz Ref BW dBc Lower dBm Upper dBc -58.17 -69.07 -74.95 -77.70 -58.57 -70.11 -74.68 -77.12 18.00 kHz 18.00 kHz -28.35 -39.24 -28.74 5.00 kHz 18.00 kHz -45.12 -44.86 Span/RBW 25.0000 kHz 100.0 kHz 18.00 kHz -47.88-47.30106 <u>Auto</u> Man Copyright 2000–2010 Agilent Technologies

Low Channel – 809.1 MHz

Middle Channel – 815 MHz



High Channel – 823.9 MHz



854-869 MHz, TETRA





Middle Channel – 860 MHz



High Channel – 868.9 MHz



ACP (Low Power)

769-775 MHz, D-LMR

Low Channel – 769.1 MHz





Report Number: R1212274-90

🔆 Agilent								R	Т	Peak Search
Ref 0 dBm #Avg		#Atten	0 dB				Mkr1	768.70 -64.35	0 MHz dBm	Next Peak
Log 20 dB/ Offst										Next Pk Right
10.4 dB DI -60.0							. <u> </u>			Next Pk Left
dBm PAvg										Min Search
M1 S2 S3 FC AA										Pk-Pk Search
£(f): FTun Swp										Mkr → CF
Start 757.1 #Res BW 30	00 MHz 0 kHz	31.0 0-	^ #V	BW 1 M	Hz	#S\	Stop weep 30	768.70)s(601	0 MHz pts)	More 1 of 2
CobALidut	2000-20	are Hå	nent i	ecnnui	ugies					

-12MHz to -400kHz

🔆 👫 Ag	jilent								R	?Т	Peak Search
Ref 0	dBm		#Atter	n Ø dB				Mkr1	769.5 -63.7	00 MHz 8 dBm	Next Peak
#Hvg Log											
20 dB/											Next Pk Right
0ffst 10.4	1 ¢										
ab Dl	<u> </u>		_/								Next PK Left
-60.0 dBm											Min Search
PAvg											
M1 S2 S3 FC											Pk-Pk Search
АА £ (f):	l										
FTun Swp											Mkr → CF
o		<u>мп</u> _						<u></u>	701 10	20 MU-	More
#Res E	703.500 3W 30 kl	Hz		#V	BW 1 M	Hz	#S\	чеер 30 Чеер 30	701.10) s (60	1 pts)	1 of 2
Copyr	ight 20	00-20	10 Ag	ilent T	echnol	ogies					

+400kHz to +12MHz

🔆 Agil	ent								R	Т	Peak Search
Ref0d #Avg	Bm		#Atte	n 0 dB				Mkr1	781.10 -76.51	0 MHz .dBm	Next Peak
Log 20 dB/ Offst											Next Pk Right
10.4 dB 1 DI 2											Next Pk Left
-60.0 dBm PAvg											Min Search
M1 S2 S3 FC AA											Pk-Pk Search
£ (f): - FTun Swp -											Mkr → CF
Start 78 #Res Bla	31.100 V 30 kl	MHz Iz		#\	BW 1 M	Hz	#S\	Stop veep 3(799.00) s (601	0 MHz pts)	More 1 of 2
Copyrig	ght 20	00-2	010 Aş	ilent T	echnol	ogies					

+12MHz to receive band



In receive band

Note: The noise floor is above the limit at 30 kHz, therefore the RBW was reduced to 4.3 kHz to show that no emissions are present.

Middle Channel – 772 MHz





🔆 Ag	jilent								R	Т	Peak Search
Ref0 #Avg	dBm		#Atter	n 0 dB				Mkr1	771.60 -65.49	00 MHz 5 dBm	Next Peak
Log 20 dB/ Affst											Next Pk Right
10.4 dB DI								/			Next Pk Left
-60.0 dBm PAvg											Min Search
M1 S2 S3 FC AA											Pk-Pk Search
£(†): FTun Swp											Mkr → CF
Start 7 #Res B	760.000 3W 30 ki	MHz Hz		#V	BW 1 M	Hz	#S	Stop Weep 30	771.60)s (601	0 MHz L pts)	More 1 of 2
Copyr	ight 26	100-21	010 Hg	lient i	echnol	ogies					

-12MHz to -400kHz



+400kHz to +12MHz

🔆 Ag	jilent								R	Т	Peak Search
Ref0 #Avg	dBm		#Atter	n 0 dB				Mkr1	784.00 -76.27	0 MHz dBm	Next Peak
Log 20 dB/ Offst											Next Pk Right
10.4 dB	1 2										Next Pk Left
-60.0 dBm PAvg											Min Search
M1 S2 S3 FC AA											Pk-Pk Search
€(f): FTun Swp											Mkr → CF
Start 7 #Res B	784.000 W 30 ki	MH2 Hz		#\	BW 1 M	Hz	#Sv	Stop veep 30	799.000 ð s (601	0 MHz pts)	More 1 of 2
Copyri	ight 20	100-20	J10 Ag	ilent T	echnol	ogies					

+12MHz to receive band



In receive band

Note: The noise floor is above the limit at 30kHz, therefore the RBW was reduced to 4.3kHz to show that no emissions are present.

High Channel – 774.9 MHz





Report Number: R1212274-90

🔆 Agilent					R	Т	Peak Search
Ref0dBm #Avg	#Atten	0 dB		Mkr1	774.50 -63.73	0 MHz dBm	Next Peak
Log 20 dB/ Offst							Next Pk Right
10.4 dB DI							Next Pk Left
dBm PAvg							Min Search
M1 S2 S3 FC AA							Pk-Pk Search
£(f): FTun Swp							Mkr → CF
Start 762.900 #Res BW 30 kH	MHz z	#VBW 1 M	Hz #	^ Stop Sweep 30	774.50 0 s (601	0 MHz pts)	More 1 of 2
Copyright 20	00-2010 Hgi	ient l'échnoi	ogies				

-12MHz to -400kHz

🔆 Agilent				RT	Peak Search
Ref 0 dBm	#Atten 0 dB		Mkr1	775.300 MHz -63.40 dBm	Next Peak
*nvg Log 20 dB/					Next Pk Right
10.4 dB DI -60.0	"_ <u>۸. </u>		<u></u>	·····	Next Pk Left
dBm PAvg					Min Search
M1 S2 S3 FC AA					Pk-Pk Search
£ (f): FTun Swp					Mkr → CF
Start 775.300 MHz #Res BW 30 kHz	#V	BW 1 MHz	Stop #Sweep 30	786.900 MHz)s(601 pts)	More 1 of 2

+400kHz to +12MHz

🔆 Ag	jilent								R	Т	Peak Search
Ref Ø #Ava	dBm		#Atter	n 0 dB				Mkr1	786.900 -76.45) MHz dBm	Next Peak
Log 20 dB/ Offst											Next Pk Right
10.4 dB DI	1 \$										Next Pk Left
dBm PAvg											Min Search
M1 S2 S3 FC AA											Pk-Pk Search
€(f): FTun Swp											Mkr → CF
Start 7 #Res B	786.900 3W 30 ki	MHz Hz		#\	BW 1 M	Hz	#S\	Stop Weep 30	799.000 ð s (601	MHz pts)	More 1 of 2
Copyr	ight 20	100-20)10 Ag	ilent T	echnol	ogies					

+12MHz to receive band



In receive band

Note: The noise floor is above the limit at 30kHz, therefore the RBW was reduced to 4.3kHz to show that no emissions are present.

799-805 MHz, D-LMR

Freq/Channel 🔆 Agilent Center Freq Ch Freq 799.1 MHz Trig Free 799.100000 MHz Adj Channel Power Center 799.1000000 MHz Start Freq 799.000000 MHz Ref 15 dBm #Avg Atten 20 dB Stop Freq 799.200000 MHz Log 10 CF Step dB/ 20.0000000 kHz Auto Man Offst 10.4 <u>Auto</u> dR Center 799.100 0 MHz #Res BW 200 Hz FreqOffset 0.00000000 Hz WW WWWWWW Span 200 kHz Sweep 3.156 s (601 pts) VBW 200 Hz Signal Track
 RMS Results
 Freq Offset

 Carrier Power
 15.63 kHz

 14.15 dBm /
 21.88 kHz

 25.0000 kHz
 37.50 kHz

 62.50 kHz
 62.50 kHz
 Ref BW 6.250 kHz 6.250 kHz 25.00 kHz 25.00 kHz dBc Lower -52.64 -65.78 -65.89 -70.39 -74.01 _{dBc} Upper -60.00 -66.09 -64.91 dBm dBr 0n <u>Off</u> -38.49 -51.64 -51.74 -45.85-51.95 37.50 kHz 62.50 kHz 25.00 kHz -56.25 -71.5549 kHz 25.00 kHz -59.87 -74.32 File Operation Status, C:\1ICACP25.STA file loaded

Low Channel – 799.1 MHz

* Agilent	Freq/Channel
Ch Freq 799.1 MHz Trig Free Adj Channel Power	Center Freq 799.100000 MHz
Center 799.1000000 MHz	Start Freq 798.700000 MHz
Ref 15 dBm Atten 20 dB #Avg Log	Stop Freq 799.500000 MHz
10 dB/ 0ffst 10.4	CF Step 80.0000000 kHz <u>Auto</u> Man
dB Center 799.100 0 MHz Span 800 kHz	FreqOffset 0.00000000 Hz
#Kes BW 200 Hz #VBW 200 Hz Sweep 12.84 s (601 pts) RMS Results Freq Offset Ref BW dBc Lower dBm dBc Upper dBm Carrier Power 150.0 kHz 100.0 kHz -71.73 -57.30 -71.58 -57.16	Signal Track On <u>Off</u>
14.43 dBm / 250.0 kHz 100.0 kHz -/5.44 -61.01 -/5.31 -60.89 25.0000 kHz 350.0 kHz 100.0 kHz -75.06 -60.63 -74.51 -60.08	
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🔆 Ag	jilent								R	Т	Peak Search
Ref0 #Avg	dBm		#Atter	n 0 dB				Mkr1	799.50 -64.87	0 MHz dBm	Next Peak
Log 20 dB/ Offst											Next Pk Right
10.4 dB	1		_1								Next Pk Left
-60.0 dBm PAvg											Min Search
M1 S2 S3 FC AA											Pk-Pk Search
€(f): FTun Swp											Mkr → CF
Start 7 #Res B	799.500 3W 30 k	I MHz Hz		#\	BW 1 M	IHz	#S	Stop weep 30	811.100 9 s (601) MHz pts)	More 1 of 2
Copyr	ight 20	100-20	010 Ag	ilent T	echnol	ogies					

+12MHz to +400kHz



-400kHz to -12MHz

🔆 Ag	jilent								R	Т	Peak Search
Ref 0 #Avg	dBm		#Attei	n 0 dB				Mkr1	787.10 -76.50	00 MHz 0 dBm	Next Peak
Log 20 dB/ Offst											Next Pk Right
10.4 dB DI										1	Next Pk Left
-60.0 dBm PAvg											Min Search
M1 S2 S3 FC AA											Pk-Pk Search
€(f): FTun Swp											Mkr → CF
Start 7 #Res B	775.000 W 30 ki	I MHz Hz	^	#\	BW 1 M	Hz	#Sv	Stop Veep 30	787.10) s (601	0 MHz . pts)	More 1 of 2
Copyr	ight 20	100-20	010 Ag	ilent T	echnol	ogies					

-12MHz to receive band



In receive band

Note: The noise floor is above the limit at 30kHz, therefore the RBW was reduced to 4.3kHz to show that no emissions are present.

Middle Channel – 802 MHz





🔆 Ag	jilent								R	Т	Peak Search
Ref0 #Avg	dBm		#Atter	n 0 dB				Mkr1	802.4 -65.1	00 MHz 7 dBm	Next Peak
Log 20 dB/ Offst											Next Pk Right
10.4 dB <	1		_^_								Next Pk Left
-60.0 dBm PAvg											Min Search
M1 S2 S3 FC AA											Pk-Pk Search
€(f): FTun Swp											Mkr → CF
Start 8 #Res B	302.400 W 30 ki	^MHz Hz	10.0	#V	BW 1 M	Hz	#\$v	Stop Veep 30	814.00 ð s (60)0 MHz 1 pts)	More 1 of 2
Copyr	ignt 20	100-21	010 Hg	lient i	ecnnol	ogres					

+12MHz to +400kHz



-400kHz to -12MHz
🔆 Agilent				RΤ	Peak Search
Ref 0 dBm #Ava	#Atten 0 dB		Mkr1	790.000 MHz -76.45 dBm	Next Peak
Log 20 dB/					Next Pk Right
10.4 dB DI -60.0				1 0	Next Pk Left
dBm PAvg					Min Search
M1 S2 S3 FC AA					Pk-Pk Search
£(f): FTun Swp					Mkr → CF
Start 775.000 MH #Res BW 30 kHz	z #V -2010 Agilent T	BW 1 MHz	^ Stop #Sweep 30	790.000 MHz)s (601 pts)	More 1 of 2

-12MHz to receive band



In receive band

Note: The noise floor is above the limit at 30kHz, therefore the RBW was reduced to 4.3kHz to show that no emissions are present.

Report Number: R1212274-90

High Channel – 804.9 MHz





FCC ID: WT7PTMDT500760B

🔆 Ag	jilent								R	Т	Peak Search
Ref 0 #Ava	dBm		#Atter	n 0 dB				Mkr1	805.30 -64.73	0 MHz dBm	Next Peak
Log 20 dB/											Next Pk Right
Uffst 10.4 dB DI	1		M								Next Pk Left
-60.0 dBm PAvg											Min Search
M1 S2 S3 FC AA											Pk-Pk Search
€(f): FTun Swp											Mkr→CF
Start 8 #Res B	305.300 3W 30 kl	MHz Iz	10.04	#V	BW 1 M	Hz	#Sv	Stop Veep 30	816.900 0 s (601) MHz pts)	More 1 of 2
Copyr	ight 20	100-20	JIV Ag	llent T	echnol	ogies					

+12MHz to +400kHz



-400kHz to -12MHz

FCC ID: WT7PTMDT500760B

🔆 Agilent					R	: T	Peak Search
RefØdBm #Avg	#Atter	ı 0 dB		Mkr	1 792.9 -76.6	00 MHz 3 dBm	Next Peak
Log 20 dB/							Next Pk Right
10.4 dB DI						10	Next Pk Left
-60.0 dBm PAvg							Min Search
M1 S2 S3 FC AA							Pk-Pk Search
£(f): FTun Swp							Mkr → CF
Start 775.000 #Res BW 30 kH	MHz z 200-2010 Ac	#VBW 1	MHz	Sto #Sweep	p 792.90 30 s (60	00 MHz 1 pts)	More 1 of 2

-12MHz to receive band



In receive band

Note: The noise floor is above the limit at 30kHz, therefore the RBW was reduced to 4.3kHz to show that no emissions are present.

769-775 MHz, C4FM

* Agilent	Freq/Channel
Ch Freq 769.1 MHz Trig Free Adj Channel Power	Center Freq 769.100000 MHz
Center 769.1000000 MHz	Start Freq 769.000000 MHz
Ref 25 dBm Atten 30 dB #Avg	Stop Freq 769.200000 MHz
dB/ 0ffst 10.4	CF Step 20.0000000 kHz <u>Auto</u> Man
dB אין אין אין אין אין אין אין אין אין אין	Freq Offset 0.00000000 Hz
#Res BW 200 Hz VBW 200 Hz Sweep 3.156 s (601 pts) RMS Results Freq Offset Ref BW dBc Lower dBm dBc Upper dBm	Signal Track
Carrier Power 9.375 kHz 6.250 kHz -51.13 -25.81 -49.22 -23.90 25.31 dBm / 15.63 kHz 6.250 kHz -65.82 -39.70 -64.12 -38.80 12.5000 kHz 21.88 kHz 6.250 kHz -66.41 -41.10 -68.50 -43.19	
57.50 kH2 25.00 kH2 -55.54 -40.23 -55.50 -40.29 62.50 kHz 25.00 kHz -70.81 -45.49 -71.42 -46.11 87.50 kHz 25.00 kHz -72.28 -46.97 -72.41 -47.10	

Low Channel – 769.1 MHz

* Agilent	Freq/Channel
Ch Freq 769.1 MHz Trig Free Adj Channel Power	Center Freq 769.100000 MHz
Center 769.1000000 MHz	Start Freq 768.700000 MHz
Ref 25 dBm Atten 30 dB #Avg	Stop Freq 769.500000 MHz
10 dB/ Offst 10.4	CF Step 80.0000000 kHz <u>Auto</u> Man
dB Center 769.100 0 MHz Span 800 kHz	Freq Offset 0.00000000 Hz
*Res BW 200 Hz	Signal Track On <u>Off</u>
24.75 dBm / 250.0 kHz 100.0 kHz -75.08 -50.34 -74.18 -49.43 12.5000 kHz 350.0 kHz 100.0 kHz -76.79 -52.05 -75.23 -50.48	
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🔆 Agilent		RT	Peak Search
Ref10dBm Atte #Avg	en 10 dB	Mkr1 768.700 MHz -56.48 dBm	Next Peak
Log 20 dB/ 0ffst			Next Pk Right
			Next Pk Left
dBm PAvg			Min Search
M1 S2 S3 FC AA			Pk-Pk Search
£(f): FTun Swp			Mkr → CF
Start 757.100 MHz #Res BW 30 kHz	#VBW 1 MHz #Swe	Stop 768.700 MHz eep 30 s (601 pts)	More 1 of 2
Copyright 2000-2010	iglient l'échnologies		

-12MHz to -400kHz



+400kHz to +12MHz

🔆 Ag	jilent								R	Т	Peak Search
Ref 10 #Ava	dBm		Atten	10 dB				Mkr1	781.100 -68.63) MHz dBm	Next Peak
Log 20 dB/											Next Pk Right
10.4 dB DI	1										Next Pk Left
-50.0 dBm PAvg											Min Search
M1 S2 S3 FC AA											Pk-Pk Search
€(f): FTun Swp											Mkr → CF
Start 7 #Res B	781.100 3W 30 ki	MHz Hz		#\ #\	BW 1 M	Hz	#SI	Stop Weep 30	^799.000 ð s (601	MHz pts)	More 1 of 2
copyr	ight 24	000-20	010 Hg	lient i	ecnnol	ogies					

+12MHz to receive band

* Agilent	R T Peak Search
Ref 10 dBm Atten 10 dB	Mkr1 803.08 MHz -75.14 dBm Next Peak
Log 20 dB/	Next Pk Right
	Next Pk Left
-/5.0	Min Search
M1 S2 S3 FC AA	Pk-Pk Search
£(f): f>50k Swp	Mkr → CF
Start 799.00 MHz #Res BW 30 kHz #VBW 1 MHz #S	Stop 805.00 MHz More Sweep 30 s (601 pts) 1 of 2

Middle Channel – 772 MHz





🔆 Agile	ent								R	Т	Peak Search
Ref 10 c #Avg	dBm		Atten	10 dB				Mkr1	771.60 -56.33	0 MHz dBm	Next Peak
Log 20 dB/ Offst											Next Pk Right
10.4 dB		A									Next Pk Left
dBm PAvg											Min Search
M1 S2 S3 FC AA											Pk-Pk Search
£ (f): FTun Swp											Mkr → CF
Start 76 #Res BW	0.000 30 kl	MHz Iz	10 0-	#\	BW 1 M	Hz	#S\	Stop weep 30	771.600 0 s (601	0 MHz pts)	More 1 of 2
Coballa	mc 20	20	are uð	nent I	CONTRA	ogres					

-12MHz to -400kHz



+400kHz to +12MHz

🔆 Agiler	nt							R	Т	Peak Search
Ref 10 dE #Avg	3m	Atten	10 dB				Mkr1	784.00 -68.22	0 MHz dBm	Next Peak
Log 20 dB/ Offst										Next Pk Right
10.4 dB										Next Pk Left
-50.0 dBm PAvg										Min Search
M1 S2 S3 FC AA										Pk-Pk Search
€(f): FTun Swp										Mkr → CF
Start 784 #Res BW 3	.000 MHz 30 kHz		#V	BW 1 M	Hz	#Sv	Stop Yeep 30	799.000) s (601) MHz pts)	More 1 of 2
Copyrigh	t 2000-20)10 Agi	ilent T	echnol	ogies					

+12MHz to receive band

🔆 Agilent				F	х т	Peak Search
Ref 10 dBm	Atten	10 dB		.57 MHz 35 dBm	Next Peak	
HVg Log 20 dB/						Next Pk Right
dB					1	Next Pk Left
-75.0 dBm PAvg						Min Search
M1 S2 S3 FC AA						Pk-Pk Search
£(f): f>50k Swp						Mkr → CF
Start 799.00 #Res BW 30 k	MHz ^ Hz	#VBW 1 M	Hz #Sv	Stop 805. Weep 30 s (60	00 MHz 01 pts)	More 1 of 2
Copyright 2	000-2010 Ag	ilent Technol	ogies			

High Channel – 774.9 MHz





🔆 Ag	jilent								R	Т	Peak Search
Ref 10 #Avg	dBm		Atten	10 dB				Mkr1	774.50 -56.19	00 MHz 9 dBm	Next Peak
Log 20 dB/ Offst											Next Pk Right
10.4 dB DI 50.0								l		1	Next Pk Left
dBm PAvg											Min Search
M1 S2 S3 FC AA											Pk-Pk Search
€(f): FTun Swp											Mkr → CF
Start 7 #Res B	762.900 W 30 k) MHz Hz		#\/	BW 1 M	Hz	#Sv	Stop weep 30	774.50 0 s (601	0 MHz . pts)	More 1 of 2
Copyr	ight 20	<u>000-20</u>	010 Hg	ilent I	ecnnol	ogies					

-12MHz to -400kHz



+400kHz to +12MHz

🔆 Ag	jilent								R	Т	Peak Search
Ref 10 #Avg	dBm		Atten	10 dB				Mkr1	786.90 -68.45	0 MHz dBm	Next Peak
Log 20 dB/ Offst											Next Pk Right
10.4 dB DI	1										Next Pk Left
-50.0 dBm PAvg		-									Min Search
M1 S2 S3 FC AA											Pk-Pk Search
€(f): FTun Swp											Mkr → CF
Start 7 #Res B	786.900 3W 30 k) MHz ^ Hz		#V	BW 1 M	Hz	#Sv	Stop Veep 30	799.000 ð s (601) MHz pts)	More 1 of 2
Copyr	ight 20	<u> 100-2</u> 0	010 Ag	ilent T	echnol	ogies					

+12MHz to receive band



799-805 MHz, C4FM

Low Channel – 799.1 MHz



* Agilent	Freq/Channel
Ch Freq 799.1 MHz Trig Free Adi Channel Power	Center Freq 799.100000 MHz
Center 799.1000000 MHz	Start Freq 798.700000 MHz
Ref 25 dBm Atten 30 dB #AvgAtten 30 dB Log	Stop Freq 799.500000 MHz
10 dB/ 0ffst 10.4	CF Step 80.0000000 kHz <u>Auto</u> Man
dB Center 799.100 0 MHz Span 800 kHz	FreqOffset 0.00000000 Hz
#Res BW 200 Hz	Signal Track
Carrier Power 150.0 kHz 100.0 kHz -71.93 -46.20 -72.47 -46.75 25.73 dBm / 250.0 kHz 100.0 kHz -76.20 -50.47 -75.92 -50.20 12.5000 kHz 350.0 kHz 100.0 kHz -77.16 -51.43 -76.91 -51.19	On <u>Off</u>
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🔆 Ag	jilent								F	₹ T	Peak Search
Ref 10	dBm		Atten	10 dB				Mkr1	799.5 -52.2	00 MHz 4 dBm	Next Peak
#Hvg Log 20											
dB/ Offst											Next Pk Right
10.4 ; dB ⁴											Next Pk Left
–50.0 dBm		·	_A		t.		t	. <u> </u>			Min Cooroh
PAvg											min search
M1 S2 S3 FC											Pk-Pk Search
НН £ (f): БТир											
Swp											
Start 7 #Res B	1 799.500 3W 30 ki) MĤz Hz			BW 1 M	Hz	#SI	Stop Veep 30	811.1) 8 (60	00 MHz 1 pts)	More 1 of 2
Copyr	ight 20	000-20	010 Ag	ilent T	echnol	ogies					

+12MHz to +400kHz



🔆 Ag	ilent								F	₹ T	Peak Search
Ref 10	dBm		Atten	10 dB				Mkr1	787.1 -69.7	00 MHz '5 dBm	Next Peak
#Hvg Ina											
20											Nevt Pk Pight
dB/											Next FK Right
10.4											
dB										1	Next Pk Left
DI -50.0											
dBm											Min Search
PAvg											init oour on
M1 S2											
\$3 FC											Pk-Pk Search
AA CEDE											
FTun											Mkr → CF
Swp											
											More
Start 7	7 5.000	MHz	~			11_		Stop	787.1	00 MHz	1 of 2
#Kes B	W 30 K	HZ	10 0	₩V	DWIM	HZ	#31	veeр 30	0 S (60)1 pts)	
Copyri	ight 20	900- 20	ata Hà	lient i	ecnnol	ugies					

-12MHz to receive band



Teltronic S.A.U.

Middle Channel – 802 MHz





🔆 Ag	jilent								F	₹ T	Peak Search
Ref 10	dBm		Atten	10 dB				Mkr1	802.4 -52.8	00 MHz 5 dBm	Next Peak
#Hvg Log 20											
dB/ Offst											Next Pk Right
10.4 : dB ⁴			1.0								Next Pk Left
–50.0 dBm			+#A				t	. <u> </u>			Min Soorah
PAvg											
M1 S2 S3 FC											Pk-Pk Search
нн £(f): ЕТир											
Swp											
Start 8 #Res B	102.400 W 30 k	` MHz Hz			BW 1 M	Hz	#S\	Stop Weep 30	814.0) s (60	00 MHz 1 pts)	More 1 of 2
Copyr	ight 20	00-20	010 Ag	ilent T	echnol	ogies					

+12MHz to +400kHz



-400kHz to -12MHz

🔆 Ag	ilent								R	2 T	Peak Search
Ref 10 #Ava	dBm		Atten	10 dB				Mkr1	790.0 -69.9	00 MHz 1 dBm	Next Peak
Log 20 dB/											Next Pk Right
DI 10.4 DI										1	Next Pk Left
-30.0 dBm PAvg											Min Search
M1 S2 S3 FC AA											Pk-Pk Search
€(f): FTun Swp											Mkr → CF
Start 7 #Res B	'75.000 W 30 ki	MHz Hz		#V	BW 1 M	Hz	#Sv	Stop Yeep 30	790.00)s(60	00 MHz 1 pts)	More 1 of 2
Copyri	gnt 20	100-21	010 Hg	lient i	echnol	ogres					

-12MHz to receive band

Mkr1 773.99 MHz	
Ref 10 dBm Atten 10 dB -76.38 dBm Next	: Peak
Log 20 dB/ Offst	Right
III.4 dB DI	k Left
dBm Min Se	earch
M1 S2 S3 FC AA	earch
£(f):	r → CF
Start 769.00 MHz	More 1 of 2

High Channel – 804.9 MHz







+12MHz to +400kHz



-400kHz to -12MHz

🔆 Ag	ilent								R	Т	Peak Search
Ref 10	dBm		Atten	10 dB				Mkr1	792.9 -70.0	00 MHz 0 dBm	Next Peak
+HV9 Log 20 dB/											Next Pk Right
Offst 10.4 dB DI										1	Next Pk Left
-50.0 dBm PAvg											Min Search
M1 S2 S3 FC AA											Pk-Pk Search
€(f): FTun Swp											Mkr → CF
Start 7 #Res B	775.000 W 30 k	I MHz Hz	^	#\	BW 1 M	Hz	#S1	Stop veep 30	792.90 0 s (60)0 MHz 1 pts)	More 1 of 2
Copyr	ight 20	100-20	010 Ag	ilent T	echnol	ogies					

-12MHz to receive band



In receive band

809-824 MHz, TETRA

Low Channel - 809.1 MHz



Middle Channel – 815 MHz



High Channel – 823.9 MHz



854-869 MHz, TETRA





Middle Channel – 860 MHz



High Channel – 868.9 MHz

