RHEIN TECH LABORATORIES, INC.

Engineering Solutions & Electromagnetic Compatibility Services

FCC & ISED Certification Report

Harris Corporation
221 Jefferson Ridge Parkway
Lynchburg, VA 24501

Model: XL-200M
Multi-Band Mobile, VL/V/U/7/8/9

FCC ID: OWDTR-0161-E
IC: 3636B-0161

October 4, 2019

Standards Referenced for this Report	
Part 2: 2018	Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
Part 22: 2018	Public Mobile Services
Part 74: 2018	Experimental Radio, Auxiliary, Special Broadcast and Other Program Distributional Services
Part 80: 2018	Stations In The Maritime Services
Part 90: 2018	Private Land Portable Radio Services
Part 101: 2018	Fixed Microwave Services
ANSI C63.26-2017	American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services
RSS-119 Issue 12	Land Mobile and Fixed Radio Transmitters and Receivers 27.41 to 960.0 MHz

Report Prepared By: Daniel Baltzell

Document Number: 2019062TNB

This report may not be reproduced, except in full, without the full written approval of Rhein Tech Laboratories, Inc. and Harris Corporation. Test results relate only to the item tested.
This report replaces R0.0.

These tests are accredited and meet the requirements of ISO/IEC 17025 as verified by ANAB.
Refer to certificate and scope of accreditation AT-1445.

FCC Equipment Class: TNB

Grant Note	FCC Rule Part	Frequency Range (MHz)	Rated Transmit Power (W) (Conducted)	Frequency Tolerance (ppm)	Emission Designator	Transmit Mode
EF	22, 80, 90	33 – 50	100.0	0.0	16K0F3E	Analog Voice; WB
EF	22, 80, 90	33 – 50	100.0	0.0	11K0F3E	Analog Voice; NB
EF	22, 74, 80	136–174	50.0	0.0	16K0F3E	Analog Voice; WB
EF	22, 74, 80, 90	136–174	50.0	0.0	11K0F3E	Analog Voice; NB
EF	22, 74, 80	136–174	50.0	0.0	16K0F1D/E	EDACS 2-Level FSK 9600 Data/Digital Voice; WB
EF	22, 74, 80, 90	136–174	50.0	0.0	11K7F1D/E	EDACS 2-Level FSK 9600 Data/Digital Voice; NB
EF	22, 74, 80, 90	136–174	50.0	0.0	7K10F1D/E	EDACS 2-level FSK 4800; Data/Digital Voice
EF	22, 74, 80, 90	136–174	50.0	0.0	8K40F1D/E	4-level C4FM Data/Voice; P25 Phase 1
EF	22, 74, 80, 90	136–174	50.0	0.0	8K10DXW	4-level H-CPM (TDMA) Data/Voice; P25 Phase 2
EF	22, 74, 80	378-406.0 406.1-470	50.0	0.0	16K0F3E	Analog Voice; WB
EF	22, 74, 80, 90	378-406.0 406.1-470	50.0	0.0	11K0F3E	Analog Voice; NB
EF	22, 74, 80	378-406.0 406.1-470	50.0	0.0	16K0F1D/E	EDACS 2-Level FSK 9600 Data/Digital Voice; WB
EF	22, 74, 80, 90	378-406.0 406.1-522	50.0	0.0	11K7F1D/E	EDACS 2-Level FSK 9600 Data/Digital Voice; NB
EF	22, 74, 80, 90	378-406.0 406.1-522	50.0	0.0	7K10F1D/E	EDACS 2-level FSK 4800; Data/Digital Voice
EF	22, 74, 80, 90	378-406.0 406.1-522	50.0	0.0	8K40F1D/E	4-level C4FM Data/Voice; P25 Phase 1
EF	22, 74, 80, 90	378-406.0 406.1-522	50.0	0.0	8K10DXW	4-level H-CPM (TDMA) Data/Voice; P25 Phase 2

Grant Note	FCC Rule Part	Frequency Range (MHz)	Rated Transmit Power (W) (Conducted)	Frequency Tolerance (ppm)	Emission Designator	Transmit Mode
EF	90	806 – 825	35.0	0.1	16K0F3E	Analog FM (Wideband)
EF	90	851 – 870	35.0	0.1	16K0F3E	
	90	896 – 901	35.0	0.1	16K0F3E	
EF	90, 101	935 – 944	35.0	0.1	16K0F3E	
EF	90	806 – 825	35.0	0.1	16K0F1D/E	2-level FSK 9600 Data/Digital Voice (Wideband)
EF	90	851 – 870	35.0	0.1	16K0F1D/E	
	90	896 – 901	35.0	0.1	16K0F1D/E	
EF	90, 101	935 – 944	35.0	0.1	16K0F1D/E	
EF	90	806 – 825	35.0	0.1	14K0F3E	Analog FM (NPSPAC)
EF	90	851 – 870	35.0	0.1	14K0F3E	
EF	90	806 – 825	35.0	0.1	14K0F1D/E	2-level FSK 9600 Data/Digital Voice (NPSPAC)
EF	90	851 – 870	35.0	0.1	14K0F1D/E	
EF	90	763 – 776	30.0	0.1	11K0F3E	Analog FM (Narrowband)
EF	90	793 – 806	30.0	0.1	11K0F3E	
EF	90	806 – 825	35.0	0.1	11K0F3E	
EF	90	851 – 870	35.0	0.1	11K0F3E	
	90	896 – 901	35.0	0.1	11K0F3E	
EF	90, 101	935 – 944	35.0	0.1	11K0F3E	
EF	90	763 – 776	30.0	0.1	11K7F1D/E	2-level FSK 9600 Data/Digital Voice (Narrowband)
EF	90	793 – 806	30.0	0.1	11K7F1D/E	
EF	90	806 – 825	35.0	0.1	11K7F1D/E	
EF	90	851 – 870	35.0	0.1	11K7F1D/E	
	90	896 – 901	35.0	0.1	11K7F1D/E	
EF	90, 101	935 – 944	35.0	0.1	11K7F1D/E	
	90	896 – 901	35.0	0.1	7K10F1D/E	2-level FSK 4800 Data/Digital Voice (XNarrowband)
EF	90, 101	935 – 944	35.0	0.1	7K10F1D/E	
EF	90	763 – 776	30.0	0.1	8K40F1D/E	C4FM Data/Voice
EF	90	793 – 806	30.0	0.1	8K40F1D/E	
EF	90	851 – 870	35.0	0.1	8K40F1D/E	
	90	896 – 901	35.0	0.1	8K40F1D/E	
EF	90, 101	935 – 944	35.0	0.1	8K40F1D/E	

Grant Note	FCC Rule Part	Frequency Range (MHz)	Rated Transmit Power (W) (Conducted)	Frequency Tolerance (ppm)	Emission Designator	Transmit Mode
EF	90	763 – 776	30.0	0.1	8K10DXW	H-CPM (TDMA) Data/Voice
EF	90	793 – 806	30.0	0.1	8K10DXW	
EF	90	851 – 870	35.0	0.1	8K10DXW	
	90	896 – 901	35.0	0.1	8K10DXW	
EF	90, 101	935 – 944	35.0	0.1	8K10DXW	
EF	90	763 – 776	30.0	0.1	18K5F1W	HVD-TDMA SMR
EF	90	793 – 806	30.0	0.1	18K5F1W	
EF	90	851 – 870	35.0	0.1	18K5F1W	
EF	90	806 – 825	35.0	0.1	12K9F1W	HVD-TDMA NPSPAC
EF	90	851 – 870	35.0	0.1	12K9F1W	

** power is conducted*

This device contains functions that are not operational in U.S Territories except as noted in the filing. The grant is requested to list extended frequencies as noted in the filing and Section 2.927(b) applies to this application.

Additionally, as this is a combined FCC and ISED test report, there are test frequencies contained within this report that may not be authorized for use in either the United States or Canada.

Also note that 901.9875 MHz data included in this report is for engineering purposes only.

Table of Contents

1 Test Result Summary Multi-Band Mobile, VL/V/U/7/8/9 16
2 General Information....16
2.1 Test Facility....16
2.2 Related Submittal(s)/Grant(s)....16
2.3 Grant Notes 16
2.4 Tested System Details....17
2.5 Configuration of Tested System 20
3 FCC Part 2.1033(C)(8): Voltages and Currents through the Final Amplifying Stage....20
4 FCC Part 2.1046(a): RF power output: Conducted; Part 90.541(d) Transmitting power and antenna height requirements; §80.215: Transmitter Power; §22.659: Effective Radiated Power Limits; Part 74.461: Transmitter Power; ISED RSS-119 4.1: Transmitter Output Power....21
4.1 Test Procedure 21
4.2 Test Data 21
5 FCC Part 2.1051: Spurious Emissions at Antenna Terminals; Part 90.210: Emission Limitations; §80.217: Suppression of Interference Aboard Ships; §22.359: Emission Limitations; ISED RSS-119 5.8: Transmitter Unwanted Emissions 23
5.1 Test Procedure 23
5.2 Test Data 23
6 FCC Part 90.543(a): Emission Limitations: ACP Requirements; ISED RSS-119 4.3: Adjacent Channel Power (ACP) Measurement for Equipment in the Bands 764-776 MHz and 794-806 MHz....25
6.1 Test Procedure 25
6.2 Test Data 27
7 FCC Part 90.210 and Part 2.1053(a): Field Strength of Spurious Emissions; Part 90.543: Out of Band Emissions Limit; ISED RSS-119 5.8: Transmitter Unwanted Emissions 58
7.1 Test Procedure 58
7.2 Test Data 58
8 FCC Part 2.1049(c)(1): Occupied Bandwidth; Part 90.210 Authorized Bandwidth; Part 74.462: Authorized Bandwidth and Emissions; Part 80.205: Bandwidths; §80.211: Emission Limitations; ISED RSS-119 5.5: Channel Bandwidth, Authorized Bandwidth, Occupied Bandwidth and Spectrum Masks..... **Error! Bookmark not defined.**
8.1 Test Procedure .... **Error! Bookmark not defined.**
8.2 Test Data .... **Error! Bookmark not defined.**
9 FCC Part 2.1055: Frequency Stability; Part 22.355: Frequency Tolerance; Part 74.464; Frequency Tolerance; Part 80.209: Frequency Stability; Part 90.213, Part 90.539: Frequency Stability; ISED RSS-119 5.3: Transmitter Frequency Stability .... **Error! Bookmark not defined.**
9.1 Test Procedure .... **Error! Bookmark not defined.**
9.2 Test Data .... **Error! Bookmark not defined.**
9.2.1 Frequency Stability/Voltage Variation .... **Error! Bookmark not defined.**
10 FCC §2.1047(a)(b): Modulation Characteristics; Part 74.463: Modulation Requirements; Part 80.213: Modulation Requirements; RSS-119 5.2: Types of Modulation .... **Error! Bookmark not defined.**
10.1 Test Procedures .... **Error! Bookmark not defined.**
10.1.1 Audio Frequency Response.... **Error! Bookmark not defined.**
10.1.2 Audio Low Pass Filter Response .... **Error! Bookmark not defined.**
10.1.3 Modulation Limiting .... **Error! Bookmark not defined.**
10.2 Test Data .... **Error! Bookmark not defined.**
10.2.1 Audio Frequency Response.... **Error! Bookmark not defined.**
10.2.2 Audio Low Pass Filter Response .... **Error! Bookmark not defined.**
10.2.3 Modulation Limiting .... **Error! Bookmark not defined.**

11 FCC Rules and Regulations Part 90.214: Transient Frequency Response; Part 74.462(c): Authorized Bandwidth and Emissions; RSS-119 5.9: Transient Frequency Behavior ..... **Error! Bookmark not defined.**
11.1 Test Procedure ..... **Error! Bookmark not defined.**
11.2 Test Data ..... **Error! Bookmark not defined.**
12 FCC Part 2.202: Necessary Bandwidth and Emission Bandwidth..... **Error! Bookmark not defined.**
13 Conclusion..... **Error! Bookmark not defined.**

Table of Figures

Figure 2-1: Configuration of Tested System 20

Table of Tables

Table 2-1: Equipment Under Test (EUT) 17
Table 2-2: Auxiliary Equipment 17
Table 4-1: RF Conducted Output Power – Measured....21
Table 4-2: Test Equipment Used For Testing RF Power Output - Conducted 22
Table 5-1: Test Equipment Used For Testing Spurious Emissions 24
Table 6-1: Adjacent Channel Power - 768.0125 MHz; NB Analog Mode (>400 kHz - RX Band)....27
Table 6-2: Adjacent Channel Power – 772.0000 MHz; NB Analog Mode (>400 kHz - RX Band)....28
Table 6-3: Adjacent Channel Power - 775.9875 MHz; NB Analog Mode (>400 kHz - RX Band)....29
Table 6-4: Adjacent Channel Power – 798.0125 MHz; NB Analog Mode (>400 kHz - RX Band)....30
Table 6-5: Adjacent Channel Power – 802.0000 MHz; NB Analog Mode (>400 kHz - RX Band)....31
Table 6-6: Adjacent Channel Power – 805.9875 MHz; NB Analog Mode (>400 kHz - RX Band)....32
Table 6-7: Adjacent Channel Power - 768.0125 MHz; NB 2-Level FSK 9600 (>400 kHz - RX Band)....33
Table 6-8: Adjacent Channel Power - 772.0000 MHz; NB 2-Level FSK 9600 (>400 kHz - RX Band)....34
Table 6-9: Adjacent Channel Power - 775.9875 MHz; NB 2-Level FSK 9600 (>400 kHz - RX Band)....35
Table 6-10: Adjacent Channel Power – 798.0125 MHz; NB 2-Level FSK 9600 (>400 kHz - RX Band) 36
Table 6-11: Adjacent Channel Power – 802.0000 MHz; NB 2-Level FSK 9600 (>400 kHz - RX Band) 37
Table 6-12: Adjacent Channel Power – 805.9875 MHz; NB 2-Level FSK 9600 (>400 kHz - RX Band) 38
Table 6-13: Adjacent Channel Power - 768.0125 MHz; C4FM Mode (>400 kHz - RX Band) 39
Table 6-14: Adjacent Channel Power - 772.0000 MHz; C4FM Mode (>400 kHz - RX Band) 40
Table 6-15: Adjacent Channel Power - 775.9875 MHz; C4FM Mode (>400 kHz - RX Band) 41
Table 6-16: Adjacent Channel Power – 798.0125 MHz; C4FM Mode (>400 kHz - RX Band) 42
Table 6-17: Adjacent Channel Power – 802.0000 MHz; C4FM Mode (>400 kHz - RX Band) 43
Table 6-18: Adjacent Channel Power – 805.9875 MHz; C4FM Mode (>400 kHz - RX Band) 44
Table 6-19: Adjacent Channel Power - 768.0125 MHz; H-CPM (TDMA) Mode (>400 kHz - RX Band) 45
Table 6-20: Adjacent Channel Power - 772.0000 MHz; H-CPM (TDMA) Mode (>400 kHz - RX Band) 46
Table 6-21: Adjacent Channel Power - 775.9875 MHz; H-CPM (TDMA) Mode (>400 kHz - RX Band) 47
Table 6-22: Adjacent Channel Power – 798.0125 MHz; H-CPM (TDMA) Mode (>400 kHz - RX Band)....48
Table 6-23: Adjacent Channel Power – 802.0000 MHz; H-CPM (TDMA) Mode (>400 kHz - RX Band)....49
Table 6-24: Adjacent Channel Power – 805.9875 MHz; H-CPM (TDMA) Mode (>400 kHz - RX Band)....50
Table 6-25: Adjacent Channel Power - 769.0125 MHz; WB HVD SMR Mode (>400 kHz - RX Band) 51
Table 6-26: Adjacent Channel Power - 772.0000 MHz; WB HVD SMR Mode (>400 kHz - RX Band) 52
Table 6-27: Adjacent Channel Power - 774.9875 MHz; WB HVD SMR Mode (>400 kHz - RX Band) 53
Table 6-28: Adjacent Channel Power – 799.0125 MHz; WB HVD SMR Mode (>400 kHz - RX Band)....54
Table 6-29: Adjacent Channel Power – 802.0000 MHz; WB HVD SMR Mode (>400 kHz - RX Band)....55
Table 6-30: Adjacent Channel Power – 804.9875 MHz; WB HVD SMR Mode (>400 kHz - RX Band)....56
Table 6-31: Test Equipment Used For Testing ACP Requirements....57
Table 7-1: Field Strength of Spurious Radiation – 33.0125 MHz 58
Table 7-2: Field Strength of Spurious Radiation – 40.0125 MHz 58
Table 7-3: Field Strength of Spurious Radiation – 511.9875 MHz 59
Table 7-4: Part 90.543(f): Out of Band Emissions Limit....59
Table 7-5: Test Equipment Used For Testing Field Strength of Spurious Radiation....59
Table 8-1: Test Equipment Used For Testing Occupied Bandwidth.... **Error! Bookmark not defined.**
Table 9-1: Temperature Frequency Stability – 33.0125 MHz .... **Error! Bookmark not defined.**
Table 9-2: Temperature Frequency Stability – 40.0125 MHz .... **Error! Bookmark not defined.**
Table 9-3: Temperature Frequency Stability – 48.9875 MHz .... **Error! Bookmark not defined.**
Table 9-4: Temperature Frequency Stability – 136.0125 MHz .... **Error! Bookmark not defined.**
Table 9-5: Temperature Frequency Stability – 155.0125 MHz .... **Error! Bookmark not defined.**

Table 9-6: Temperature Frequency Stability – 173.9875 MHz ..... **Error! Bookmark not defined.**
Table 9-7: Temperature Frequency Stability – 378.0125 MHz ..... **Error! Bookmark not defined.**
Table 9-8: Temperature Frequency Stability – 450.0125 MHz ..... **Error! Bookmark not defined.**
Table 9-9: Temperature Frequency Stability – 511.9875 MHz ..... **Error! Bookmark not defined.**
Table 9-10: Temperature Frequency Stability – 772 MHz ..... **Error! Bookmark not defined.**
Table 9-11: Temperature Frequency Stability – 815 MHz ..... **Error! Bookmark not defined.**
Table 9-12: Temperature Frequency Stability – 937.5 MHz ..... **Error! Bookmark not defined.**
Table 9-13: Test Equipment Used For Testing Temperature Frequency Stability**Error! Bookmark not defined.**
Table 9-14: Frequency Stability/Voltage Variation –136.0125 MHz ..... **Error! Bookmark not defined.**
Table 9-15: Frequency Stability/Voltage Variation – 155.0125 MHz ..... **Error! Bookmark not defined.**
Table 9-16: Frequency Stability/Voltage Variation – 173.9875 MHz ..... **Error! Bookmark not defined.**
Table 9-17: Frequency Stability/Voltage Variation –378.0125 MHz ..... **Error! Bookmark not defined.**
Table 9-18: Frequency Stability/Voltage Variation – 450.0125 MHz ..... **Error! Bookmark not defined.**
Table 9-19: Frequency Stability/Voltage Variation – 511.9875 MHz ..... **Error! Bookmark not defined.**
Table 9-20: Frequency Stability/Voltage Variation – 772 MHz ..... **Error! Bookmark not defined.**
Table 9-21: Frequency Stability/Voltage Variation – 815 MHz ..... **Error! Bookmark not defined.**
Table 9-22: Frequency Stability/Voltage Variation – 937.5 MHz ..... **Error! Bookmark not defined.**
Table 9-23: Test Equipment Used For Testing Frequency Stability/Voltage Variation**Error! Bookmark not defined.**
Table 10-1: Test Equipment Used For Testing Modulation Requirements..... **Error! Bookmark not defined.**
Table 11-1: Test Equipment Used For Testing Transient Frequency Behavior **Error! Bookmark not defined.**

Table of Plots

Plot 6-1: Adjacent Channel Power - 768.0125 MHz; NB Analog Mode (9.375 kHz - 350 kHz) 27
Plot 6-2: Adjacent Channel Power – 772.0000 MHz; NB Analog Mode (9.375 kHz - 350 kHz) 28
Plot 6-3: Adjacent Channel Power - 775.9875 MHz; NB Analog Mode (9.375 kHz - 350 kHz) 29
Plot 6-4: Adjacent Channel Power – 798.0125 MHz; NB Analog Mode; (9.375 kHz - 350 kHz) 30
Plot 6-5: Adjacent Channel Power – 802.0000 MHz; NB Analog Mode; (9.375 kHz - 350 kHz) 31
Plot 6-6: Adjacent Channel Power – 805.9875 MHz; NB Analog Mode; (9.375 kHz - 350 kHz) 32
Plot 6-7: Adjacent Channel Power - 768.0125 MHz; NB 2-Level FSK 9600 (9.375 kHz - 350 kHz) 33
Plot 6-8: Adjacent Channel Power - 772.0000 MHz; NB 2-Level FSK 9600 (9.375 kHz - 350 kHz) 34
Plot 6-9: Adjacent Channel Power - 775.9875 MHz; NB 2-Level FSK 9600 (9.375 kHz - 350 kHz) 35
Plot 6-10: Adjacent Channel Power – 798.0125 MHz; NB 2-Level FSK 9600 (9.375 kHz - 350 kHz) 36
Plot 6-11: Adjacent Channel Power – 802.0000 MHz; NB 2-Level FSK 9600 (9.375 kHz - 350 kHz) 37
Plot 6-12: Adjacent Channel Power – 805.9875 MHz; NB 2-Level FSK 9600 (9.375 kHz - 350 kHz) 38
Plot 6-13: Adjacent Channel Power - 768.0125 MHz; C4FM Mode (9.375 kHz - 350 kHz) 39
Plot 6-14: Adjacent Channel Power - 772.0000 MHz; C4FM Mode (9.375 kHz - 350 kHz) 40
Plot 6-15: Adjacent Channel Power - 775.9875 MHz; C4FM Mode (9.375 kHz - 350 kHz) 41
Plot 6-16: Adjacent Channel Power – 798.0125 MHz; C4FM Mode (9.375 kHz - 350 kHz).....42
Plot 6-17: Adjacent Channel Power – 802.0000 MHz; C4FM Mode (9.375 kHz - 350 kHz).....43
Plot 6-18: Adjacent Channel Power – 805.9875 MHz; C4FM Mode (9.375 kHz - 350 kHz).....44
Plot 6-19: Adjacent Channel Power - 768.0125 MHz; H-CPM (TDMA) Mode (9.375 kHz - 350 kHz).....45
Plot 6-20: Adjacent Channel Power - 772.0000 MHz; H-CPM (TDMA) Mode (9.375 kHz - 350 kHz).....46
Plot 6-21: Adjacent Channel Power - 775.9875 MHz; H-CPM (TDMA) Mode (9.375 kHz - 350 kHz).....47
Plot 6-22: Adjacent Channel Power – 798.0125 MHz; H-CPM (TDMA) Mode; (9.375 kHz - 350 kHz).....48
Plot 6-23: Adjacent Channel Power – 802.0000 MHz; H-CPM (TDMA) Mode; (9.375 kHz - 350 kHz).....49
Plot 6-24: Adjacent Channel Power – 805.9875 MHz; H-CPM (TDMA) Mode; (9.375 kHz - 350 kHz).....50
Plot 6-25: Adjacent Channel Power - 769.0125 MHz; WB HVD SMR Mode (9.375 kHz - 350 kHz).....51
Plot 6-26: Adjacent Channel Power - 772.0000 MHz; WB HVD SMR Mode (9.375 kHz - 350 kHz).....52
Plot 6-27: Adjacent Channel Power - 774.9875 MHz; WB HVD SMR Mode (9.375 kHz - 350 kHz).....53
Plot 6-28: Adjacent Channel Power – 799.0125 MHz; WB HVD SMR Mode (9.375 kHz - 350 kHz).....54
Plot 6-29: Adjacent Channel Power – 802.0000 MHz; WB HVD SMR Mode (9.375 kHz - 350 kHz).....55
Plot 6-30: Adjacent Channel Power – 804.9875 MHz; WB HVD SMR Mode (9.375 kHz - 350 kHz).....56

Plot 8-1: Occupied Bandwidth – 33.0125 MHz - Mask B ..... **Error! Bookmark not defined.**
Plot 8-2: Occupied Bandwidth – 40.0125 MHz - Mask B ..... **Error! Bookmark not defined.**
Plot 8-3: Occupied Bandwidth – 47.9875 MHz – Analog Wideband (Mask B)**Error! Bookmark not defined.**
Plot 8-4: Occupied Bandwidth – 136.0125 MHz – Analog Wideband (Mask B)**Error! Bookmark not defined.**
Plot 8-5: Occupied Bandwidth – 138.0125 MHz – Analog Wideband (Mask B)**Error! Bookmark not defined.**
Plot 8-6: Occupied Bandwidth – 141.0000 MHz – Analog Wideband (Mask B)**Error! Bookmark not defined.**
Plot 8-7: Occupied Bandwidth – 143.9875 MHz – Analog Wideband (Mask B)**Error! Bookmark not defined.**
Plot 8-8: Occupied Bandwidth – 148.0125 MHz – Analog Wideband (Mask B)**Error! Bookmark not defined.**
Plot 8-9: Occupied Bandwidth – 150.0125 MHz – Analog Wideband (Mask B)**Error! Bookmark not defined.**
Plot 8-10: Occupied Bandwidth – 154.0125 MHz – Analog Wideband (Mask B)**Error! Bookmark not defined.**
Plot 8-11: Occupied Bandwidth – 155.0125 MHz – Analog Wideband (Mask B)**Error! Bookmark not defined.**
Plot 8-12: Occupied Bandwidth – 162.0000 MHz – Analog Wideband (Mask B)**Error! Bookmark not defined.**
Plot 8-13: Occupied Bandwidth – 173.1875 MHz – Analog Wideband (Mask B)**Error! Bookmark not defined.**
Plot 8-14: Occupied Bandwidth – 173.9875 MHz – Analog Wideband (Mask B)**Error! Bookmark not defined.**
Plot 8-15: Occupied Bandwidth – 378.0125 MHz – Analog Wideband (Mask B)**Error! Bookmark not defined.**
Plot 8-16: Occupied Bandwidth – 406.1125 MHz – Analog Wideband (Mask B)**Error! Bookmark not defined.**
Plot 8-17: Occupied Bandwidth – 418.0000 MHz – Analog Wideband (Mask B)**Error! Bookmark not defined.**
Plot 8-18: Occupied Bandwidth – 429.9875 MHz – Analog Wideband (Mask B)**Error! Bookmark not defined.**
Plot 8-19: Occupied Bandwidth – 450.0125 MHz – Analog Wideband (Mask B)**Error! Bookmark not defined.**
Plot 8-20: Occupied Bandwidth – 453.9875 MHz – Analog Wideband (Mask B)**Error! Bookmark not defined.**
Plot 8-21: Occupied Bandwidth – 456.0125 MHz – Analog Wideband (Mask B)**Error! Bookmark not defined.**
Plot 8-22: Occupied Bandwidth – 469.9875 MHz – Analog Wideband (Mask B)**Error! Bookmark not defined.**
Plot 8-23: Occupied Bandwidth – 511.9875 MHz – Analog Wideband (Mask B)**Error! Bookmark not defined.**
Plot 8-24: Occupied Bandwidth – 519.9875 MHz – Analog Wideband (Mask B)**Error! Bookmark not defined.**
Plot 8-25: Occupied Bandwidth – 136.0125 MHz – Analog Narrowband (Mask D)**Error! Bookmark not defined.**
Plot 8-26: Occupied Bandwidth – 138.0125 MHz – Analog Narrowband (Mask D)**Error! Bookmark not defined.**
Plot 8-27: Occupied Bandwidth – 141.0000 MHz – Analog Narrowband (Mask D)**Error! Bookmark not defined.**
Plot 8-28: Occupied Bandwidth – 143.9875 MHz – Analog Narrowband (Mask D)**Error! Bookmark not defined.**
Plot 8-29: Occupied Bandwidth – 148.0125 MHz – Analog Narrowband (Mask D)**Error! Bookmark not defined.**
Plot 8-30: Occupied Bandwidth – 150.0125 MHz – Analog Narrowband (Mask D)**Error! Bookmark not defined.**
Plot 8-31: Occupied Bandwidth – 154.0125 MHz – Analog Narrowband (Mask D)**Error! Bookmark not defined.**
Plot 8-32: Occupied Bandwidth – 155.0125 MHz – Analog Narrowband (Mask D)**Error! Bookmark not defined.**
Plot 8-33: Occupied Bandwidth – 162.0000 MHz – Analog Narrowband (Mask D)**Error! Bookmark not defined.**
Plot 8-34: Occupied Bandwidth – 173.1875 MHz – Analog Narrowband (Mask D)**Error! Bookmark not defined.**
Plot 8-35: Occupied Bandwidth – 173.9875 MHz – Analog Narrowband (Mask D)**Error! Bookmark not defined.**
Plot 8-36: Occupied Bandwidth – 378.0125 MHz – Analog Narrowband (Mask D)**Error! Bookmark not defined.**
Plot 8-37: Occupied Bandwidth – 406.1125 MHz – Analog Narrowband (Mask D)**Error! Bookmark not defined.**
Plot 8-38: Occupied Bandwidth – 418.0000 MHz – Analog Narrowband (Mask D)**Error! Bookmark not defined.**
Plot 8-39: Occupied Bandwidth – 429.9875 MHz – Analog Narrowband (Mask D)**Error! Bookmark not defined.**
Plot 8-40: Occupied Bandwidth – 450.0125 MHz – Analog Narrowband (Mask D)**Error! Bookmark not defined.**
Plot 8-41: Occupied Bandwidth – 453.9875 MHz – Analog Narrowband (Mask D)**Error! Bookmark not defined.**
Plot 8-42: Occupied Bandwidth – 456.0125 MHz – Analog Narrowband (Mask D)**Error! Bookmark not defined.**
Plot 8-43: Occupied Bandwidth – 469.9875 MHz – Analog Narrowband (Mask D)**Error! Bookmark not defined.**
Plot 8-44: Occupied Bandwidth – 511.9875 MHz – Analog Narrowband (Mask D)**Error! Bookmark not defined.**
Plot 8-45: Occupied Bandwidth – 519.9875 MHz – Analog Narrowband (Mask D)**Error! Bookmark not defined.**
Plot 8-46: Occupied Bandwidth – 136.0125 MHz – P25 (Mask D) ..... **Error! Bookmark not defined.**
Plot 8-47: Occupied Bandwidth – 138.0125 MHz – P25 (Mask D) ..... **Error! Bookmark not defined.**
Plot 8-48: Occupied Bandwidth – 141.0000 MHz – P25 (Mask D) ..... **Error! Bookmark not defined.**
Plot 8-49: Occupied Bandwidth – 143.9875 MHz – P25 (Mask D) ..... **Error! Bookmark not defined.**
Plot 8-50: Occupied Bandwidth – 148.0125 MHz – P25 (Mask D) ..... **Error! Bookmark not defined.**
Plot 8-51: Occupied Bandwidth – 150.0125 MHz – P25 (Mask D) ..... **Error! Bookmark not defined.**
Plot 8-52: Occupied Bandwidth – 154.0125 MHz – P25 (Mask D) ..... **Error! Bookmark not defined.**
Plot 8-53: Occupied Bandwidth – 155.0125 MHz – P25 (Mask D) ..... **Error! Bookmark not defined.**
Plot 8-54: Occupied Bandwidth – 162.0000 MHz – P25 (Mask D) ..... **Error! Bookmark not defined.**
Plot 8-55: Occupied Bandwidth – 173.1875 MHz – P25 (Mask D) ..... **Error! Bookmark not defined.**

Plot 8-56: Occupied Bandwidth – 173.9875 MHz – P25 (Mask D) ..... **Error! Bookmark not defined.**
Plot 8-57: Occupied Bandwidth – 378.0125 MHz – P25 (Mask D) ..... **Error! Bookmark not defined.**
Plot 8-58: Occupied Bandwidth – 406.1125 MHz – P25 (Mask D) ..... **Error! Bookmark not defined.**
Plot 8-59: Occupied Bandwidth – 418.0000 MHz – P25 (Mask D) ..... **Error! Bookmark not defined.**
Plot 8-60: Occupied Bandwidth – 429.9875 MHz – P25 (Mask D) ..... **Error! Bookmark not defined.**
Plot 8-61: Occupied Bandwidth – 450.0125 MHz – P25 (Mask D) ..... **Error! Bookmark not defined.**
Plot 8-62: Occupied Bandwidth – 453.9875 MHz – P25 (Mask D) ..... **Error! Bookmark not defined.**
Plot 8-63: Occupied Bandwidth – 456.0125 MHz – P25 (Mask D) ..... **Error! Bookmark not defined.**
Plot 8-64: Occupied Bandwidth – 469.9875 MHz – P25 (Mask D) ..... **Error! Bookmark not defined.**
Plot 8-65: Occupied Bandwidth – 511.9875 MHz – P25 (Mask D) ..... **Error! Bookmark not defined.**
Plot 8-66: Occupied Bandwidth – 519.9875 MHz – P25 (Mask D) ..... **Error! Bookmark not defined.**
Plot 8-67: Occupied Bandwidth – 136.0125 MHz – CPM TDMA (Mask D) ... **Error! Bookmark not defined.**
Plot 8-68: Occupied Bandwidth – 138.0125 MHz – CPM TDMA (Mask D) ... **Error! Bookmark not defined.**
Plot 8-69: Occupied Bandwidth – 141.0000 MHz – CPM TDMA (Mask D) ... **Error! Bookmark not defined.**
Plot 8-70: Occupied Bandwidth – 143.9875 MHz – CPM TDMA (Mask D) ... **Error! Bookmark not defined.**
Plot 8-71: Occupied Bandwidth – 148.0125 MHz – CPM TDMA (Mask D) ... **Error! Bookmark not defined.**
Plot 8-72: Occupied Bandwidth – 150.0125 MHz – CPM TDMA (Mask D) ... **Error! Bookmark not defined.**
Plot 8-73: Occupied Bandwidth – 154.0125 MHz – CPM TDMA (Mask D) ... **Error! Bookmark not defined.**
Plot 8-74: Occupied Bandwidth – 155.0125 MHz – CPM TDMA (Mask D) ... **Error! Bookmark not defined.**
Plot 8-75: Occupied Bandwidth – 162.0000 MHz – CPM TDMA (Mask D) ... **Error! Bookmark not defined.**
Plot 8-76: Occupied Bandwidth – 173.1875 MHz – CPM TDMA (Mask D) ... **Error! Bookmark not defined.**
Plot 8-77: Occupied Bandwidth – 173.9875 MHz – CPM TDMA (Mask D) ... **Error! Bookmark not defined.**
Plot 8-78: Occupied Bandwidth – 378.0125 MHz – CPM TDMA (Mask D) ... **Error! Bookmark not defined.**
Plot 8-79: Occupied Bandwidth – 406.1125 MHz – CPM TDMA (Mask D) ... **Error! Bookmark not defined.**
Plot 8-80: Occupied Bandwidth – 418.0000 MHz – CPM TDMA (Mask D) ... **Error! Bookmark not defined.**
Plot 8-81: Occupied Bandwidth – 429.9875 MHz – CPM TDMA (Mask D) ... **Error! Bookmark not defined.**
Plot 8-82: Occupied Bandwidth – 450.0125 MHz – CPM TDMA (Mask D) ... **Error! Bookmark not defined.**
Plot 8-83: Occupied Bandwidth – 453.9875 MHz – CPM TDMA (Mask D) ... **Error! Bookmark not defined.**
Plot 8-84: Occupied Bandwidth – 456.0125 MHz – CPM TDMA (Mask D) ... **Error! Bookmark not defined.**
Plot 8-85: Occupied Bandwidth – 469.9875 MHz – CPM TDMA (Mask D) ... **Error! Bookmark not defined.**
Plot 8-86: Occupied Bandwidth – 511.9875 MHz – CPM TDMA (Mask D) ... **Error! Bookmark not defined.**
Plot 8-87: Occupied Bandwidth – 519.9875 MHz – CPM TDMA (Mask D) ... **Error! Bookmark not defined.**
Plot 8-88: Occupied Bandwidth – 136.0125 MHz – 2-Level FSK 9600 WB (Mask C)**Error! Bookmark not defined.**
Plot 8-89: Occupied Bandwidth – 138.0125 MHz – 2-Level FSK 9600 WB (Mask C)**Error! Bookmark not defined.**
Plot 8-90: Occupied Bandwidth – 141.0000 MHz – 2-Level FSK 9600 WB (Mask C)**Error! Bookmark not defined.**
Plot 8-91: Occupied Bandwidth – 143.9875 MHz – 2-Level FSK 9600 WB (Mask C)**Error! Bookmark not defined.**
Plot 8-92: Occupied Bandwidth – 148.0125 MHz – 2-Level FSK 9600 WB (Mask C)**Error! Bookmark not defined.**
Plot 8-93: Occupied Bandwidth – 150.0125 MHz – 2-Level FSK 9600 WB (Mask C)**Error! Bookmark not defined.**
Plot 8-94: Occupied Bandwidth – 154.0125 MHz – 2-Level FSK 9600 WB (Mask C)**Error! Bookmark not defined.**
Plot 8-95: Occupied Bandwidth – 155.0125 MHz – 2-Level FSK 9600 WB (Mask C)**Error! Bookmark not defined.**
Plot 8-96: Occupied Bandwidth – 162.0000 MHz – 2-Level FSK 9600 WB (Mask C)**Error! Bookmark not defined.**
Plot 8-97: Occupied Bandwidth – 173.1875 MHz – 2-Level FSK 9600 WB (Mask C)**Error! Bookmark not defined.**
Plot 8-98: Occupied Bandwidth – 173.9875 MHz – 2-Level FSK 9600 WB (Mask C)**Error! Bookmark not defined.**
Plot 8-99: Occupied Bandwidth – 378.0125 MHz – 2-Level FSK 9600 WB (Mask C)**Error! Bookmark not defined.**
Plot 8-100: Occupied Bandwidth – 406.1125 MHz – 2-Level FSK 9600 WB (Mask C)**Error! Bookmark not defined.**
Plot 8-101: Occupied Bandwidth – 418.0000 MHz – 2-Level FSK 9600 WB (Mask C)**Error! Bookmark not defined.**
Plot 8-102: Occupied Bandwidth – 429.9875 MHz – 2-Level FSK 9600 WB (Mask C)**Error! Bookmark not defined.**
Plot 8-103: Occupied Bandwidth – 450.0125 MHz – 2-Level FSK 9600 WB (Mask C)**Error! Bookmark not defined.**
Plot 8-104: Occupied Bandwidth – 453.9875 MHz – 2-Level FSK 9600 WB (Mask C)**Error! Bookmark not defined.**
Plot 8-105: Occupied Bandwidth – 456.0125 MHz – 2-Level FSK 9600 WB (Mask C)**Error! Bookmark not defined.**
Plot 8-106: Occupied Bandwidth – 469.9875 MHz – 2-Level FSK 9600 WB (Mask C)**Error! Bookmark not defined.**
Plot 8-107: Occupied Bandwidth – 511.9875 MHz – 2-Level FSK 9600 WB (Mask C)**Error! Bookmark not defined.**
Plot 8-108: Occupied Bandwidth – 519.9875 MHz – 2-Level FSK 9600 WB (Mask C)**Error! Bookmark not defined.**
Plot 8-109: Occupied Bandwidth – 136.0125 MHz – 2-Level FSK 9600 NB (Mask D)**Error! Bookmark not defined.**
Plot 8-110: Occupied Bandwidth – 138.0125 MHz – 2-Level FSK 9600 NB (Mask D)**Error! Bookmark not defined.**

Plot 8-111: Occupied Bandwidth – 141.0000 MHz – 2-Level FSK 9600 NB (Mask D)**Error! Bookmark not defined.**
Plot 8-112: Occupied Bandwidth – 143.9875 MHz – 2-Level FSK 9600 NB (Mask D)**Error! Bookmark not defined.**
Plot 8-113: Occupied Bandwidth – 148.0125 MHz – 2-Level FSK 9600 NB (Mask D)**Error! Bookmark not defined.**
Plot 8-114: Occupied Bandwidth – 150.0125 MHz – 2-Level FSK 9600 NB (Mask D)**Error! Bookmark not defined.**
Plot 8-115: Occupied Bandwidth – 154.0125 MHz – 2-Level FSK 9600 NB (Mask D)**Error! Bookmark not defined.**
Plot 8-116: Occupied Bandwidth – 155.0125 MHz – 2-Level FSK 9600 NB (Mask D)**Error! Bookmark not defined.**
Plot 8-117: Occupied Bandwidth – 162.0000 MHz – 2-Level FSK 9600 NB (Mask D)**Error! Bookmark not defined.**
Plot 8-118: Occupied Bandwidth – 173.1875 MHz – 2-Level FSK 9600 NB (Mask D)**Error! Bookmark not defined.**
Plot 8-119: Occupied Bandwidth – 173.9875 MHz – 2-Level FSK 9600 NB (Mask D)**Error! Bookmark not defined.**
Plot 8-120: Occupied Bandwidth – 378.0125 MHz – 2-Level FSK 9600 NB (Mask D)**Error! Bookmark not defined.**
Plot 8-121: Occupied Bandwidth – 406.1125 MHz – 2-Level FSK 9600 NB (Mask D)**Error! Bookmark not defined.**
Plot 8-122: Occupied Bandwidth – 418.0000 MHz – 2-Level FSK 9600 NB (Mask D)**Error! Bookmark not defined.**
Plot 8-123: Occupied Bandwidth – 429.9875 MHz – 2-Level FSK 9600 NB (Mask D)**Error! Bookmark not defined.**
Plot 8-124: Occupied Bandwidth – 450.0125 MHz – 2-Level FSK 9600 NB (Mask D)**Error! Bookmark not defined.**
Plot 8-125: Occupied Bandwidth – 453.9875 MHz – 2-Level FSK 9600 NB (Mask D)**Error! Bookmark not defined.**
Plot 8-126: Occupied Bandwidth – 456.0125 MHz – 2-Level FSK 9600 NB (Mask D)**Error! Bookmark not defined.**
Plot 8-127: Occupied Bandwidth – 469.9875 MHz – 2-Level FSK 9600 NB (Mask D)**Error! Bookmark not defined.**
Plot 8-128: Occupied Bandwidth – 511.9875 MHz – 2-Level FSK 9600 NB (Mask D)**Error! Bookmark not defined.**
Plot 8-129: Occupied Bandwidth – 519.9875 MHz – 2-Level FSK 9600 NB (Mask D)**Error! Bookmark not defined.**
Plot 8-130: Occupied Bandwidth – 136.0125 MHz – 2-level FSK 4800 (Mask D)**Error! Bookmark not defined.**
Plot 8-131: Occupied Bandwidth – 138.0125 MHz – 2-level FSK 4800 (Mask D)**Error! Bookmark not defined.**
Plot 8-132: Occupied Bandwidth – 141.0000 MHz – 2-level FSK 4800 (Mask D)**Error! Bookmark not defined.**
Plot 8-133: Occupied Bandwidth – 143.9875 MHz – 2-level FSK 4800 (Mask D)**Error! Bookmark not defined.**
Plot 8-134: Occupied Bandwidth – 148.0125 MHz – 2-level FSK 4800 (Mask D)**Error! Bookmark not defined.**
Plot 8-135: Occupied Bandwidth – 150.0125 MHz – 2-level FSK 4800 (Mask D)**Error! Bookmark not defined.**
Plot 8-136: Occupied Bandwidth – 154.0125 MHz – 2-level FSK 4800 (Mask D)**Error! Bookmark not defined.**
Plot 8-137: Occupied Bandwidth – 155.0125 MHz – 2-level FSK 4800 (Mask D)**Error! Bookmark not defined.**
Plot 8-138: Occupied Bandwidth – 162.0000 MHz – 2-level FSK 4800 (Mask D)**Error! Bookmark not defined.**
Plot 8-139: Occupied Bandwidth – 173.1875 MHz – 2-level FSK 4800 (Mask D)**Error! Bookmark not defined.**
Plot 8-140: Occupied Bandwidth – 173.9875 MHz – 2-level FSK 4800 (Mask D)**Error! Bookmark not defined.**
Plot 8-141: Occupied Bandwidth – 378.0125 MHz – 2-level FSK 4800 (Mask D)**Error! Bookmark not defined.**
Plot 8-142: Occupied Bandwidth – 406.1125 MHz – 2-level FSK 4800 (Mask D)**Error! Bookmark not defined.**
Plot 8-143: Occupied Bandwidth – 418.0000 MHz – 2-level FSK 4800 (Mask D)**Error! Bookmark not defined.**
Plot 8-144: Occupied Bandwidth – 429.9875 MHz – 2-level FSK 4800 (Mask D)**Error! Bookmark not defined.**
Plot 8-145: Occupied Bandwidth – 450.0125 MHz – 2-level FSK 4800 (Mask D)**Error! Bookmark not defined.**
Plot 8-146: Occupied Bandwidth – 453.9875 MHz – 2-level FSK 4800 (Mask D)**Error! Bookmark not defined.**
Plot 8-147: Occupied Bandwidth – 456.0125 MHz – 2-level FSK 4800 (Mask D)**Error! Bookmark not defined.**
Plot 8-148: Occupied Bandwidth – 469.9875 MHz – 2-level FSK 4800 (Mask D)**Error! Bookmark not defined.**
Plot 8-149: Occupied Bandwidth – 511.9875 MHz – 2-level FSK 4800 (Mask D)**Error! Bookmark not defined.**
Plot 8-150: Occupied Bandwidth – 519.9875 MHz – 2-level FSK 4800 (Mask D)**Error! Bookmark not defined.**
Plot 8-151: Occupied Bandwidth – 815.0000 MHz; WB Analog; Mask B ..... **Error! Bookmark not defined.**
Plot 8-152: Occupied Bandwidth – 823.9875 MHz; WB Analog; Mask B ..... **Error! Bookmark not defined.**
Plot 8-153: Occupied Bandwidth – 851.0125 MHz; WB Analog; Mask B ..... **Error! Bookmark not defined.**
Plot 8-154: Occupied Bandwidth – 860.0000 MHz; WB Analog; Mask B ..... **Error! Bookmark not defined.**
Plot 8-155: Occupied Bandwidth – 896.0125 MHz; WB Analog; Mask B ..... **Error! Bookmark not defined.**
Plot 8-156: Occupied Bandwidth – 898.5000 MHz; WB Analog; Mask B ..... **Error! Bookmark not defined.**
Plot 8-157: Occupied Bandwidth – 806.0125 MHz; NB Analog; Mask B..... **Error! Bookmark not defined.**
Plot 8-158: Occupied Bandwidth – 806.0125 MHz; NB Analog; Mask D (ISED)**Error! Bookmark not defined.**
Plot 8-159: Occupied Bandwidth – 815.0000 MHz; NB Analog; Mask D..... **Error! Bookmark not defined.**
Plot 8-160: Occupied Bandwidth – 851.0125 MHz; NB Analog; Mask B..... **Error! Bookmark not defined.**
Plot 8-161: Occupied Bandwidth – 851.0125 MHz; NB Analog; Mask D (ISED)**Error! Bookmark not defined.**
Plot 8-162: Occupied Bandwidth – 860.0000 MHz; NB Analog; Mask B..... **Error! Bookmark not defined.**
Plot 8-163: Occupied Bandwidth – 860.0000 MHz; NB Analog; Mask D (ISED)**Error! Bookmark not defined.**
Plot 8-164: Occupied Bandwidth – 896.0125 MHz; NB Analog; Mask I ..... **Error! Bookmark not defined.**
Plot 8-165: Occupied Bandwidth – 898.5000 MHz; NB Analog; Mask I ..... **Error! Bookmark not defined.**

Plot 8-166: Occupied Bandwidth – 900.9875 MHz; NB Analog; Mask I ..... **Error! Bookmark not defined.**
Plot 8-167: Occupied Bandwidth – 935.0125 MHz; NB Analog; Mask I ..... **Error! Bookmark not defined.**
Plot 8-168: Occupied Bandwidth – 937.5000 MHz; NB Analog; Mask I ..... **Error! Bookmark not defined.**
Plot 8-169: Occupied Bandwidth – 939.9875 MHz; NB Analog; Mask I ..... **Error! Bookmark not defined.**
Plot 8-170: Occupied Bandwidth – 942.5000 MHz; NB Analog; Mask D (ISED)**Error! Bookmark not defined.**
Plot 8-171: Occupied Bandwidth – 943.9875 MHz; NB Analog; Mask D (ISED)**Error! Bookmark not defined.**
Plot 8-172: Occupied Bandwidth – 806.0125 MHz; Analog NPSPAC; Mask B**Error! Bookmark not defined.**
Plot 8-173: Occupied Bandwidth – 851.0125 MHz; Analog NPSPAC; Mask B**Error! Bookmark not defined.**
Plot 8-174: Occupied Bandwidth – 860.9875 MHz; Analog NPSPAC; Mask B**Error! Bookmark not defined.**
Plot 8-175: Occupied Bandwidth – 806.0125 MHz; 2-level FSK 9600 NPSPAC; Mask H**Error! Bookmark not defined.**
Plot 8-176: Occupied Bandwidth – 806.0125 MHz; 2-level FSK 9600 NPSPAC; Mask G (ISED)**Error! Bookmark not def**
Plot 8-177: Occupied Bandwidth – 851.0125 MHz; 2-level FSK 9600 NPSPAC; Mask H**Error! Bookmark not defined.**
Plot 8-178: Occupied Bandwidth – 851.0125 MHz; 2-level FSK 9600 NPSPAC; Mask G (ISED)**Error! Bookmark not def**
Plot 8-179: Occupied Bandwidth – 860.9875 MHz; 2-level FSK 9600 NPSPAC; Mask G**Error! Bookmark not defined.**
Plot 8-180: Occupied Bandwidth – 860.98875 MHz; 2-level FSK 9600 NPSPAC; Mask H**Error! Bookmark not defined.**
Plot 8-181: Occupied Bandwidth – 806.0125 MHz; WB 2-level FSK 9600; Mask G**Error! Bookmark not defined.**
Plot 8-182: Occupied Bandwidth – 815.0000 MHz; WB 2-level FSK 9600; Mask G**Error! Bookmark not defined.**
Plot 8-183: Occupied Bandwidth – 851.0125 MHz; WB 2-level FSK 9600; Mask H**Error! Bookmark not defined.**
Plot 8-184: Occupied Bandwidth – 851.0125 MHz; WB 2-level FSK 9600; Mask G**Error! Bookmark not defined.**
Plot 8-185: Occupied Bandwidth – 860.0000 MHz; WB 2-level FSK 9600; Mask G**Error! Bookmark not defined.**
Plot 8-186: Occupied Bandwidth – 806.0125 MHz; 2-Level FSK 9600 NB; Mask H**Error! Bookmark not defined.**
Plot 8-187: Occupied Bandwidth – 806.0125 MHz; 2-Level FSK 9600 NB; Mask D (ISED)**Error! Bookmark not defined.**
Plot 8-188: Occupied Bandwidth – 815.0000 MHz; 2-Level FSK 9600 NB; Mask G**Error! Bookmark not defined.**
Plot 8-189: Occupied Bandwidth – 815.0000 MHz; 2-Level FSK 9600 NB; Mask D**Error! Bookmark not defined.**
Plot 8-190: Occupied Bandwidth – 851.0125 MHz; 2-Level FSK 9600 NB; Mask H**Error! Bookmark not defined.**
Plot 8-191: Occupied Bandwidth – 851.0125 MHz; 2-Level FSK 9600 NB; Mask D (ISED)**Error! Bookmark not defined.**
Plot 8-192: Occupied Bandwidth – 860.000 MHz; 2-Level FSK 9600 NB; Mask G**Error! Bookmark not defined.**
Plot 8-193: Occupied Bandwidth – 860.000 MHz; 2-Level FSK 9600 NB; Mask D (ISED)**Error! Bookmark not defined.**
Plot 8-194: Occupied Bandwidth – 896.0125 MHz; 2-Level FSK 9600 NB; Mask J**Error! Bookmark not defined.**
Plot 8-195: Occupied Bandwidth – 898.5000 MHz; 2-Level FSK 9600 NB; Mask J**Error! Bookmark not defined.**
Plot 8-196: Occupied Bandwidth – 900.9875 MHz; 2-Level FSK 9600 NB; Mask J**Error! Bookmark not defined.**
Plot 8-197: Occupied Bandwidth – 935.0125 MHz; 2-Level FSK 9600 NB; Mask J**Error! Bookmark not defined.**
Plot 8-198: Occupied Bandwidth – 937.5000 MHz; 2-Level FSK 9600 NB; Mask J**Error! Bookmark not defined.**
Plot 8-199: Occupied Bandwidth – 939.9875 MHz; 2-Level FSK 9600 NB; Mask J**Error! Bookmark not defined.**
Plot 8-200: Occupied Bandwidth – 941.0125 MHz; 2-Level FSK 9600 NB; Mask C**Error! Bookmark not defined.**
Plot 8-201: Occupied Bandwidth – 941.0125 MHz; 2-Level FSK 9600 NB; Mask D**Error! Bookmark not defined.**
Plot 8-202: Occupied Bandwidth – 942.5000 MHz; 2-Level FSK 9600 NB; Mask C**Error! Bookmark not defined.**
Plot 8-203: Occupied Bandwidth – 942.5000 MHz; 2-Level FSK 9600 NB; Mask D (ISED)**Error! Bookmark not defined.**
Plot 8-204: Occupied Bandwidth – 943.9875 MHz; 2-Level FSK 9600 NB; Mask C**Error! Bookmark not defined.**
Plot 8-205: Occupied Bandwidth – 943.9875 MHz; 2-Level FSK 9600 NB; Mask D (ISED)**Error! Bookmark not defined.**
Plot 8-206: Occupied Bandwidth – 896.0125 MHz; 2-Level FSK 4800 XNB; Mask J**Error! Bookmark not defined.**
Plot 8-207: Occupied Bandwidth – 898.5 MHz; 2-Level FSK 4800 XNB; Mask J**Error! Bookmark not defined.**
Plot 8-208: Occupied Bandwidth – 900.9875 MHz; 2-Level FSK 4800 XNB; Mask J**Error! Bookmark not defined.**
Plot 8-209: Occupied Bandwidth – 935.0125 MHz; 2-Level FSK 4800 XNB; Mask J**Error! Bookmark not defined.**
Plot 8-210: Occupied Bandwidth – 937.5000 MHz; 2-Level FSK 4800 XNB; Mask J**Error! Bookmark not defined.**
Plot 8-211: Occupied Bandwidth – 939.9875 MHz; 2-Level FSK 4800 XNB; Mask J**Error! Bookmark not defined.**
Plot 8-212: Occupied Bandwidth – 941.0125 MHz; 2-Level FSK 4800 XNB; Mask C**Error! Bookmark not defined.**
Plot 8-213: Occupied Bandwidth – 941.0125 MHz; 2-Level FSK 4800 XNB; Mask D**Error! Bookmark not defined.**
Plot 8-214: Occupied Bandwidth – 942.5000 MHz; 2-Level FSK 4800 XNB; Mask C**Error! Bookmark not defined.**
Plot 8-215: Occupied Bandwidth – 942.5000 MHz; 2-Level FSK 4800 XNB; Mask D**Error! Bookmark not defined.**
Plot 8-216: Occupied Bandwidth – 943.9875 MHz; 2-Level FSK 4800 XNB; Mask C**Error! Bookmark not defined.**
Plot 8-217: Occupied Bandwidth – 943.9875 MHz; 2-Level FSK 4800 XNB; Mask D**Error! Bookmark not defined.**
Plot 8-218: Occupied Bandwidth – 851.0125 MHz; P25; Mask H..... **Error! Bookmark not defined.**
Plot 8-219: Occupied Bandwidth – 851.0125 MHz; P25; Mask D..... **Error! Bookmark not defined.**
Plot 8-220: Occupied Bandwidth – 860.0000 MHz; P25; Mask G ..... **Error! Bookmark not defined.**

Plot 8-221: Occupied Bandwidth – 860.0000 MHz; P25; Mask D..... **Error! Bookmark not defined.**
Plot 8-222: Occupied Bandwidth – 896.0125 MHz; P25; Mask J ..... **Error! Bookmark not defined.**
Plot 8-223: Occupied Bandwidth – 898.5000 MHz; P25; Mask J ..... **Error! Bookmark not defined.**
Plot 8-224: Occupied Bandwidth – 900.9875 MHz; P25; Mask J ..... **Error! Bookmark not defined.**
Plot 8-225: Occupied Bandwidth – 935.0125 MHz; P25; Mask J ..... **Error! Bookmark not defined.**
Plot 8-226: Occupied Bandwidth – 937.5000 MHz; P25; Mask J ..... **Error! Bookmark not defined.**
Plot 8-227: Occupied Bandwidth – 939.9875 MHz; P25; Mask J ..... **Error! Bookmark not defined.**
Plot 8-228: Occupied Bandwidth – 941.0125 MHz; P25; Mask C..... **Error! Bookmark not defined.**
Plot 8-229: Occupied Bandwidth – 941.0125 MHz; P25; Mask D..... **Error! Bookmark not defined.**
Plot 8-230: Occupied Bandwidth – 942.5000 MHz; P25; Mask C..... **Error! Bookmark not defined.**
Plot 8-231: Occupied Bandwidth – 942.5000 MHz; P25; Mask D..... **Error! Bookmark not defined.**
Plot 8-232: Occupied Bandwidth – 943.9875 MHz; P25; Mask C..... **Error! Bookmark not defined.**
Plot 8-233: Occupied Bandwidth – 943.9875 MHz; P25; Mask D..... **Error! Bookmark not defined.**
Plot 8-234: Occupied Bandwidth – 851.0125 MHz; P25 Phase 2; Mask H ..... **Error! Bookmark not defined.**
Plot 8-235: Occupied Bandwidth – 851.0125 MHz; P25 Phase 2; Mask D ..... **Error! Bookmark not defined.**
Plot 8-236: Occupied Bandwidth – 860.0000 MHz; P25 Phase 2; Mask G ..... **Error! Bookmark not defined.**
Plot 8-237: Occupied Bandwidth – 860.0000 MHz; P25 Phase 2; Mask D ..... **Error! Bookmark not defined.**
Plot 8-238: Occupied Bandwidth – 896.0125 MHz; P25 Phase 2; Mask J ..... **Error! Bookmark not defined.**
Plot 8-239: Occupied Bandwidth – 898.5000 MHz; P25 Phase 2; Mask J ..... **Error! Bookmark not defined.**
Plot 8-240: Occupied Bandwidth – 900.9875 MHz; P25 Phase 2; Mask J ..... **Error! Bookmark not defined.**
Plot 8-241: Occupied Bandwidth – 935.0125 MHz; P25 Phase 2; Mask J ..... **Error! Bookmark not defined.**
Plot 8-242: Occupied Bandwidth – 937.5000 MHz; P25 Phase 2; Mask J ..... **Error! Bookmark not defined.**
Plot 8-243: Occupied Bandwidth – 939.9875 MHz; P25 Phase 2; Mask J ..... **Error! Bookmark not defined.**
Plot 8-244: Occupied Bandwidth – 941.0125 MHz; P25 Phase 2; Mask C ..... **Error! Bookmark not defined.**
Plot 8-245: Occupied Bandwidth – 941.0125 MHz; P25 Phase 2; Mask D ..... **Error! Bookmark not defined.**
Plot 8-246: Occupied Bandwidth – 942.5000 MHz; P25 Phase 2; Mask C ..... **Error! Bookmark not defined.**
Plot 8-247: Occupied Bandwidth – 942.5000 MHz; P25 Phase 2; Mask D ..... **Error! Bookmark not defined.**
Plot 8-248: Occupied Bandwidth – 943.9875 MHz; P25 Phase 2; Mask C ..... **Error! Bookmark not defined.**
Plot 8-249: Occupied Bandwidth – 943.9875 MHz; P25 Phase 2; Mask D ..... **Error! Bookmark not defined.**
Plot 8-250: Occupied Bandwidth – 806.0125 MHz; HVD SMR; Mask G (ISED)**Error! Bookmark not defined.**
Plot 8-251: Occupied Bandwidth – 815.0000 MHz; HVD SMR; Mask G ..... **Error! Bookmark not defined.**
Plot 8-252: Occupied Bandwidth – 823.9875 MHz; HVD SMR; Mask G ..... **Error! Bookmark not defined.**
Plot 8-253: Occupied Bandwidth – 851.0125 MHz; HVD SMR; Mask G (ISED)**Error! Bookmark not defined.**
Plot 8-254: Occupied Bandwidth – 860.0000 MHz; HVD SMR; Mask G ..... **Error! Bookmark not defined.**
Plot 8-255: Occupied Bandwidth – 806.0125 MHz; HVD NPSPAC; Mask H... **Error! Bookmark not defined.**
Plot 8-256: Occupied Bandwidth – 806.0125 MHz; HVD NPSPAC; Mask D (ISED)**Error! Bookmark not defined.**
Plot 8-257: Occupied Bandwidth – 823.9875 MHz; HVD NPSPAC; Mask G .. **Error! Bookmark not defined.**
Plot 8-258: Occupied Bandwidth – 823.9875 MHz; HVD NPSPAC; Mask D (ISED)**Error! Bookmark not defined.**
Plot 8-259: Occupied Bandwidth – 851.0125 MHz; HVD NPSPAC; Mask H... **Error! Bookmark not defined.**
Plot 8-260: Occupied Bandwidth – 851.0125 MHz; HVD NPSPAC; Mask D (ISED)**Error! Bookmark not defined.**
Plot 8-261: Occupied Bandwidth – 943.99375 MHz; NB Analog; Mask 101.111(a)(1)**Error! Bookmark not defined.**
Plot 8-262: Occupied Bandwidth – 943.99375 MHz; 2-Level FSK 9600 NB; Mask 101.111(a) (5)**Error! Bookmark not de**
Plot 8-263: Occupied Bandwidth – 943.99375 MHz; 2-Level FSK 4800 XNB; Mask 101.111(a) (5)**Error! Bookmark not d**
Plot 8-264: Occupied Bandwidth – 943.99375 MHz; P25; Mask 101.111(a) (5)**Error! Bookmark not defined.**
Plot 8-265: Occupied Bandwidth – 943.99375 MHz; P25 Phase 2; Mask 101.111(a) (5)**Error! Bookmark not defined.**
Plot 10-1: Modulation Characteristics - Audio Frequency Response – 40.0125 MHz (NB)**Error! Bookmark not defined.**
Plot 10-2: Modulation Characteristics - Audio Frequency Response – 40.0125 MHz (WB)**Error! Bookmark not defined**
Plot 10-3: Modulation Characteristics - Audio Frequency Response – 155.0125 MHz (NB)**Error! Bookmark not defined**
Plot 10-4: Modulation Characteristics - Audio Frequency Response – 155.0125 MHz (WB)**Error! Bookmark not define**
Plot 10-5: Modulation Characteristics - Audio Frequency Response – 450.0125 MHz (NB)**Error! Bookmark not defined**
Plot 10-6: Modulation Characteristics - Audio Frequency Response – 450.0125 MHz (WB)**Error! Bookmark not define**
Plot 10-7: Modulation Characteristics - Audio Frequency Response – 772.0000 MHz (WB)**Error! Bookmark not define**
Plot 10-8: Modulation Characteristics - Audio Frequency Response – 806.0125 MHz (NPSPAC)**Error! Bookmark not d**
Plot 10-9: Modulation Characteristics - Audio Frequency Response – 937. 5000 MHz (NB)**Error! Bookmark not define**
Plot 10-10: Modulation Characteristics – Audio Low Pass Filter – 155.0125 MHz (NB)**Error! Bookmark not defined.**

Plot 10-11: Modulation Characteristics – Audio Low Pass Filter – 155.0125 MHz (WB)**Error! Bookmark not defined.**
Plot 10-12: Modulation Characteristics – Audio Low Pass Filter – 937.5000 MHz (NB)**Error! Bookmark not defined.**
Plot 10-13: Modulation Characteristics – Audio Low Pass Filter – 806.0125 MHz (NPSPAC)**Error! Bookmark not define**
Plot 10-14: Modulation Characteristics – Audio Low Pass Filter – 772.0000 MHz (WB)**Error! Bookmark not defined.**
Plot 10-15: Modulation Characteristics – Modulation Limiting – 40.0125 MHz; (NB) Positive Peak**Error! Bookmark not d**
Plot 10-16: Modulation Characteristics – Modulation Limiting – 40.0125 MHz; (NB) Negative Peak**Error! Bookmark not**
Plot 10-17: Modulation Characteristics – Modulation Limiting – 40.0125 MHz; (WB); Positive Peak**Error! Bookmark not**
Plot 10-18: Modulation Characteristics – Modulation Limiting - 40.0125 MHz; (WB) Negative Peak**Error! Bookmark not**
Plot 10-19: Modulation Characteristics – Modulation Limiting – 155.0125 MHz; (NB) Positive Peak**Error! Bookmark not**
Plot 10-20: Modulation Characteristics – Modulation Limiting – 155.0125 MHz; (NB) Negative Peak**Error! Bookmark not**
Plot 10-21: Modulation Characteristics – Modulation Limiting – 155.0125 MHz; (WB) Positive Peak**Error! Bookmark not**
Plot 10-22: Modulation Characteristics – Modulation Limiting – 155.0125 MHz; (WB) Negative Peak**Error! Bookmark no**
Plot 10-23: Modulation Characteristics – Modulation Limiting – 450.0125 MHz; (NB) Positive Peak**Error! Bookmark not**
Plot 10-24: Modulation Characteristics – Modulation Limiting – 450.0125 MHz; (NB) Negative Peak**Error! Bookmark not**
Plot 10-25: Modulation Characteristics – Modulation Limiting – 450.0125 MHz; (WB) Positive Peak**Error! Bookmark not**
Plot 10-26: Modulation Characteristics – Modulation Limiting – 450.0125 MHz; (WB) Negative Peak**Error! Bookmark no**
Plot 10-27: Modulation Characteristics – Modulation Limiting – 772.0000 MHz; (WB); Positive Peak**Error! Bookmark not**
Plot 10-28: Modulation Characteristics – Modulation Limiting - 772.0000 MHz; (WB) Negative Peak**Error! Bookmark not**
Plot 10-29: Modulation Characteristics – Modulation Limiting – 806.0125 MHz; (NPSPAC); Positive Peak**Error! Bookma**
Plot 10-30: Modulation Characteristics – Modulation Limiting – 806.0125 MHz; (NPSPAC); Negative Peak**Error! Bookma**
Plot 10-31: Modulation Characteristics – Modulation Limiting – 937.5 MHz; (NB); Positive Peak**Error! Bookmark not def**
Plot 10-32: Modulation Characteristics – Modulation Limiting – 937.5 MHz; (NB); Negative Peak**Error! Bookmark not de**
Plot 11-1: Transient Frequency Behavior – 150.0125 MHz; Wide Band; Carrier ON Time**Error! Bookmark not defined.**
Plot 11-2: Transient Frequency Behavior – 150.0125 MHz; Wide Band; Carrier OFF Time**Error! Bookmark not defined**
Plot 11-3: Transient Frequency Behavior – 150.0125 MHz; Narrow Band; Carrier ON Time**Error! Bookmark not define**
Plot 11-4: Transient Frequency Behavior – 150.0125 MHz; Narrow Band; Carrier OFF Time**Error! Bookmark not defin**
Plot 11-5: Transient Frequency Behavior – 162.0000 MHz; Wide Band; Carrier ON Time**Error! Bookmark not defined.**
Plot 11-6: Transient Frequency Behavior – 162.0000 MHz; Wide Band; Carrier OFF Time**Error! Bookmark not defined**
Plot 11-7: Transient Frequency Behavior – 162.0125 MHz; Narrow Band; Carrier ON Time**Error! Bookmark not define**
Plot 11-8: Transient Frequency Behavior – 162.0000 MHz; Narrow Band; Carrier OFF Time**Error! Bookmark not defin**
Plot 11-9: Transient Frequency Behavior – 173.9875 MHz; Wide Band; Carrier ON Time**Error! Bookmark not defined.**
Plot 11-10: Transient Frequency Behavior – 173.9875 MHz; Wide Band; Carrier OFF Time**Error! Bookmark not defined**
Plot 11-11: Transient Frequency Behavior – 173.9875 MHz; Narrow Band; Carrier ON Time**Error! Bookmark not define**
Plot 11-12: Transient Frequency Behavior – 173.9875 MHz; Narrow Band; Carrier OFF Time**Error! Bookmark not defin**
Plot 11-13: Transient Frequency Behavior – 429.9875 MHz; Wide Band; Carrier ON Time**Error! Bookmark not defined.**
Plot 11-14: Transient Frequency Behavior – 429.9875 MHz; Wide Band; Carrier OFF Time**Error! Bookmark not defined**
Plot 11-15: Transient Frequency Behavior – 469.9875 MHz; Wide Band; Carrier ON Time**Error! Bookmark not defined.**
Plot 11-16: Transient Frequency Behavior – 469.9875 MHz; Wide Band; Carrier OFF Time**Error! Bookmark not defined**
Plot 11-17: Transient Frequency Behavior – 469.9875 MHz; Narrow Band; Carrier ON Time**Error! Bookmark not define**
Plot 11-18: Transient Frequency Behavior – 469.9875 MHz; Narrow Band; Carrier OFF Time**Error! Bookmark not defin**
Plot 11-19: Transient Frequency Behavior – 511.9875 MHz; Wide Band; Carrier ON Time**Error! Bookmark not defined.**
Plot 11-20: Transient Frequency Behavior – 511.9875 MHz; Wide Band; Carrier OFF Time**Error! Bookmark not defined**
Plot 11-21: Transient Frequency Behavior – 511.9875 MHz; Narrow Band; Carrier ON Time**Error! Bookmark not define**
Plot 11-22: Transient Frequency Behavior – 511.9875 MHz; Narrow Band; Carrier OFF Time**Error! Bookmark not defin**

Table of Appendixes

Appendix A: FCC Part 1.1307, 1.1310, 2.1091, 2.1093: RF Exposure..... **Error! Bookmark not defined.**
Appendix B: Test Configuration Photographs ..... **Error! Bookmark not defined.**

Table of Photographs

Photograph 1: Radiated Emissions (Spurious/Harmonics) – Front View (<1 GHz)**Error! Bookmark not defined.**
Photograph 2: Radiated Emissions (Spurious/Harmonics) – Back View (<1 GHz)**Error! Bookmark not defined.**
Photograph 3: Radiated Emissions (Spurious/Harmonics) – Front View (>1 GHz)**Error! Bookmark not defined.**
Photograph 4: Radiated Emissions (Spurious/Harmonics) – Back View (>1 GHz)**Error! Bookmark not defined.**

1 Test Result Summary Multi-Band Mobile, VL/V/U/7/8/9

Test	FCC Reference	ISED Reference	Result
RF Power Output	2.1046(a), 90.541(d), 80.215, 74.461, 22.659	RSS-119 4.1, 5.4	Complies
Spurious Emissions at Antenna Terminals	2.1051, 22.359, 80.217, 90.210	RSS-119 5.5, 5.8	Complies
Field Strength of Spurious Radiation	2.1053(a), 22.359, 80.211(f)(3), 90.210, 90.543(c)	RSS-119 5.5, 5.8	Complies
Occupied Bandwidth/Emission Masks	2.1049(c)(1), 22.359(b), 74.462, 80.205, 80.211, 90.210	RSS-119 5.5, 5.8	Complies
Frequency Stability vs. Temperature and Voltage	2.1055, 22.355, 74.464, 80.209, 90.213, 90.539	RSS-119 5.3	Complies
Modulation Characteristics	2.1047(a)(b), 74.463, 80.213	RSS-119 5.2	Complies
Transient Frequency Response	74.462(c), 90.214	RSS-119 5.9	N/A

2 General Information

The following Certification Report is prepared on behalf of Harris Corporation in accordance with the Federal Communications Commission and ISED rules and regulations. The Equipment Under Test (EUT) was the XL-200M Multi-Band Mobile, VL/V/U/7/8/9, Model # XZ-MPM1M, FCC ID: OWDTR-0161-E, IC: 3636B-0161.

The radio is subject to FCC SDoC. SDoC testing was performed and the data is contained in a separate SDoC report.

All measurements contained in this application were conducted in accordance with the applicable sections of FCC Rules and Regulations CFR 47 Parts 2, 22, 74, 80, and 90. Calibration checks are performed regularly on the instruments, and all accessories including high pass filter, coaxial attenuator, preamplifier and cables.

2.1 Test Facility

The open area test site and conducted measurement facility used to collect the radiated data is located on the parking lot of Rhein Tech Laboratories, Inc. 360 Herndon Parkway, Suite 1400, Herndon, Virginia 20170. This site has been fully described in a report submitted to, and approved by, the Federal Communications Commission to perform AC line conducted and radiated emissions testing.

2.2 Related Submittal(s)/Grant(s)

This is an original certification application for Harris Corporation Model XL-200M, Model # XZ-MPM1M, FCC ID: OWDTR-0161-E, IC: 3636B-0161.

2.3 Grant Notes

RF power switchable from 2 W to rated power 100 W.

Manufacturer's rated power: 100W for VHF-L, 50W for VHF, 50W for UHF, 30 W for 700 MHz bands, 35 W for 800 and 900 MHz bands.

2.4 Tested System Details

The test sample was received on August 2, 2019. Listed below are the identifiers and descriptions of all equipment, cables, and internal devices used with the EUT for this test, as applicable.

The device was programmed for multiple modes of operation and modulation types.

Table 2-1: Equipment Under Test (EUT)

Part	Manufacturer	Model	PN/SN	FCC ID	RTL Bar Code
Vehicular Communication Hub (VCH)	Harris Corporation	Multiband Mobile, XL-200M,7/8/9	14050-1100-11/EVM2 No.25	OWDTR-0161-E	23337
Low Band PA	Harris Corporation	XM-100LPA	XM-100LPA	NA	23338
Control Head	Harris Corporation	XL-CH Mobile Control Head	14050-1150-01	NA	23341

Table 2-2: Auxiliary Equipment

Part	Manufacturer	Model	PN/SN	FCC ID	RTL Bar Code
USB Mobile Mic	Harris Corporation	USB Mobile Mic	14050-6010-01	N/A	23339
Keypad Mobile Mic	Harris Corporation	Keypad Mobile Mic	14050-6020-01	N/A	N/A
Remote Speaker	Harris Corporation	Remote Speaker	14050-6100-01	N/A	23346
Analog Deskmic	Harris Corporation	Analog Deskmic	MC-014121-003	N/A	23084
CH Mounting Kit	Harris Corporation	CH Mounting Kit	14050-6210-01	N/A	N/A
VCH Mounting Kit	Harris Corporation	VCH Mounting Kit	14050-6200-01	N/A	N/A
Antenna, Flex, Heavy-Duty, 136-870 MHz	Harris Corporation	XM-AN7G	12099-0300-01	N/A	23384
Antenna, Element, Multiband, 136-870 MHz, 0dB	Harris Corporation	XMAN6H	12099-0310-01	N/A	23354
StiCo Flexi-whip	Harris Corporation	14050-6600-01	14050-6600-01	N/A	23353
Antenna Base, Standard Roof Mount Low Loss	Harris Corporation	AN-125001-002	AN-125001-002	N/A	23385/23386
Antenna Base, Thick Roof Mount Low Loss	Harris Corporation	AN-125001-004	AN-125001-004	N/A	23388
Antenna Base, Standard Roof Mount Low Loss GPS	Harris Corporation	AN-125001-006	AN-125001-006	N/A	23344

Antenna Base, Magnetic Mount Low Loss	Harris Corporation	AN-125001-008	AN-125001-008	N/A	23389
Mount, NMO Antenna, Magnetic, Heavy-Duty	Harris Corporation	XM-AN7H	12099-0370-01	N/A	23343
Antenna, Element, 700/800 3dB	Harris Corporation	AN-225001-001	AN-225001-001	N/A	23356
Antenna, Element, 800/900 3dB; Collinear	Harris Corporation	14050-6610-01	14050-6610-01	N/A	23349
Antenna, Element, 800/900 5dB; Trilinear	Harris Corporation	14050-6611-01	14050-6611-01	N/A	23345
Antenna, Element, 1/4, 0dB, UHF-L	Harris Corporation	AN-225003-001	AN-225003-001	N/A	23367
Antenna, Element, 1/4, 0dB, UHF-H	Harris Corporation	AN-225004-001	AN-225004-001	N/A	23387
Antenna, Element, Low Profile, 0dB, UHF-H 450-512 MHz	Harris Corporation	AN-225004-004	AN-225004-004	N/A	23350
Antenna, Element, 1/4 0dB, VHF	Harris Corporation	AN-225002-001	AN-225002-001	N/A	23368
Antenna, Element, 3dB, VHF	Harris Corporation	AN-225002-003	AN-225002-003	N/A	23383
Antenna, Element, NGP, 2dB, VHF	Harris Corporation	AN-225002-004	AN-225002-004	N/A	23378
Antenna, Yagi, UHF-L 375-403 MHz, 10dB Gain	Harris Corporation	AN-025137-003	AN-025137-003	N/A	23372
Antenna, Yagi, UHF-L 406-440 MHz, 9dB Gain	Harris Corporation	AN-025137-004	AN-025137-004	N/A	23374
Antenna, Yagi, UHF-H 440-480 MHz, 10dB Gain	Harris Corporation	AN-025137-005	AN-025137-005	N/A	23373
Antenna, Yagi, UHF-H 470-512 MHz, 10dB Gain	Harris Corporation	AN-025137-006	AN-025137-006	N/A	23371
Antenna, Yagi, UHF-H 470-512 MHz, 9dB Gain	Harris Corporation	BMOY4705	AN-025137-012	N/A	N/A
Antenna, Yagi, 700 MHz,10dB Gain	Harris Corporation	AN-025137-007	AN-025137-007	N/A	23366
Antenna, Yagi, 800 MHZ, 10dB Gain	Harris Corporation	AN-025137-008	AN-025137-008	N/A	23405
Antenna, Yagi, 900 MHz, 10dB Gain	Harris Corporation	AN-025137-009	AN-025137-009	N/A	23369
Antenna, Yagi, 700/800 MHz, 6dB	Harris Corporation	AN-025137-010	AN-025137-010	N/A	23370
Antenna, VHF, 136-174 MHz, 6dB, Log Periodic	Harris Corporation	AN-025137-011	AN-025137-011	N/A	23375

Low Band Mobile Antenna 30-35 MHz NMO DC ground	Harris Corporation	AN-125001-002 (mount) with AN-025127-101 (element)	AN-025127-101	N/A	23379
Low Band Mobile Antenna 34-37 MHz NMO DC ground	Harris Corporation	AN-125001-002 (mount) with AN-025127-102 (element)	AN-025127-102	N/A	23380
Low Band Mobile Antenna 37-40 MHz NMO DC ground	Harris Corporation	AN-125001-002 (mount) with AN-025127-103 (element)	AN-025127-103	N/A	23382
Low Band Mobile Antenna 40-47 MHz NMO DC ground	Harris Corporation	AN-125001-002 (mount) with AN-025127-104 (element)	AN-025127-104	N/A	23381
Low Band Mobile Antenna 45-48 MHz NMO DC ground	Harris Corporation	AN-125001-002 (mount) with AN-025127-105 (element)	AN-025127-105	N/A	23377
Low Band Mobile Antenna 39-46 MHz NMO DC ground	Harris Corporation	ANT-DS-WPC39S0B-001	AN-025127-107	N/A	23376
Antenna, Element, 900 MHz, 3dB	Harris Corporation	AN-225005-001	AN-225005-001	N/A	23355
Antenna, GPS, Roof Mount	Harris Corporation	AN-025187-001	AN-025187-001	N/A	23088
Antenna, GPS, Magnet Mount	Harris Corporation	AN-025187-003	AN-025187-003	N/A	23346
Antenna 3dB 700/800/900, 12099-0380-01	Harris Corporation	N/A	12099-0380-01	N/A	23351

2.5 Configuration of Tested System

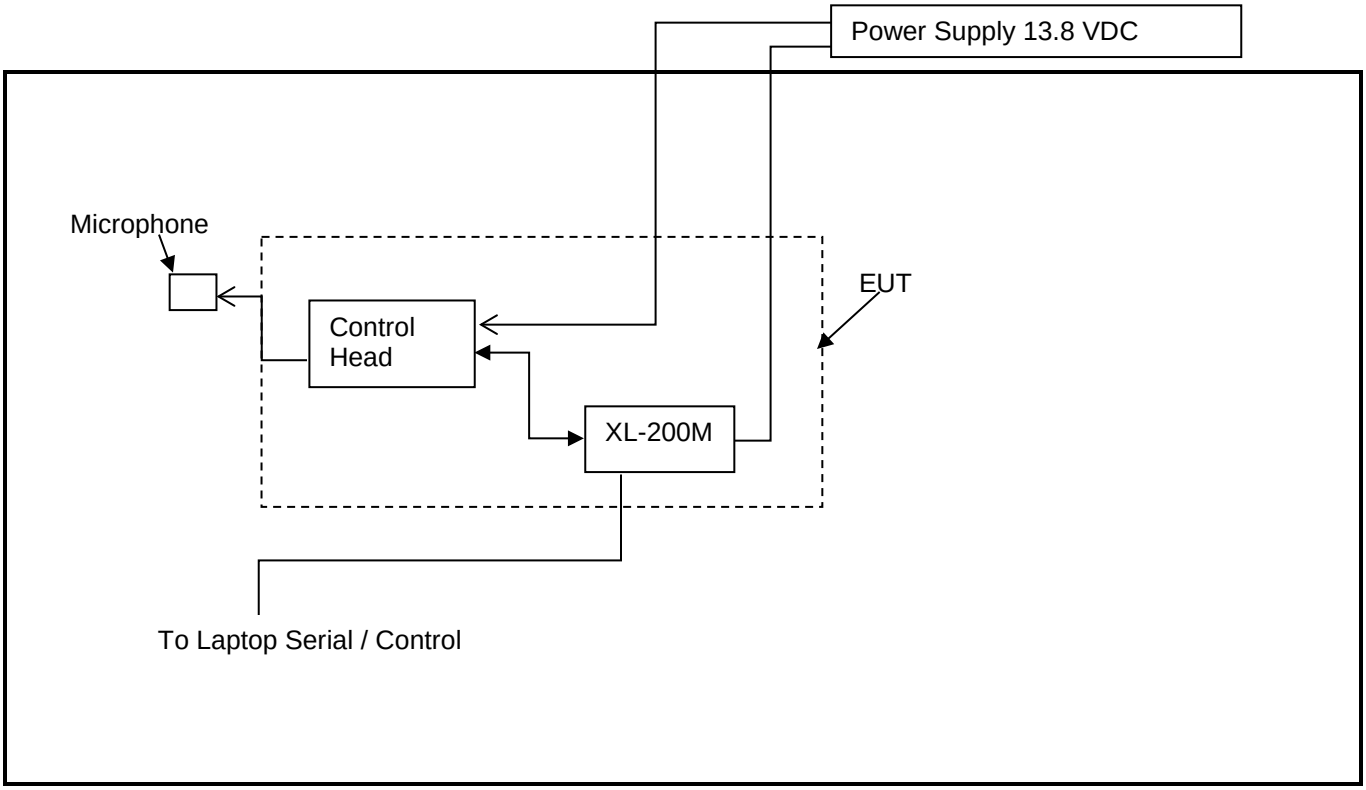


Figure 2-1: Configuration of Tested System

3 FCC Part 2.1033(C)(8): Voltages and Currents through the Final Amplifying Stage

Band	Current (Amps)	DC Voltage (Volts)	Power (Watts)
VHF-L	14.1	13.8	195.8
VHF	8.5	13.8	117.5
UHF	11.6	13.8	160.3
700	9.2	13.8	128.2
800	10.0	13.8	138.1
900	9.7	13.8	134.7

4 FCC Part 2.1046(a): RF power output: Conducted; Part 90.541(d) Transmitting power and antenna height requirements; §80.215: Transmitter Power; §22.659: Effective Radiated Power Limits; Part 74.461: Transmitter Power; ISED RSS-119 4.1: Transmitter Output Power

4.1 Test Procedure

ANSI C63.26, section 5.2

The EUT was connected to a coaxial attenuator having a 50 Ω load impedance. Manufacturer's rated power: 100W for VHF-L, 50W for VHF, 50W for UHF, 30 W for 700 MHz bands, 35 W for 800 and 900 MHz bands.

4.2 Test Data

Table 4-1: RF Conducted Output Power – Measured

Frequency (MHz)	High Power (dBm)	High Power (W)	Low Power (dBm)	Low Power (W)
33.0125	50.4	109.1	45.9	38.7
40.0125	50.5	112.2	45.7	36.9
47.9875	50.8	118.9	45.9	38.7
136.0125	47.4	55.3	33.5	2.2
138.0125	47.1	51.3	33.3	2.1
141.0000	47.1	51.3	33.2	2.1
143.9875	47.0	50.1	33.1	2.0
148.0125	47.0	50.1	33.1	2.0
150.0125	47.0	50.1	33.2	2.1
154.0125	47.0	50.1	33.1	2.0
155.0125	47.3	53.2	33.4	2.2
162.0000	46.9	49.0	33.0	2.0
173.1875	46.7	46.8	32.9	1.9
173.9875	47.0	50.0	33.1	2.0
378.0125	47.6	57.4	33.6	2.3
406.1125	46.7	46.8	32.9	1.9
418.0000	46.8	47.9	32.9	1.9
429.9875	46.7	46.8	32.8	1.9
450.0125	47.5	56.7	33.6	2.3
453.9875	46.8	47.9	32.8	1.9
456.0125	46.8	47.9	32.9	1.9
469.9875	46.8	47.9	32.9	1.9
511.9875	47.5	56.0	33.6	2.3
519.9875	46.8	47.9	33.0	2.0
763.0125	44.1	25.6	33.1	2.0
764.0125	43.2	20.9	32.3	1.7
768.0125	43.2	20.9	32.3	1.7
769.0125	43.2	20.9	32.3	1.7
771.0000	43.2	20.9	32.3	1.7
774.9875	43.2	20.9	32.3	1.7
775.9875	44.1	25.6	33.1	2.1
793.0125	44.2	26.0	33.2	2.1
794.0125	43.2	20.9	32.3	1.7
798.0125	43.3	21.4	32.4	1.7
799.0125	43.3	21.4	32.4	1.7

Frequency (MHz)	High Power (dBm)	High Power (W)	Low Power (dBm)	Low Power (W)
801.0000	43.3	21.4	32.4	1.7
804.9875	43.3	21.4	32.4	1.7
805.9875	44.3	26.7	33.3	2.1
806.0125	45.8	37.6	33.3	2.2
815.0000	45.9	38.9	32.5	1.8
823.9875	45.6	36.3	32.6	1.8
824.9875	46.1	41.1	33.4	2.2
851.0125	45.8	37.6	33.3	2.1
860.0000	44.8	30.2	32.4	1.7
868.9875	44.9	30.9	32.4	1.7
869.9875	45.7	37.4	33.2	2.1
896.0125	45.6	36.5	33.2	2.1
898.5000	44.9	30.9	32.5	1.8
900.9875	44.9	30.9	32.4	1.7
901.9875	45.8	38.0	33.3	2.1
935.0125	45.9	38.6	33.4	2.2
937.5000	44.9	30.9	32.5	1.8
939.9875	44.9	30.9	32.5	1.8
940.9875	45.7	37.4	33.2	2.1
941.0125	44.9	30.9	32.5	1.8
942.5000	44.9	30.9	32.5	1.8
943.9875	44.9	30.9	32.5	1.8

Notes: Data presented is for analog mode. All other modes were investigated and found to have equivalent power within measurement tolerances.

Table 4-2: Test Equipment Used For Testing RF Power Output - Conducted

RTL Asset #	Manufacturer	Model	Part Type	Serial Number	Calibration Due Date
901581	Rohde & Schwarz	FSU	Spectrum Analyzer	1166.1660.50	4/26/21
901724	API Weinschel, Inc.	48-40-34	40dB 100W Attenuator	CJ8921	8/7/20

Measurement uncertainties shown for these tests are expanded uncertainties expressed at the 95% confidence level using a coverage factor K=2. Measurement uncertainty: ±0.5 dB

Results: Pass

Test Personnel:

Daniel Baltzell		August 7-8, 2019
EMC Test Engineer	Signature	Dates of Test

5 FCC Part 2.1051: Spurious Emissions at Antenna Terminals; Part 90.210: Emission Limitations; §80.217: Suppression of Interference Aboard Ships; §22.359: Emission Limitations; ISED RSS-119 5.8: Transmitter Unwanted Emissions

5.1 Test Procedure

ANSI C63.26, Section 5.7

The transmitter is terminated with a 50 Ω load and interfaced with a spectrum analyzer.

Device with digital modulation: Modulated to its maximum extent using a pseudo-random data sequence.

5.2 Test Data

Frequency range of measurement per Part 2.1057: 9 kHz to 10 x Fc

Limits: (43+10LOG P(W)) for wideband and 50 + 10 LOG P(W)) for narrowband

The following channels (in MHz) were investigated:

VHF-L	VHF (MHz)	UHF (MHz)
33.0125	136.0125	378.0125
40.0125	138.0125	406.1125
47.9875	141.0000	418.0000
	143.9875	429.9875
	148.0125	450.0125
	150.0125	453.9875
	154.0125	456.0125
	155.0125	469.9875
	162.0000	511.9875
	173.1875	519.9875

700 MHz	800 MHz	900 MHz
763.0125	806.0125	900.9875
764.0125	815.0000	901.9875
768.0125	823.9875	935.0125
769.0125	824.9875	937.5000
771.0000	851.0125	939.9875
774.9875	860.0000	940.9875
775.9875	868.9875	941.0125
793.0125	869.9875	942.5000
794.0125	896.0125	943.9875
	898.5000	

Both high and low power settings were checked; high power was found to be worst case and is presented. All modes were investigated and no emissions were found within 20 dB below the limit, therefore no data is presented.

Measurement uncertainties shown for these tests are expanded uncertainties expressed at the 95% confidence level using a coverage factor K=2. Measurement uncertainty: ±0.5 dB

Results: Pass

Table 5-1: Test Equipment Used For Testing Spurious Emissions

RTL Asset #	Manufacturer	Model	Part Type	Serial Number	Calibration Due Date
901581	Rohde & Schwarz	FSU	Spectrum Analyzer	1166.1660.50	4/26/21
901724	API Weinschel, Inc.	48-40-34	40 dB 100W Attenuator	CJ8921	8/7/20
901131	Par Electronics	118-174 (25W)	VHF Notch Filter	N/A	8/10/20
901132	Par Electronics	806-902 (25W)	UHF Notch Filter	N/A	8/10/20
901134	Par Electronics	27-50 (25W)	VHF-L Notch Filter	N/A	8/10/20
901135	Par Electronics	400-512 (25W)	UHF-L Notch Filter	N/A	8/10/20

Test Personnel:

Daniel Baltzell		August 9, 2019
EMC Test Engineer	Signature	Date of Test

6 FCC Part 90.543(a): Emission Limitations: ACP Requirements; ISED RSS-119 4.3: Adjacent Channel Power (ACP) Measurement for Equipment in the Bands 764-776 MHz and 794-806 MHz

Effective October 23, 2007, transmitters designed to operate in the 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 the 763–768 MHz and 793–798 MHz bands must meet the emission limitations in (e) of this section.

6.1 Test Procedure

ANSI C63.26, Section 6.5.2.4

Adjacent channel power measurements for equipment operating in the 769 MHz to 775 MHz and 799 MHz to 805 MHz (public safety) bands.

Device with digital modulation: Modulated to its maximum extent using a pseudo-random data sequence.

For a Mobile transmitter designed to operate with a 12.5 kHz channel bandwidth, the ACP shall be in accordance with the values in the following table:

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
(+/-)37.5	25	-60
(+/-)62.5	25	-65
(+/-)87.5	25	-65
(+/-)150	100	-65
(+/-)250	100	-65
(+/-)350	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

For a Mobile transmitter designed to operate with a 25 kHz channel bandwidth, the ACP shall be in accordance with the values in the following table:

Offset from Center Frequency (kHz)	Measurement Bandwidth (kHz)	Maximum ACP Relative (dBc)
(+/-)15.625	6.25	-40
(+/-)21.875	6.25	-60
(+/-)37.5	25	-60
(+/-)62.5	25	-65
(+/-)87.5	25	-65
(+/-)150	100	-65
(+/-)250	100	-65
(+/-)350	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

FCC Rules and Regulations - 90.543(b)

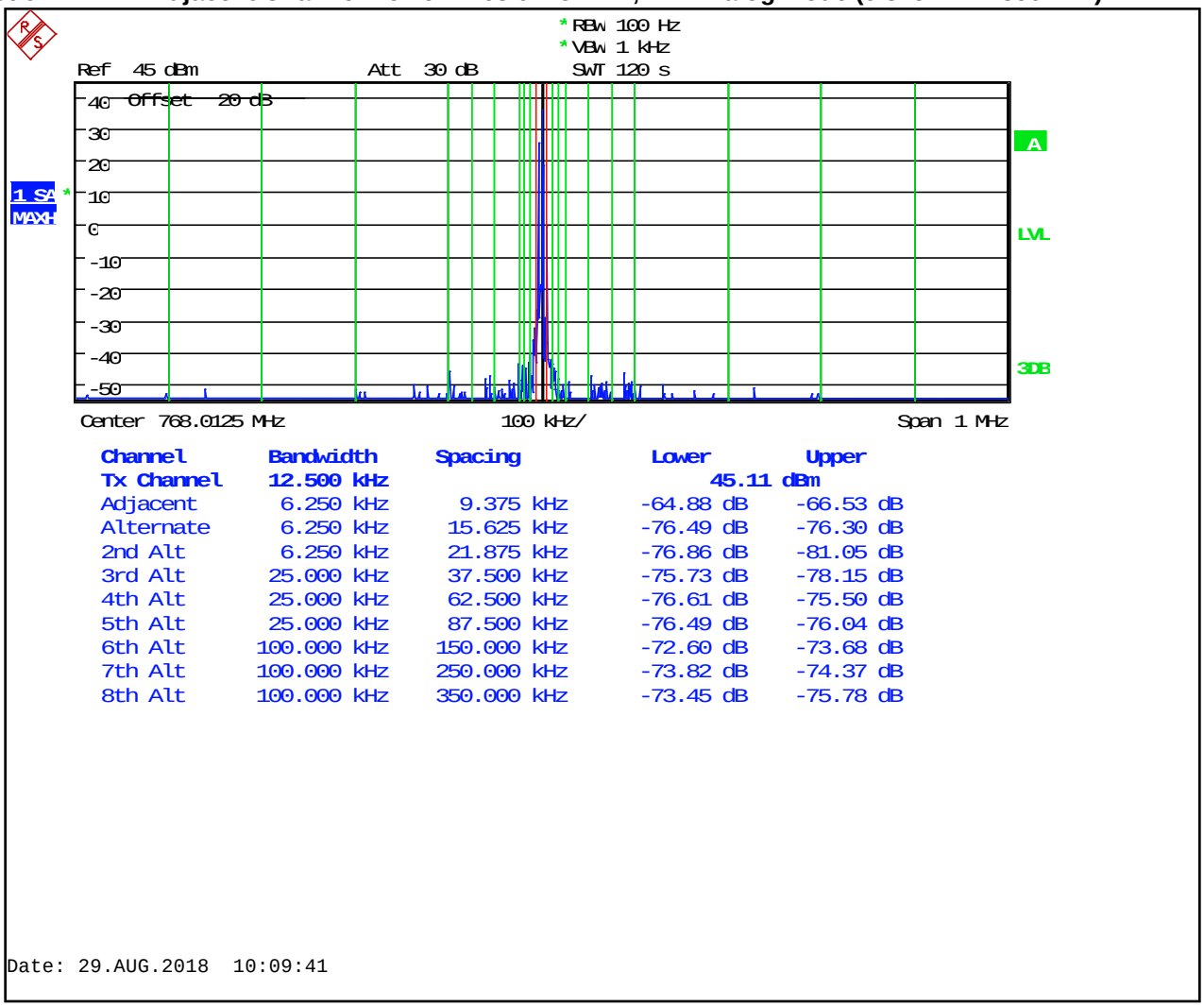
Setting Reference Level - 90.543(b)(1): Using a spectrum analyzer capable of ACP measurements, set the measurement bandwidth to the channel size. Set the frequency offset of the measurement to zero and adjust the center frequency of the spectrum analyzer to give the power level in the measurement bandwidth. Record this power as the reference power level.

Measuring the power level at the frequency offset <600 kHz - §90.543(b)(2): Using a spectrum analyzer capable of adjacent channel power (ACP) measurements, set the measurement bandwidth as shown in the table. Measure ACP in dBm. These measurements are made at maximum power. Calculate the coupled power by subtracting the measurements made in this step from the reference power level. The absolute ACP values must be less than the values given in the table for each condition.

Measuring the power level at the frequency offset >600 kHz - §90.543(b)(3): Set the spectrum analyzer to 30 kHz resolution bandwidth, 1 MHz video bandwidth and sample detection mode. Sweep +/-6 MHz from the carrier frequency. Set the reference level to the RMS value of the transmitter power and note the power. The response at frequencies >600 kHz must be less than the values listed in the table.

6.2 Test Data

Plot 6-1: Adjacent Channel Power - 768.0125 MHz; NB Analog Mode (9.375 kHz - 350 kHz)



Channel	Bandwidth	Spacing	Lower	Upper
Tx Channel	12.500 kHz		45.11 dBm	
Adjacent	6.250 kHz	9.375 kHz	-64.88 dB	-66.53 dB
Alternate	6.250 kHz	15.625 kHz	-76.49 dB	-76.30 dB
2nd Alt	6.250 kHz	21.875 kHz	-76.86 dB	-81.05 dB
3rd Alt	25.000 kHz	37.500 kHz	-75.73 dB	-78.15 dB
4th Alt	25.000 kHz	62.500 kHz	-76.61 dB	-75.50 dB
5th Alt	25.000 kHz	87.500 kHz	-76.49 dB	-76.04 dB
6th Alt	100.000 kHz	150.000 kHz	-72.60 dB	-73.68 dB
7th Alt	100.000 kHz	250.000 kHz	-73.82 dB	-74.37 dB
8th Alt	100.000 kHz	350.000 kHz	-73.45 dB	-75.78 dB

Table 6-1: Adjacent Channel Power - 768.0125 MHz; NB Analog Mode (>400 kHz - RX Band)

Offset from Center Frequency (kHz)	Measurement BW (kHz)	Max ACP (dBc)	Measured ACP (dBc)
>400 to 12 MHz	30(s)	-75	-83.7
12 MHz to receive band	30(s)	-75	-92.1
In receive band	30(s)	-100	-114.2

Plot 6-2: Adjacent Channel Power – 772.0000 MHz; NB Analog Mode (9.375 kHz - 350 kHz)

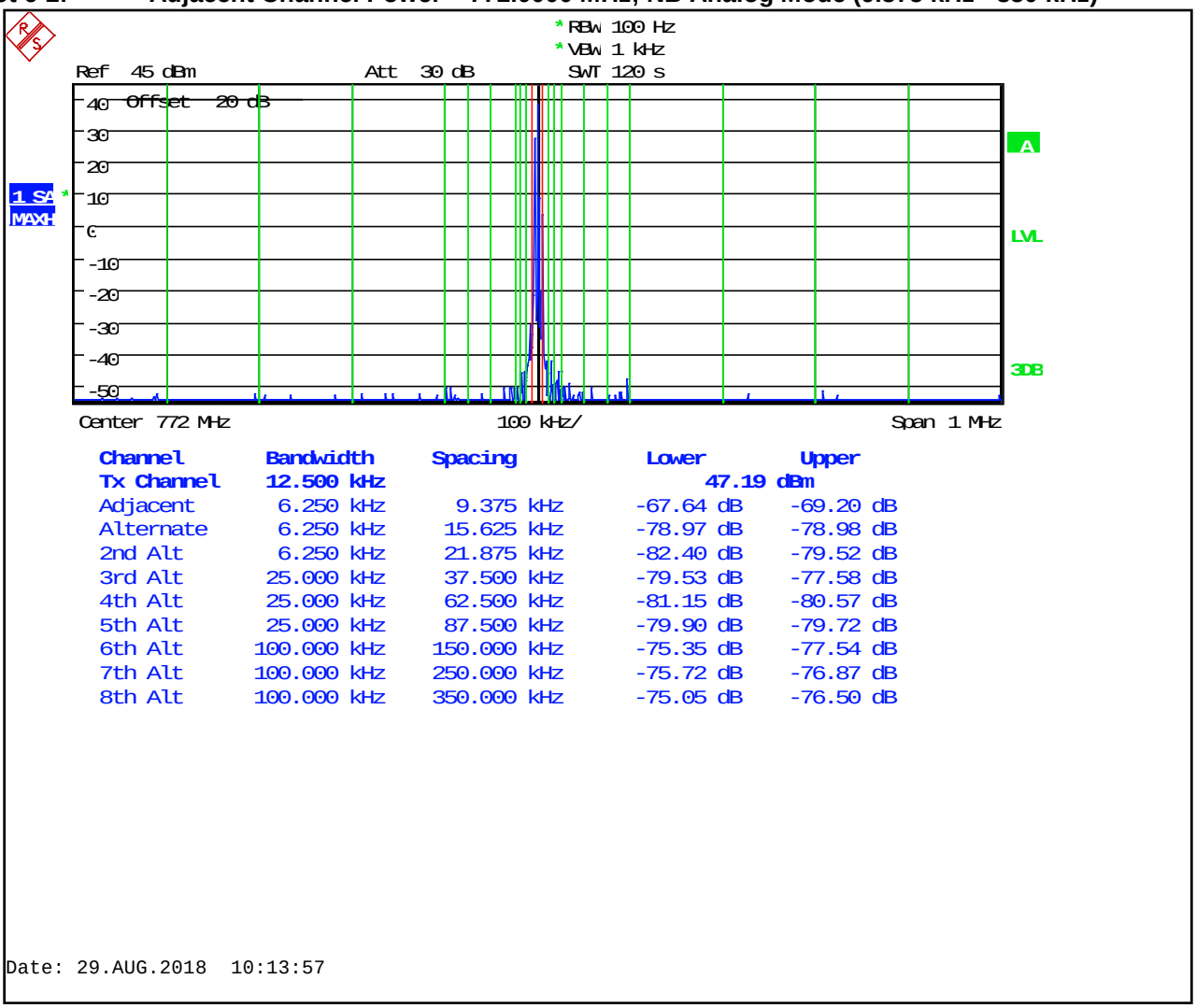
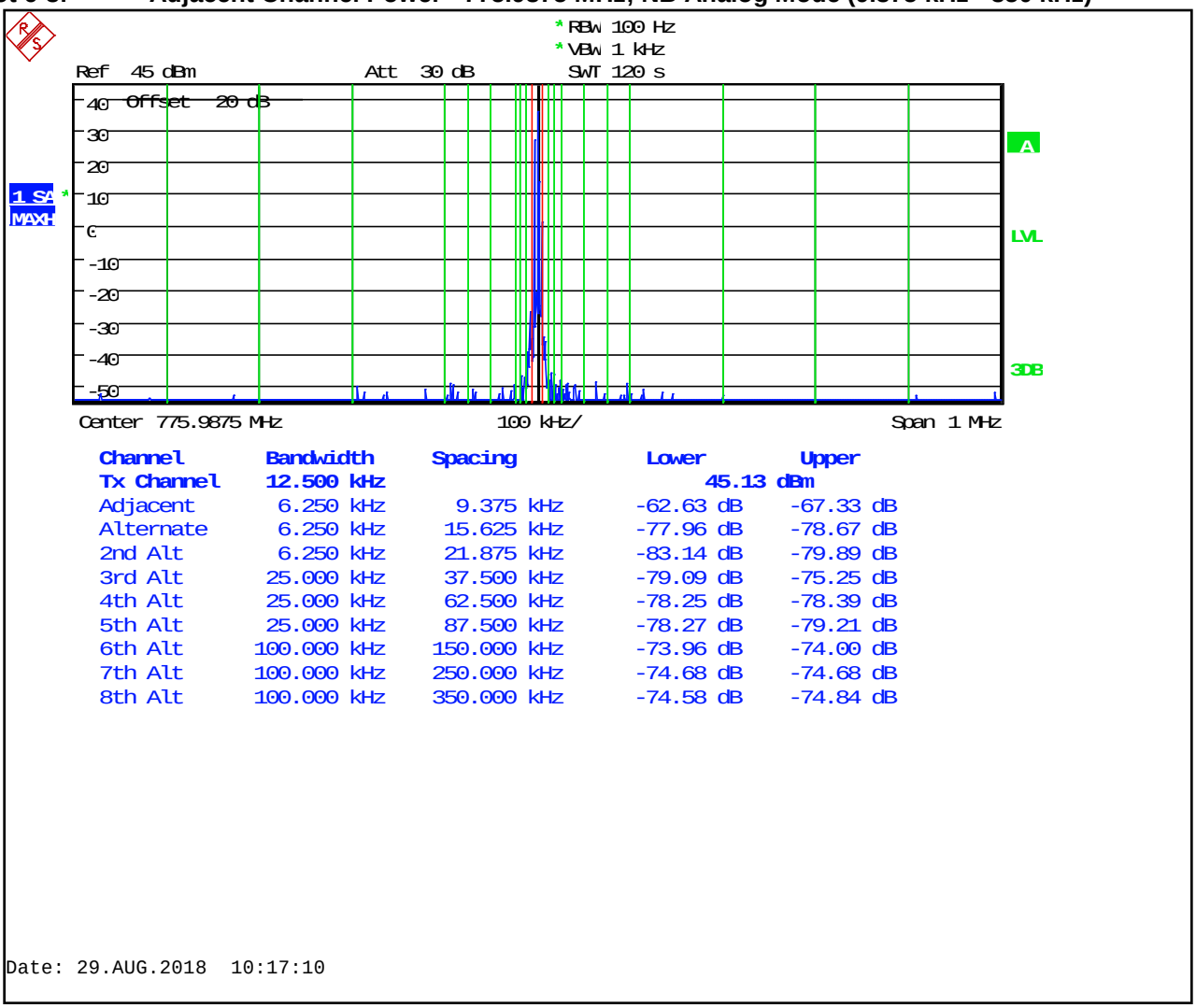


Table 6-2: Adjacent Channel Power – 772.0000 MHz; NB Analog Mode (>400 kHz - RX Band)

Offset from Center Frequency (kHz)	Measurement BW (kHz)	Max ACP (dBc)	Measured ACP (dBc)
>400 to 12 MHz	30(s)	-75	-83.4
12 MHz to receive band	30(s)	-75	-100.6
In receive band	30(s)	-100	-114.9

Plot 6-3: Adjacent Channel Power - 775.9875 MHz; NB Analog Mode (9.375 kHz - 350 kHz)

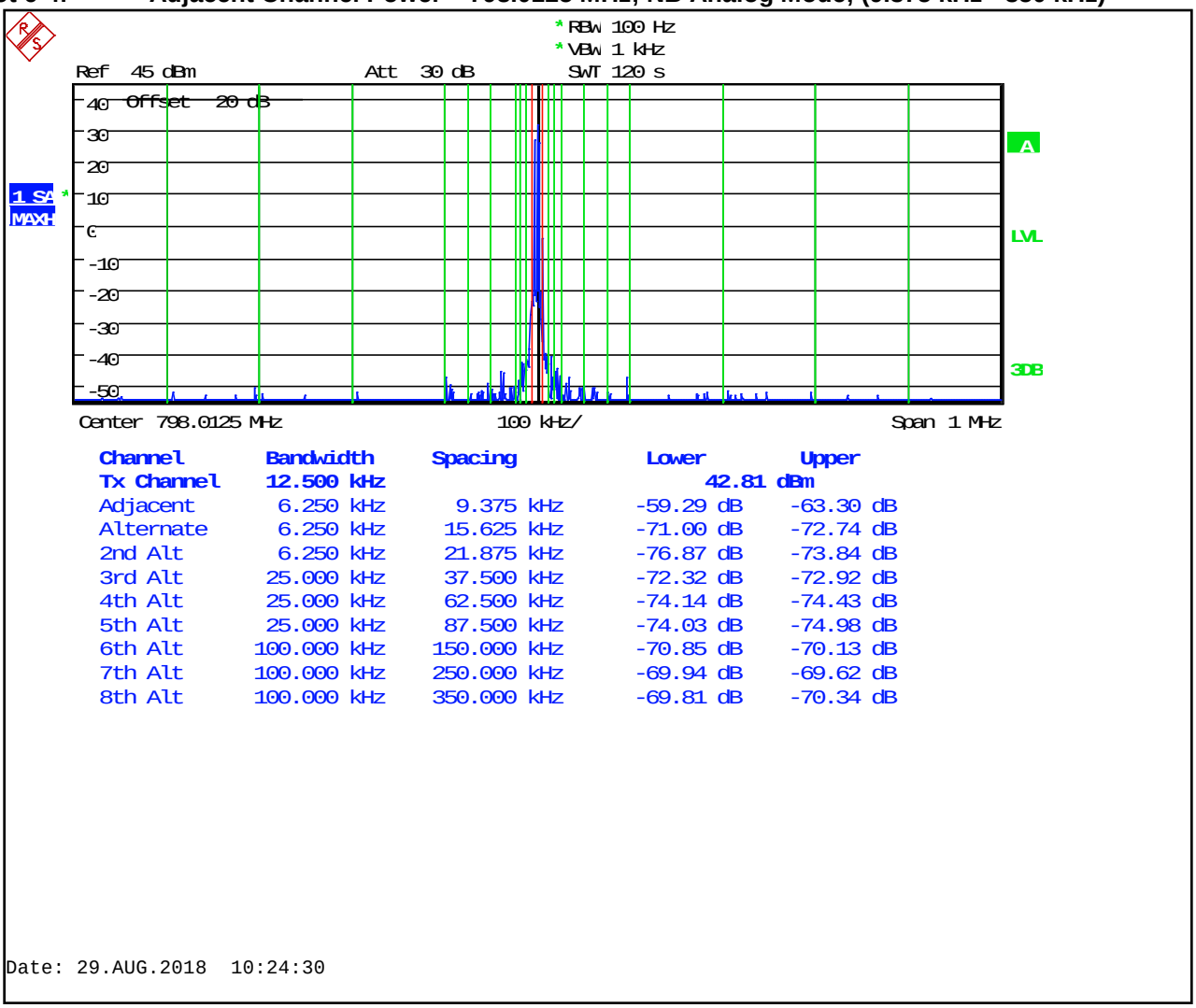


Channel	Bandwidth	Spacing	Lower	Upper
Tx Channel	12.500 kHz		45.13 dBm	
Adjacent	6.250 kHz	9.375 kHz	-62.63 dB	-67.33 dB
Alternate	6.250 kHz	15.625 kHz	-77.96 dB	-78.67 dB
2nd Alt	6.250 kHz	21.875 kHz	-83.14 dB	-79.89 dB
3rd Alt	25.000 kHz	37.500 kHz	-79.09 dB	-75.25 dB
4th Alt	25.000 kHz	62.500 kHz	-78.25 dB	-78.39 dB
5th Alt	25.000 kHz	87.500 kHz	-78.27 dB	-79.21 dB
6th Alt	100.000 kHz	150.000 kHz	-73.96 dB	-74.00 dB
7th Alt	100.000 kHz	250.000 kHz	-74.68 dB	-74.68 dB
8th Alt	100.000 kHz	350.000 kHz	-74.58 dB	-74.84 dB

Table 6-3: Adjacent Channel Power - 775.9875 MHz; NB Analog Mode (>400 kHz - RX Band)

Offset from Center Frequency (kHz)	Measurement BW (kHz)	Max ACP (dBc)	Measured ACP (dBc)
>400 to 12 MHz	30(s)	-75	-84.4
12 MHz to receive band	30(s)	-75	-100.6
In receive band	30(s)	-100	-112.2

Plot 6-4: Adjacent Channel Power – 798.0125 MHz; NB Analog Mode; (9.375 kHz - 350 kHz)



Channel	Bandwidth	Spacing	Lower	Upper
Tx Channel	12.500 kHz		42.81 dBm	
Adjacent	6.250 kHz	9.375 kHz	-59.29 dB	-63.30 dB
Alternate	6.250 kHz	15.625 kHz	-71.00 dB	-72.74 dB
2nd Alt	6.250 kHz	21.875 kHz	-76.87 dB	-73.84 dB
3rd Alt	25.000 kHz	37.500 kHz	-72.32 dB	-72.92 dB
4th Alt	25.000 kHz	62.500 kHz	-74.14 dB	-74.43 dB
5th Alt	25.000 kHz	87.500 kHz	-74.03 dB	-74.98 dB
6th Alt	100.000 kHz	150.000 kHz	-70.85 dB	-70.13 dB
7th Alt	100.000 kHz	250.000 kHz	-69.94 dB	-69.62 dB
8th Alt	100.000 kHz	350.000 kHz	-69.81 dB	-70.34 dB

Table 6-4: Adjacent Channel Power – 798.0125 MHz; NB Analog Mode (>400 kHz - RX Band)

Offset from Center Frequency (kHz)	Measurement BW (kHz)	Max ACP (dBc)	Measured ACP (dBc)
>400 to 12 MHz	30(s)	-75	-84.6
12 MHz to receive band	30(s)	-75	-101.2
In receive band	30(s)	-100	-101.8

Plot 6-5: Adjacent Channel Power – 802.0000 MHz; NB Analog Mode; (9.375 kHz - 350 kHz)

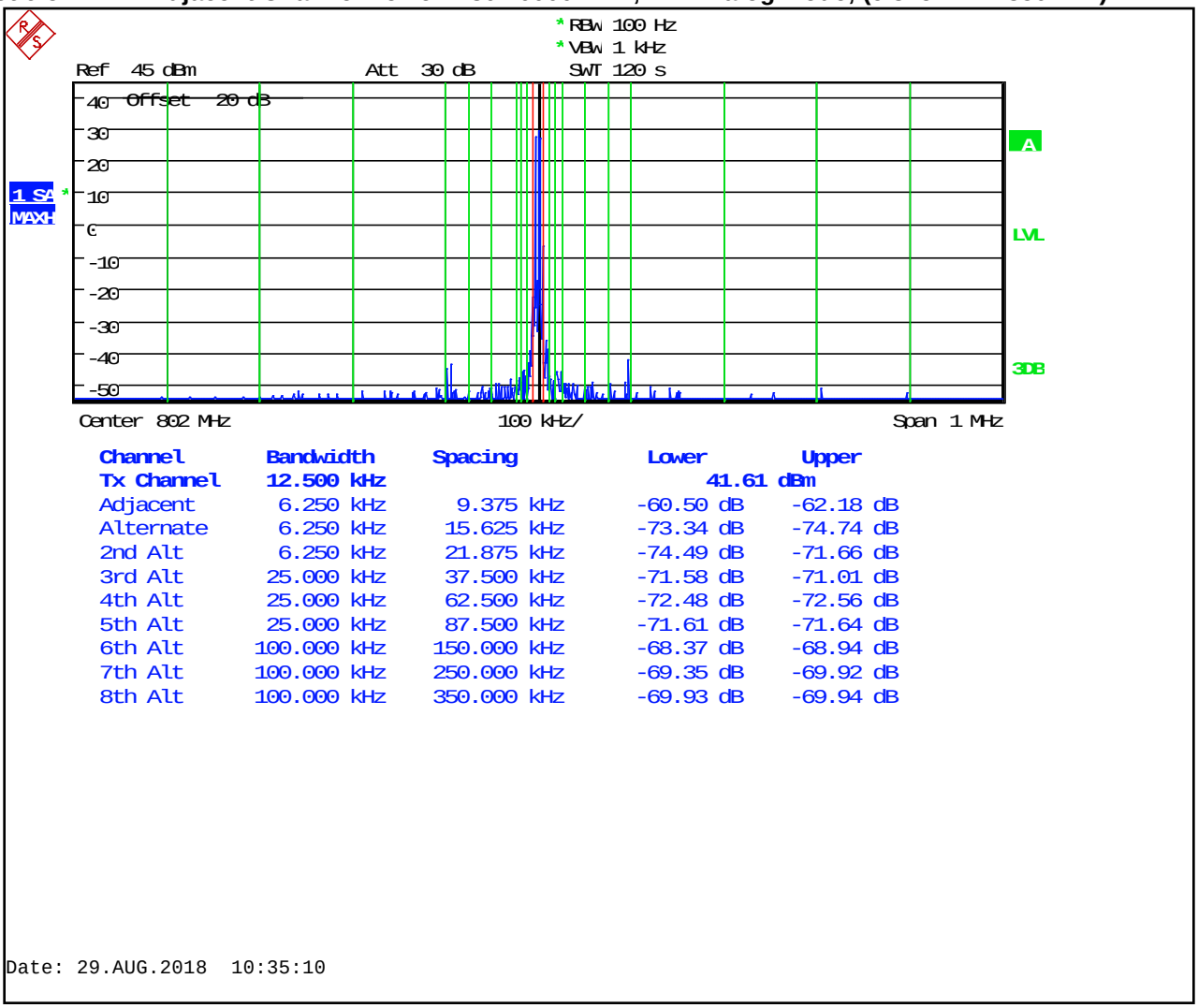


Table 6-5: Adjacent Channel Power – 802.0000 MHz; NB Analog Mode (>400 kHz - RX Band)

Offset from Center Frequency (kHz)	Measurement BW (kHz)	Max ACP (dBc)	Measured ACP (dBc)
>400 to 12 MHz	30(s)	-75	-85.3
12 MHz to receive band	30(s)	-75	-100.5
In receive band	30(s)	-100	-109.0

Plot 6-6: Adjacent Channel Power – 805.9875 MHz; NB Analog Mode; (9.375 kHz - 350 kHz)

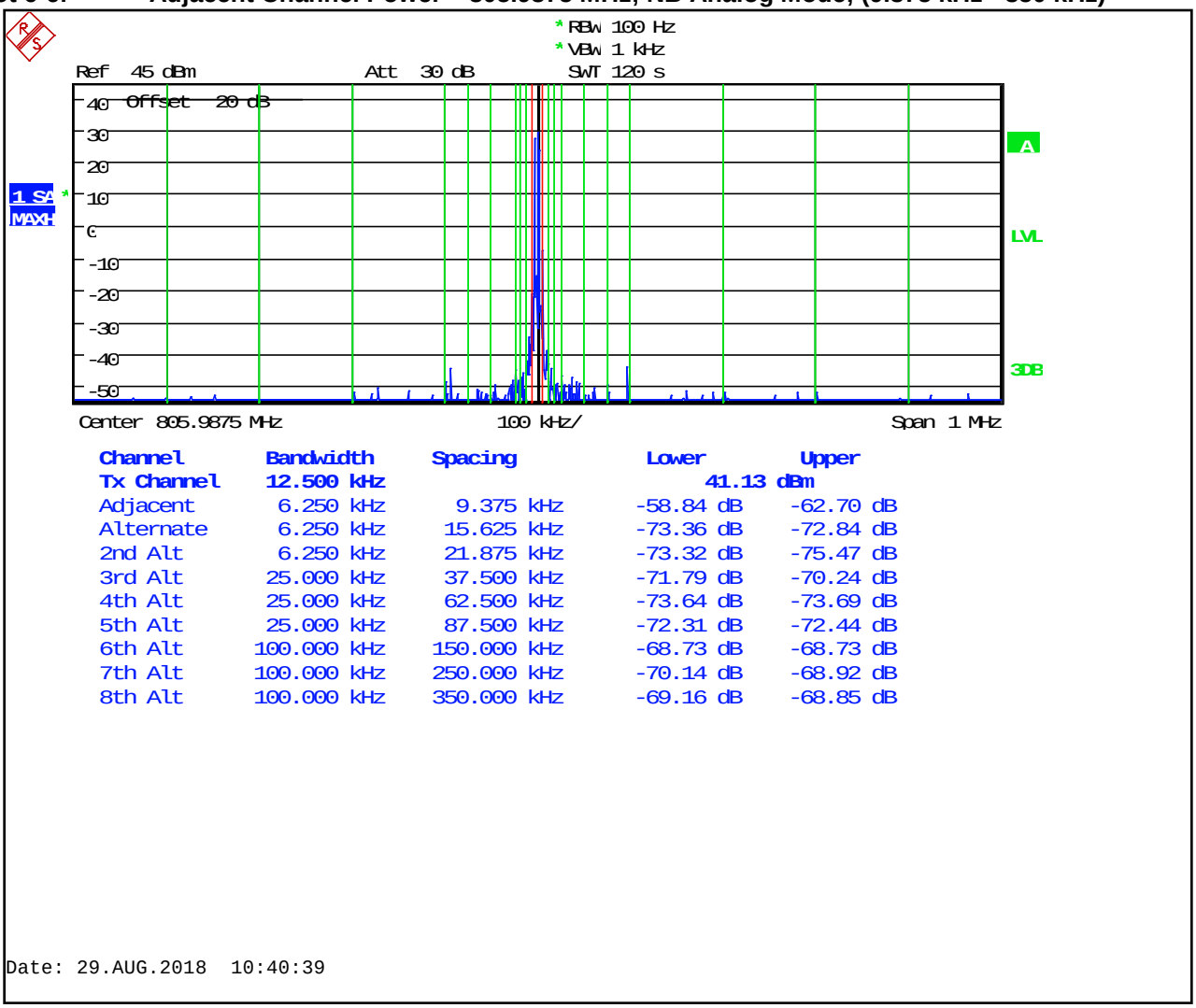


Table 6-6: Adjacent Channel Power – 805.9875 MHz; NB Analog Mode (>400 kHz - RX Band)

Offset from Center Frequency (kHz)	Measurement BW (kHz)	Max ACP (dBc)	Measured ACP (dBc)
>400 to 12 MHz	30(s)	-75	-85.1
12 MHz to receive band	30(s)	-75	-100.2
In receive band	30(s)	-100	-110.9

Plot 6-7: Adjacent Channel Power - 768.0125 MHz; NB 2-Level FSK 9600 (9.375 kHz - 350 kHz)

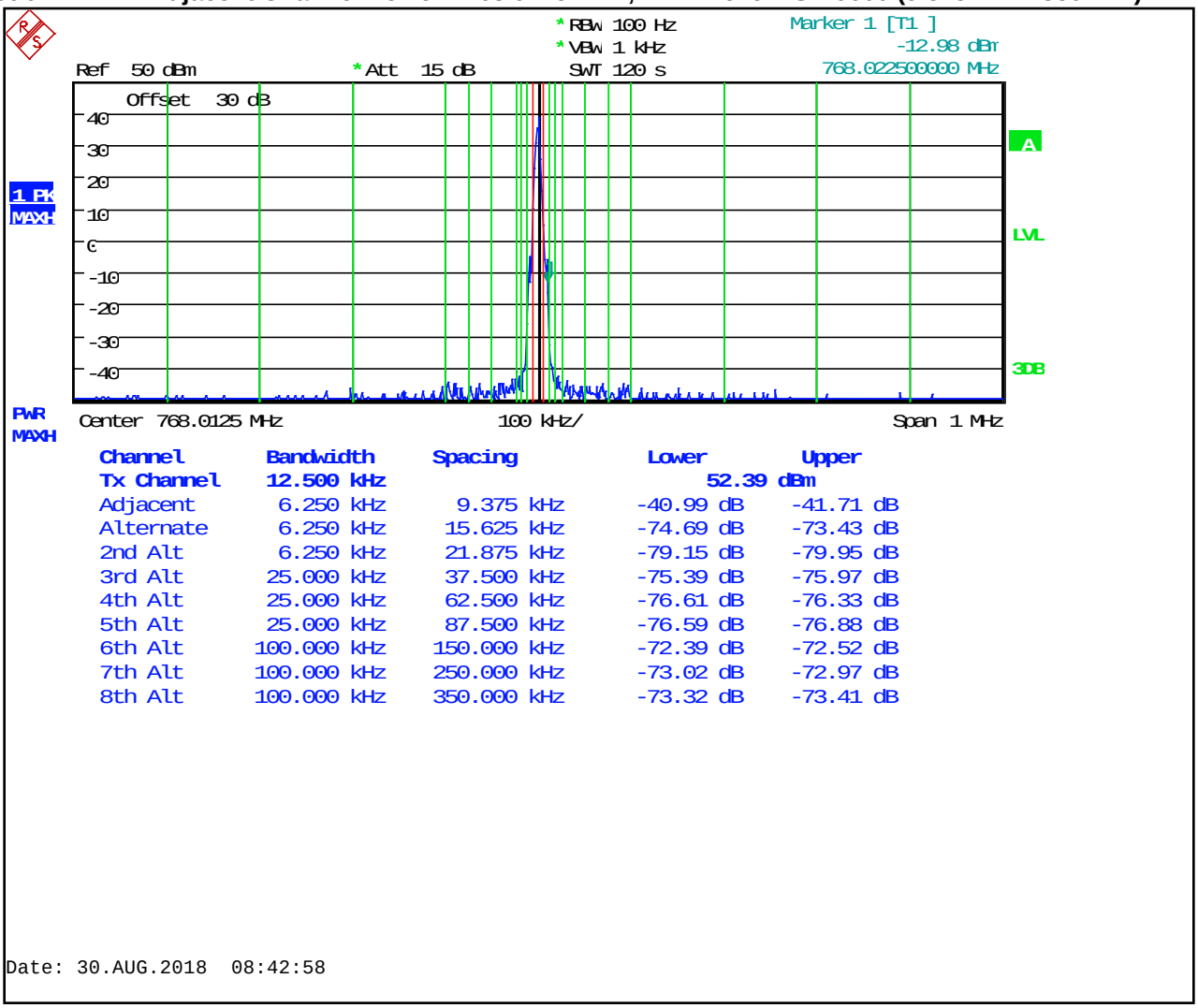
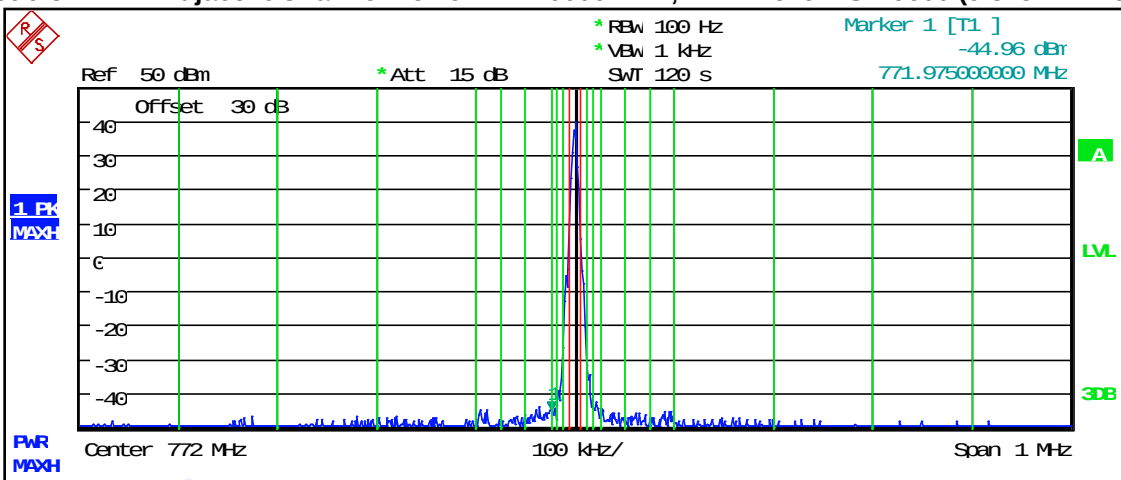


Table 6-7: Adjacent Channel Power - 768.0125 MHz; NB 2-Level FSK 9600 (>400 kHz - RX Band)

Offset from Center Frequency (kHz)	Measurement BW (kHz)	Max ACP (dBc)	Measured ACP (dBc)
>400 to 12 MHz	30(s)	-75	-80.4
12 MHz to receive band	30(s)	-75	-85.8
In receive band	30(s)	-100	-105.3

Plot 6-8: Adjacent Channel Power - 772.0000 MHz; NB 2-Level FSK 9600 (9.375 kHz - 350 kHz)



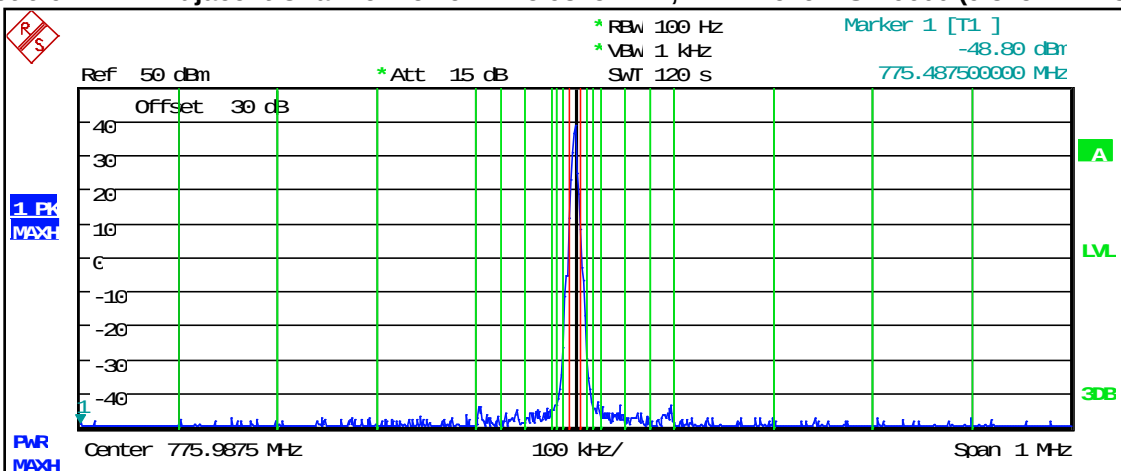
Channel	Bandwidth	Spacing	Lower	Upper
Tx Channel	12.500 kHz		53.34 dBm	
Adjacent	6.250 kHz	9.375 kHz	-41.31 dB	-40.12 dB
Alternate	6.250 kHz	15.625 kHz	-74.63 dB	-73.80 dB
2nd Alt	6.250 kHz	21.875 kHz	-80.59 dB	-79.48 dB
3rd Alt	25.000 kHz	37.500 kHz	-76.59 dB	-76.72 dB
4th Alt	25.000 kHz	62.500 kHz	-78.03 dB	-77.55 dB
5th Alt	25.000 kHz	87.500 kHz	-77.85 dB	-77.50 dB
6th Alt	100.000 kHz	150.000 kHz	-72.03 dB	-72.70 dB
7th Alt	100.000 kHz	250.000 kHz	-72.52 dB	-73.36 dB
8th Alt	100.000 kHz	350.000 kHz	-72.89 dB	-73.38 dB

Date: 30.AUG.2018 08:39:56

Table 6-8: Adjacent Channel Power - 772.0000 MHz; NB 2-Level FSK 9600 (>400 kHz - RX Band)

Offset from Center Frequency (kHz)	Measurement BW (kHz)	Max ACP (dBc)	Measured ACP (dBc)
>400 to 12 MHz	30(s)	-75	-84.3
12 MHz to receive band	30(s)	-75	-93.2
In receive band	30(s)	-100	-105.3

Plot 6-9: Adjacent Channel Power - 775.9875 MHz; NB 2-Level FSK 9600 (9.375 kHz - 350 kHz)



Channel	Bandwidth	Spacing	Lower	Upper
Tx Channel	12.500 kHz		53.22 dBm	
Adjacent	6.250 kHz	9.375 kHz	-40.83 dB	-40.16 dB
Alternate	6.250 kHz	15.625 kHz	-73.89 dB	-73.24 dB
2nd Alt	6.250 kHz	21.875 kHz	-79.67 dB	-79.76 dB
3rd Alt	25.000 kHz	37.500 kHz	-75.90 dB	-76.12 dB
4th Alt	25.000 kHz	62.500 kHz	-77.06 dB	-77.02 dB
5th Alt	25.000 kHz	87.500 kHz	-76.85 dB	-77.06 dB
6th Alt	100.000 kHz	150.000 kHz	-72.34 dB	-72.50 dB
7th Alt	100.000 kHz	250.000 kHz	-72.51 dB	-72.86 dB
8th Alt	100.000 kHz	350.000 kHz	-72.86 dB	-72.82 dB

Date: 30.AUG.2018 09:17:10

Table 6-9: Adjacent Channel Power - 775.9875 MHz; NB 2-Level FSK 9600 (>400 kHz - RX Band)

Offset from Center Frequency (kHz)	Measurement BW (kHz)	Max ACP (dBc)	Measured ACP (dBc)
>400 to 12 MHz	30(s)	-75	-84.8
12 MHz to receive band	30(s)	-75	-93.1
In receive band	30(s)	-100	-104.2

Plot 6-10: Adjacent Channel Power – 798.0125 MHz; NB 2-Level FSK 9600 (9.375 kHz - 350 kHz)

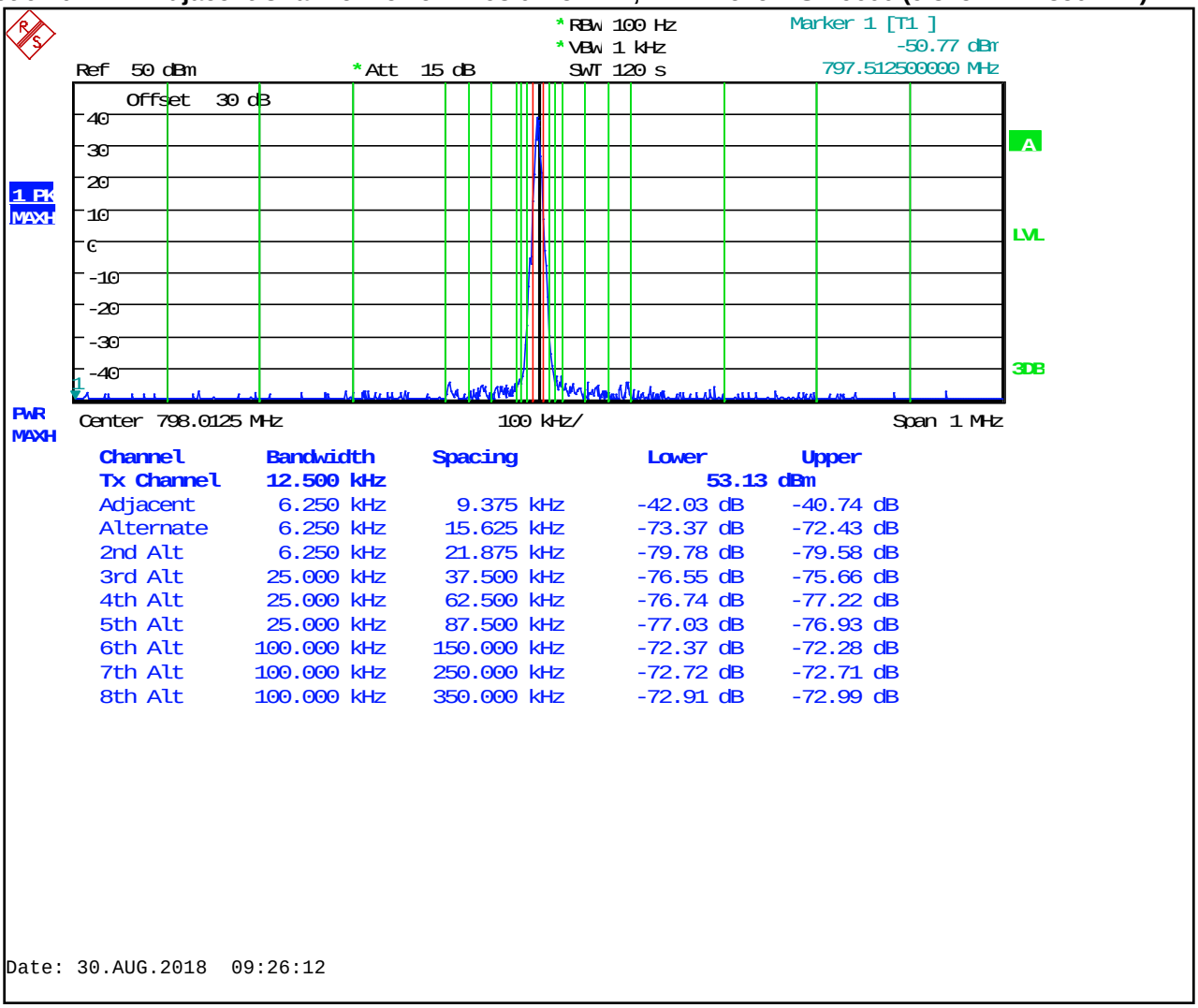
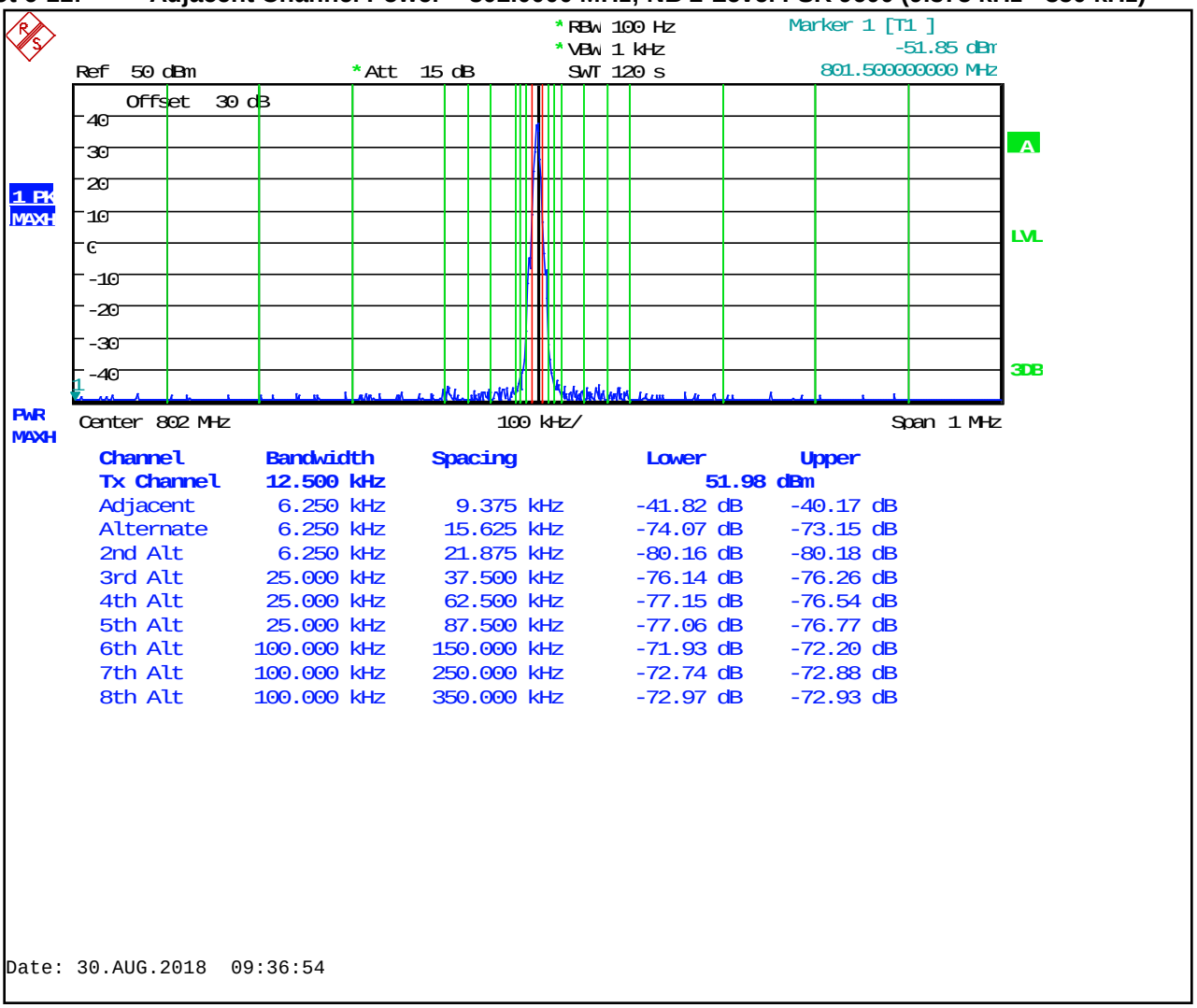


Table 6-10: Adjacent Channel Power – 798.0125 MHz; NB 2-Level FSK 9600 (>400 kHz - RX Band)

Offset from Center Frequency (kHz)	Measurement BW (kHz)	Max ACP (dBc)	Measured ACP (dBc)
>400 to 12 MHz	30(s)	-75	-84.6
12 MHz to receive band	30(s)	-75	-93.3
In receive band	30(s)	-100	-100.7

Plot 6-11: Adjacent Channel Power – 802.0000 MHz; NB 2-Level FSK 9600 (9.375 kHz - 350 kHz)

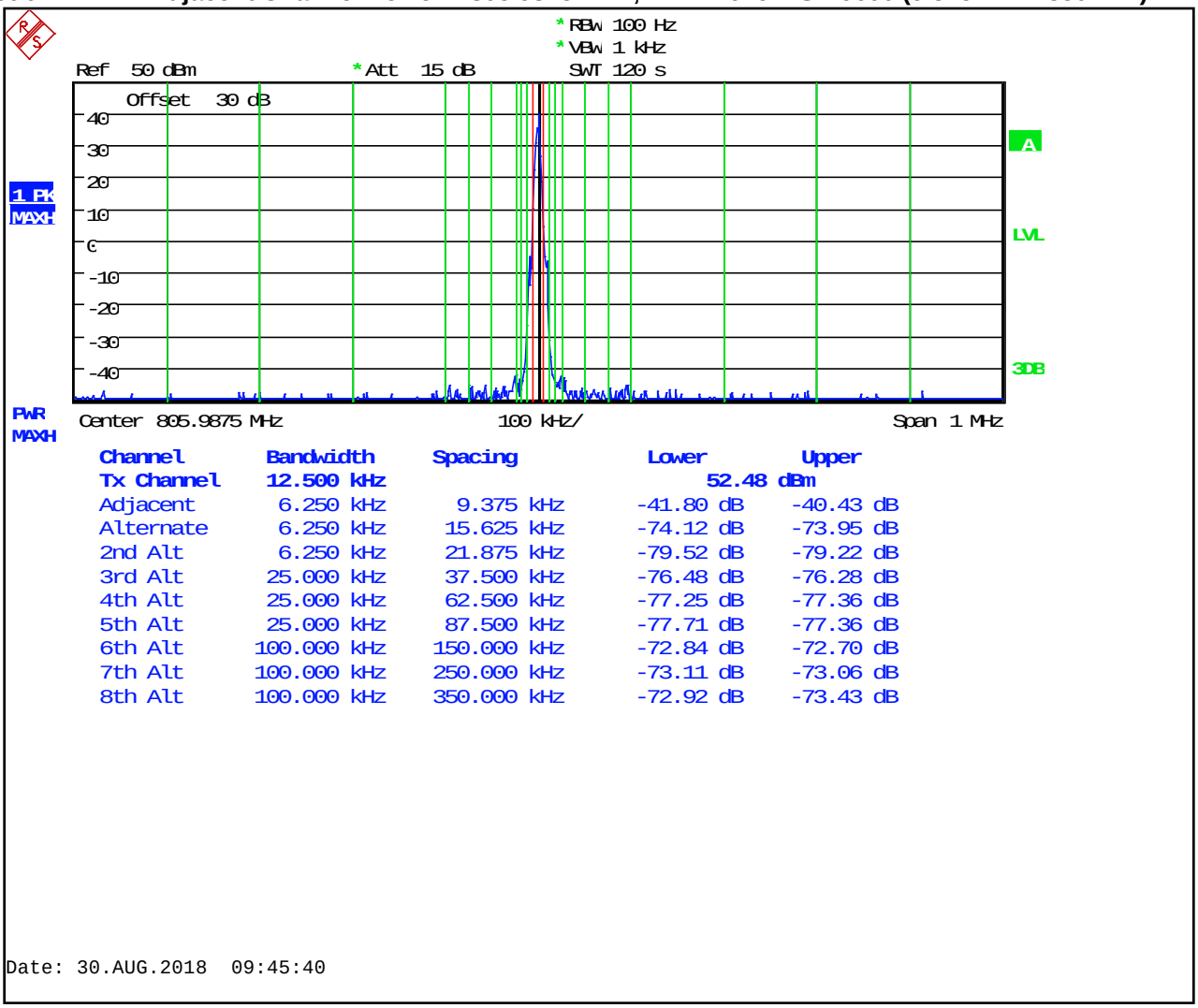


Channel	Bandwidth	Spacing	Lower	Upper
Tx Channel	12.500 kHz		51.98 dBm	
Adjacent	6.250 kHz	9.375 kHz	-41.82 dB	-40.17 dB
Alternate	6.250 kHz	15.625 kHz	-74.07 dB	-73.15 dB
2nd Alt	6.250 kHz	21.875 kHz	-80.16 dB	-80.18 dB
3rd Alt	25.000 kHz	37.500 kHz	-76.14 dB	-76.26 dB
4th Alt	25.000 kHz	62.500 kHz	-77.15 dB	-76.54 dB
5th Alt	25.000 kHz	87.500 kHz	-77.06 dB	-76.77 dB
6th Alt	100.000 kHz	150.000 kHz	-71.93 dB	-72.20 dB
7th Alt	100.000 kHz	250.000 kHz	-72.74 dB	-72.88 dB
8th Alt	100.000 kHz	350.000 kHz	-72.97 dB	-72.93 dB

Table 6-11: Adjacent Channel Power – 802.0000 MHz; NB 2-Level FSK 9600 (>400 kHz - RX Band)

Offset from Center Frequency (kHz)	Measurement BW (kHz)	Max ACP (dBc)	Measured ACP (dBc)
>400 to 12 MHz	30(s)	-75	-85.0
12 MHz to receive band	30(s)	-75	-93.1
In receive band	30(s)	-100	-103.1

Plot 6-12: Adjacent Channel Power – 805.9875 MHz; NB 2-Level FSK 9600 (9.375 kHz - 350 kHz)



Channel	Bandwidth	Spacing	Lower	Upper
Tx Channel	12.500 kHz		52.48 dBm	
Adjacent	6.250 kHz	9.375 kHz	-41.80 dB	-40.43 dB
Alternate	6.250 kHz	15.625 kHz	-74.12 dB	-73.95 dB
2nd Alt	6.250 kHz	21.875 kHz	-79.52 dB	-79.22 dB
3rd Alt	25.000 kHz	37.500 kHz	-76.48 dB	-76.28 dB
4th Alt	25.000 kHz	62.500 kHz	-77.25 dB	-77.36 dB
5th Alt	25.000 kHz	87.500 kHz	-77.71 dB	-77.36 dB
6th Alt	100.000 kHz	150.000 kHz	-72.84 dB	-72.70 dB
7th Alt	100.000 kHz	250.000 kHz	-73.11 dB	-73.06 dB
8th Alt	100.000 kHz	350.000 kHz	-72.92 dB	-73.43 dB

Table 6-12: Adjacent Channel Power – 805.9875 MHz; NB 2-Level FSK 9600 (>400 kHz - RX Band)

Offset from Center Frequency (kHz)	Measurement BW (kHz)	Max ACP (dBc)	Measured ACP (dBc)
>400 to 12 MHz	30(s)	-75	-85.7
12 MHz to receive band	30(s)	-75	-93.1
In receive band	30(s)	-100	-104.8

Plot 6-13: Adjacent Channel Power - 768.0125 MHz; C4FM Mode (9.375 kHz - 350 kHz)

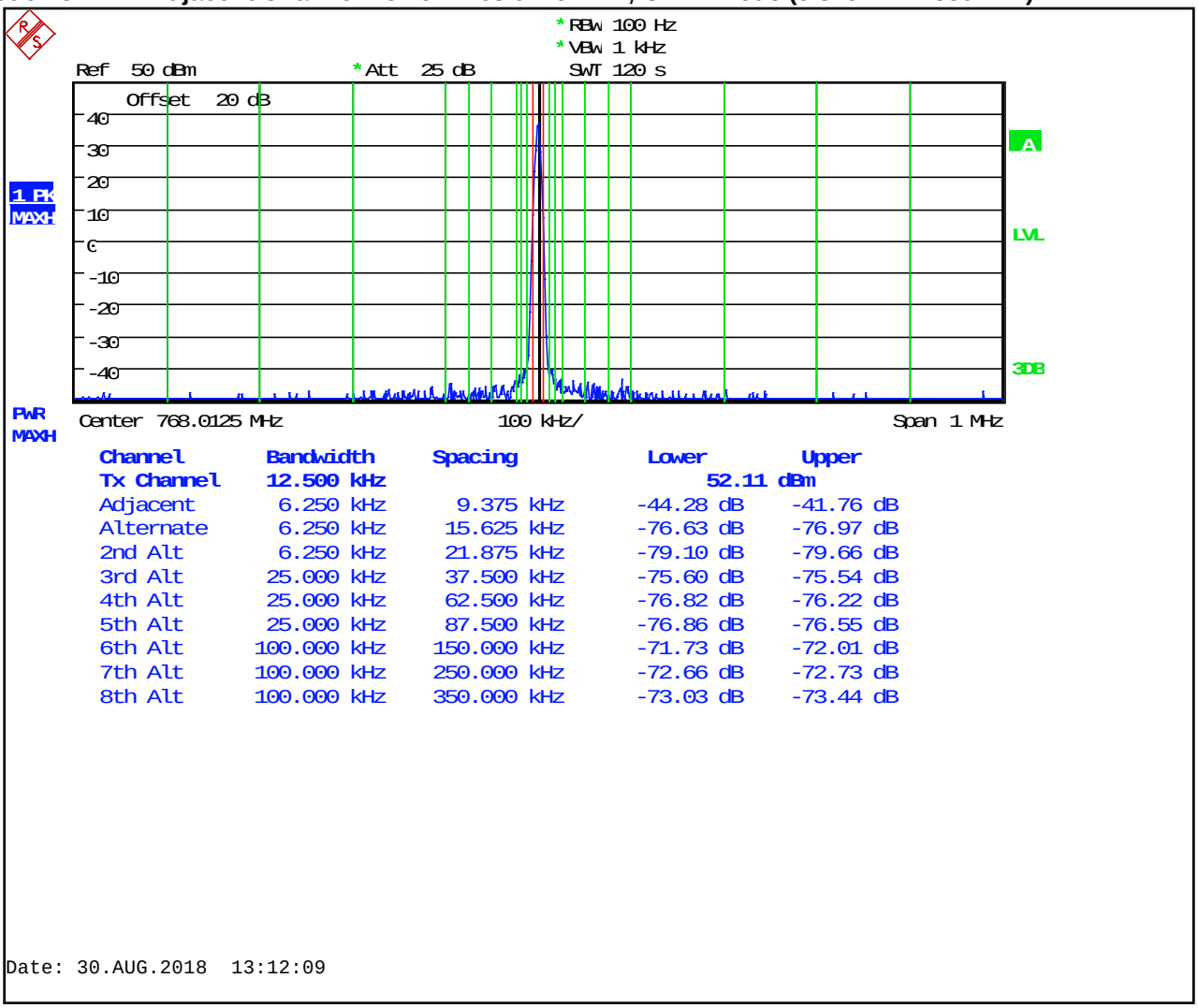


Table 6-13: Adjacent Channel Power - 768.0125 MHz; C4FM Mode (>400 kHz - RX Band)

Offset from Center Frequency (kHz)	Measurement BW (kHz)	Max ACP (dBc)	Measured ACP (dBc)
>400 to 12 MHz	30(s)	-75	-92.0
12 MHz to receive band	30(s)	-75	-97.9
In receive band	30(s)	-100	-108.5

Plot 6-14: Adjacent Channel Power - 772.0000 MHz; C4FM Mode (9.375 kHz - 350 kHz)

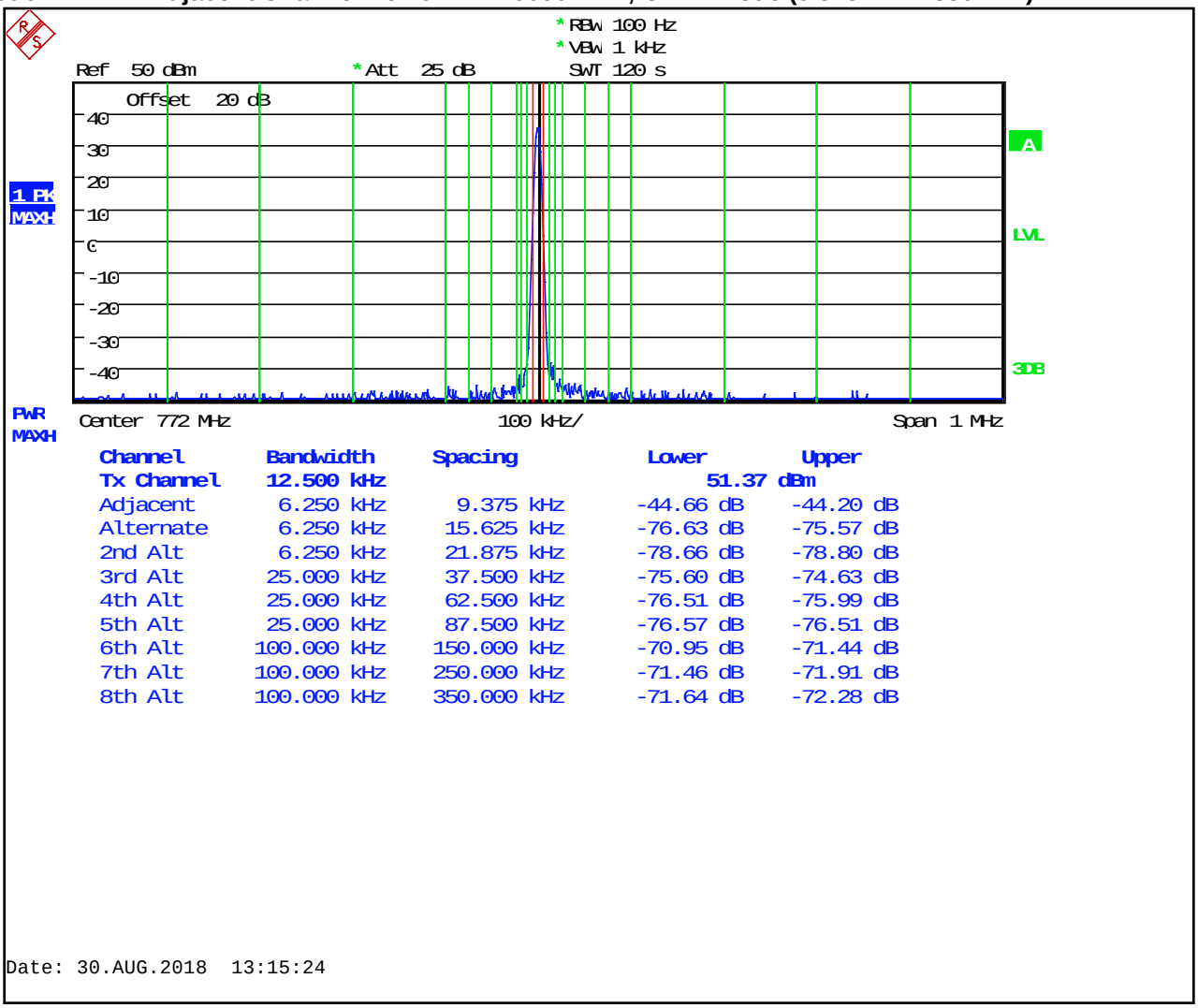


Table 6-14: Adjacent Channel Power - 772.0000 MHz; C4FM Mode (>400 kHz - RX Band)

Offset from Center Frequency (kHz)	Measurement BW (kHz)	Max ACP (dBc)	Measured ACP (dBc)
>400 to 12 MHz	30(s)	-75	-79.8
12 MHz to receive band	30(s)	-75	-97.6
In receive band	30(s)	-100	-115.0

Plot 6-15: Adjacent Channel Power - 775.9875 MHz; C4FM Mode (9.375 kHz - 350 kHz)

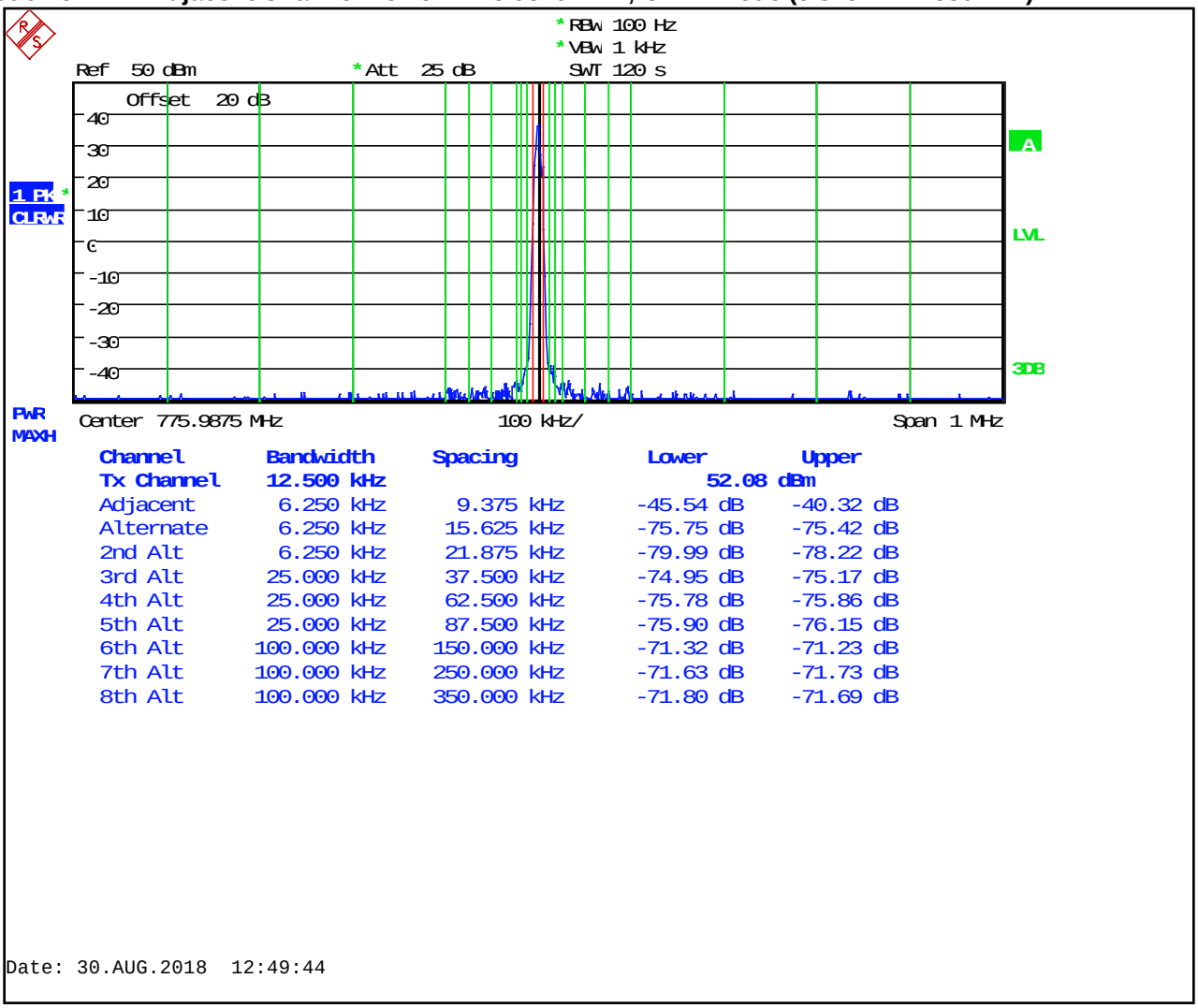


Table 6-15: Adjacent Channel Power - 775.9875 MHz; C4FM Mode (>400 kHz - RX Band)

Offset from Center Frequency (kHz)	Measurement BW (kHz)	Max ACP (dBc)	Measured ACP (dBc)
>400 to 12 MHz	30(s)	-75	-84.3
12 MHz to receive band	30(s)	-75	-101.2
In receive band	30(s)	-100	-112.2

Plot 6-16: Adjacent Channel Power – 798.0125 MHz; C4FM Mode (9.375 kHz - 350 kHz)

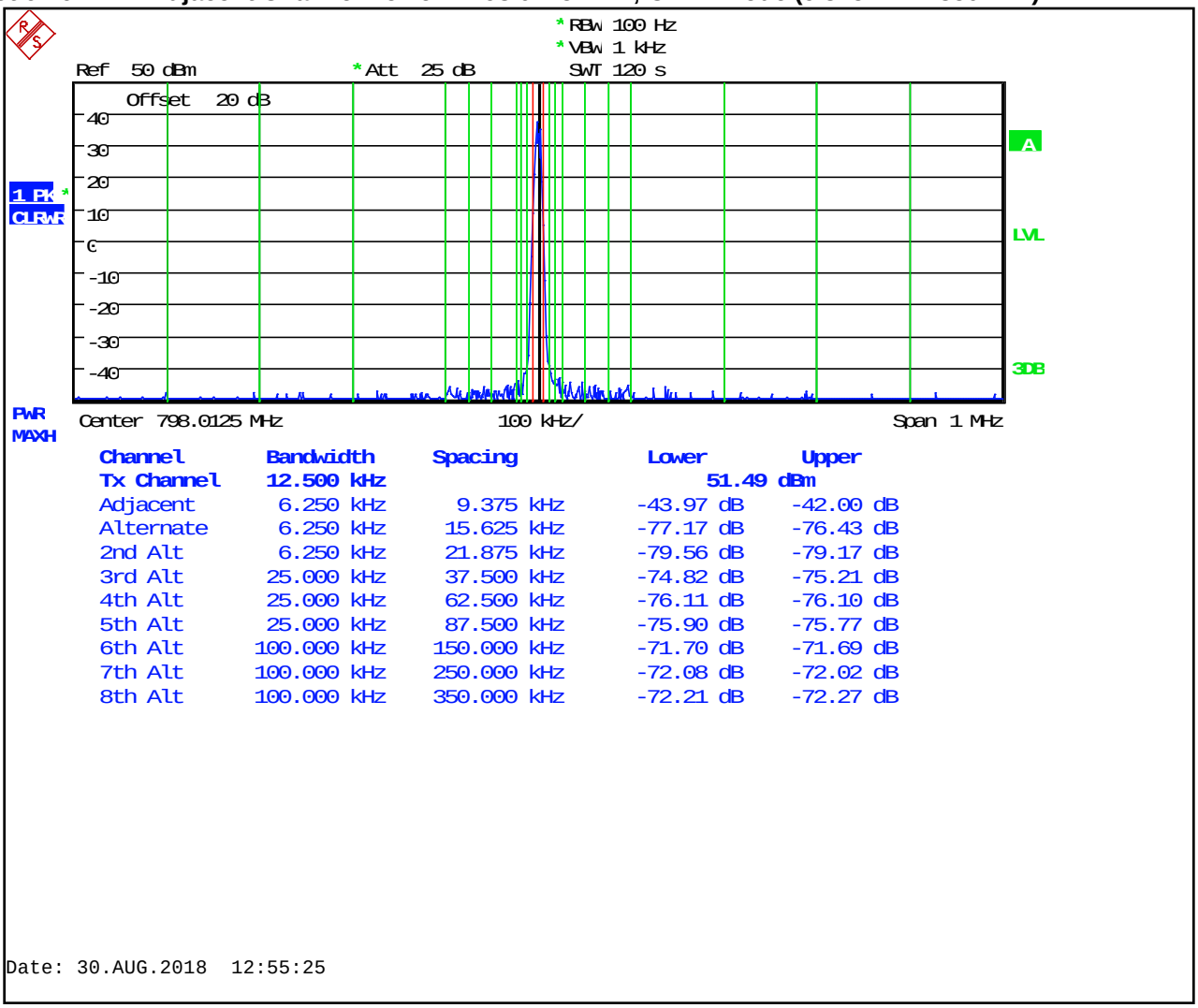
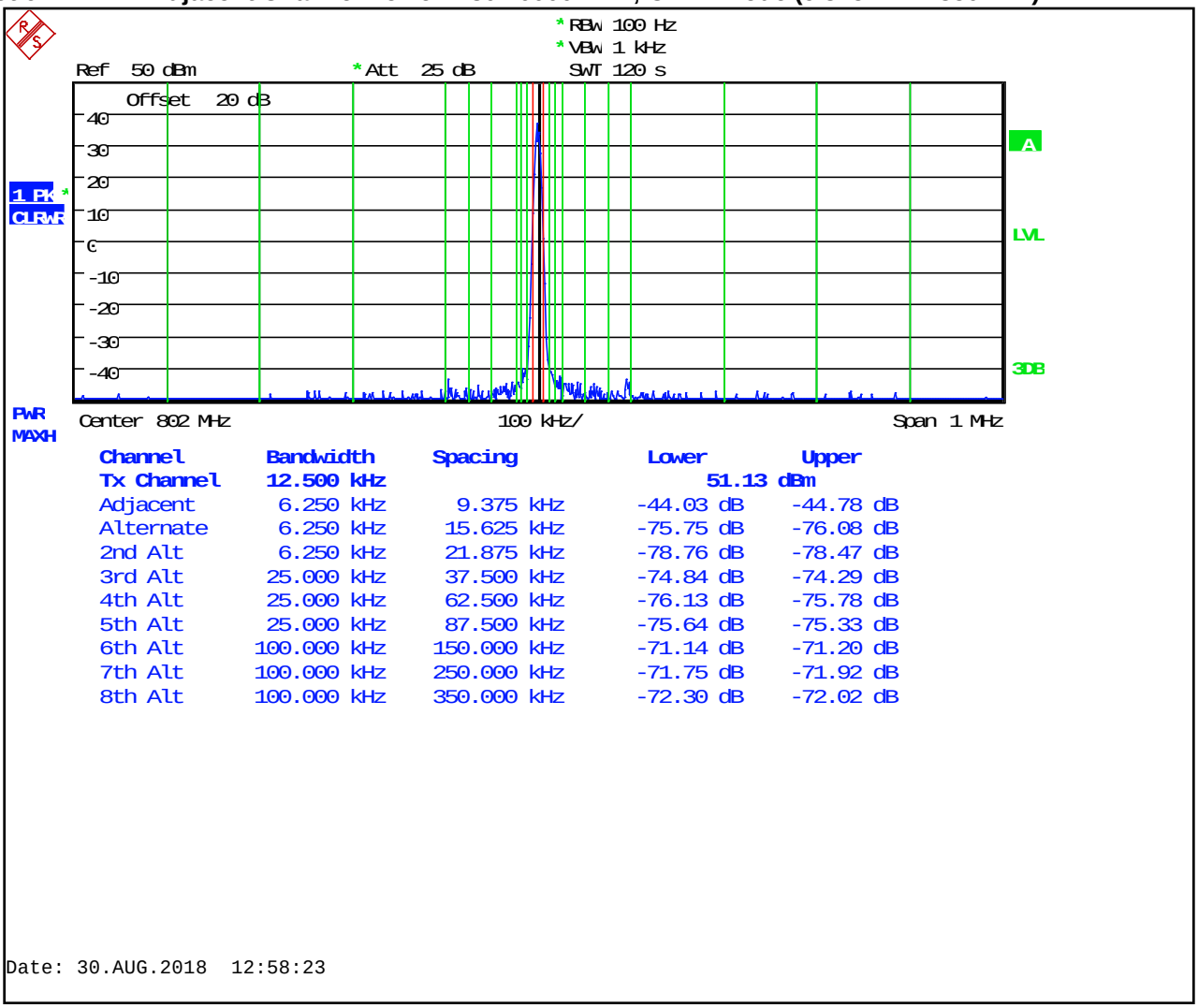


Table 6-16: Adjacent Channel Power – 798.0125 MHz; C4FM Mode (>400 kHz - RX Band)

Offset from Center Frequency (kHz)	Measurement BW (kHz)	Max ACP (dBc)	Measured ACP (dBc)
>400 to 12 MHz	30(s)	-75	-84.4
12 MHz to receive band	30(s)	-75	-101.4
In receive band	30(s)	-100	-100.7

Plot 6-17: Adjacent Channel Power – 802.0000 MHz; C4FM Mode (9.375 kHz - 350 kHz)

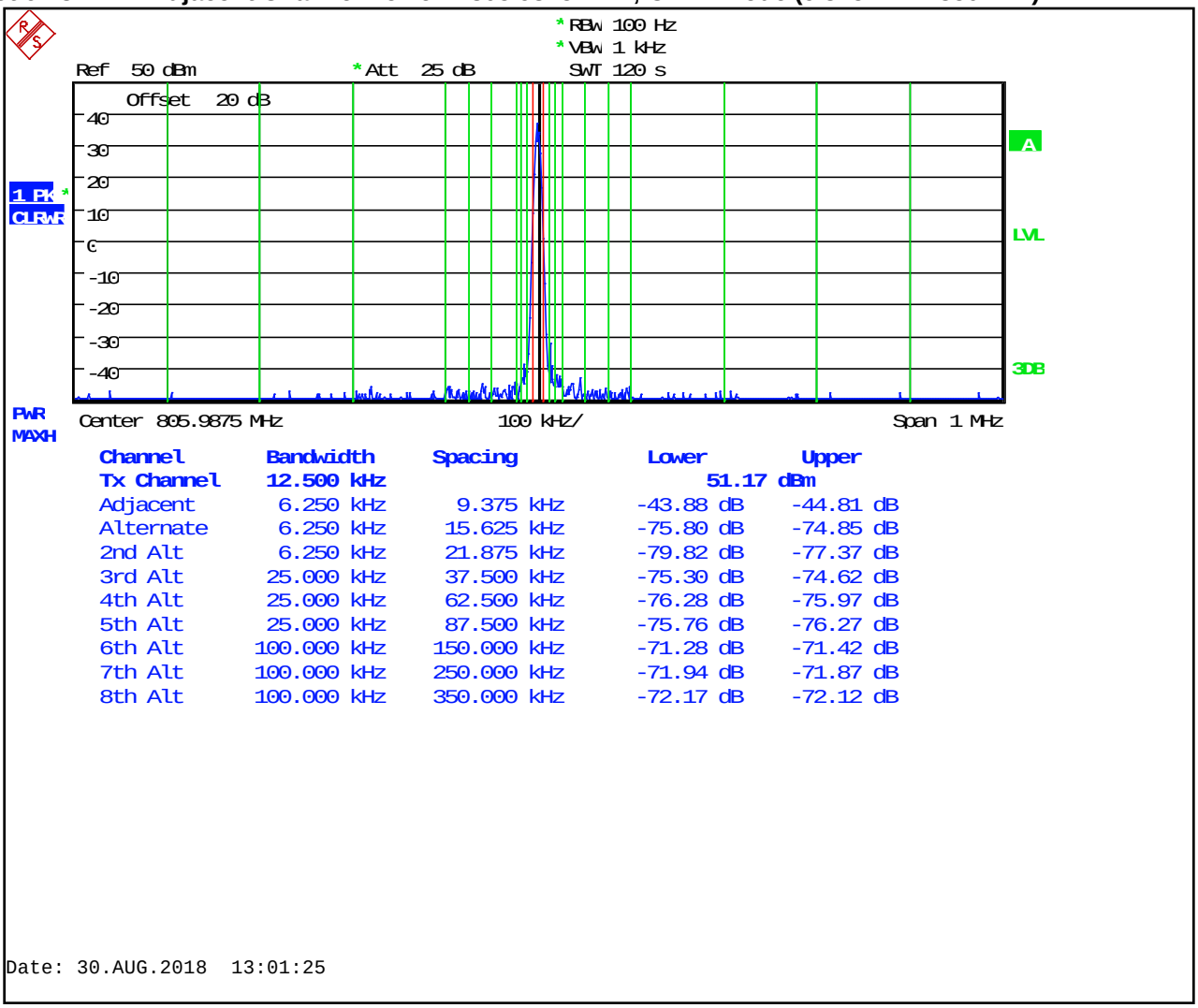


Channel	Bandwidth	Spacing	Lower	Upper
Tx Channel	12.500 kHz		51.13 dBm	
Adjacent	6.250 kHz	9.375 kHz	-44.03 dB	-44.78 dB
Alternate	6.250 kHz	15.625 kHz	-75.75 dB	-76.08 dB
2nd Alt	6.250 kHz	21.875 kHz	-78.76 dB	-78.47 dB
3rd Alt	25.000 kHz	37.500 kHz	-74.84 dB	-74.29 dB
4th Alt	25.000 kHz	62.500 kHz	-76.13 dB	-75.78 dB
5th Alt	25.000 kHz	87.500 kHz	-75.64 dB	-75.33 dB
6th Alt	100.000 kHz	150.000 kHz	-71.14 dB	-71.20 dB
7th Alt	100.000 kHz	250.000 kHz	-71.75 dB	-71.92 dB
8th Alt	100.000 kHz	350.000 kHz	-72.30 dB	-72.02 dB

Table 6-17: Adjacent Channel Power – 802.0000 MHz; C4FM Mode (>400 kHz - RX Band)

Offset from Center Frequency (kHz)	Measurement BW (kHz)	Max ACP (dBc)	Measured ACP (dBc)
>400 to 12 MHz	30(s)	-75	-84.8
12 MHz to receive band	30(s)	-75	-100.7
In receive band	30(s)	-100	-107.7

Plot 6-18: Adjacent Channel Power – 805.9875 MHz; C4FM Mode (9.375 kHz - 350 kHz)



Channel	Bandwidth	Spacing	Lower	Upper
Tx Channel	12.500 kHz		51.17 dBm	
Adjacent	6.250 kHz	9.375 kHz	-43.88 dB	-44.81 dB
Alternate	6.250 kHz	15.625 kHz	-75.80 dB	-74.85 dB
2nd Alt	6.250 kHz	21.875 kHz	-79.82 dB	-77.37 dB
3rd Alt	25.000 kHz	37.500 kHz	-75.30 dB	-74.62 dB
4th Alt	25.000 kHz	62.500 kHz	-76.28 dB	-75.97 dB
5th Alt	25.000 kHz	87.500 kHz	-75.76 dB	-76.27 dB
6th Alt	100.000 kHz	150.000 kHz	-71.28 dB	-71.42 dB
7th Alt	100.000 kHz	250.000 kHz	-71.94 dB	-71.87 dB
8th Alt	100.000 kHz	350.000 kHz	-72.17 dB	-72.12 dB

Table 6-18: Adjacent Channel Power – 805.9875 MHz; C4FM Mode (>400 kHz - RX Band)

Offset from Center Frequency (kHz)	Measurement BW (kHz)	Max ACP (dBc)	Measured ACP (dBc)
>400 to 12 MHz	30(s)	-75	-84.8
12 MHz to receive band	30(s)	-75	-99.9
In receive band	30(s)	-100	-110.6

Plot 6-19: Adjacent Channel Power - 768.0125 MHz; H-CPM (TDMA) Mode (9.375 kHz - 350 kHz)

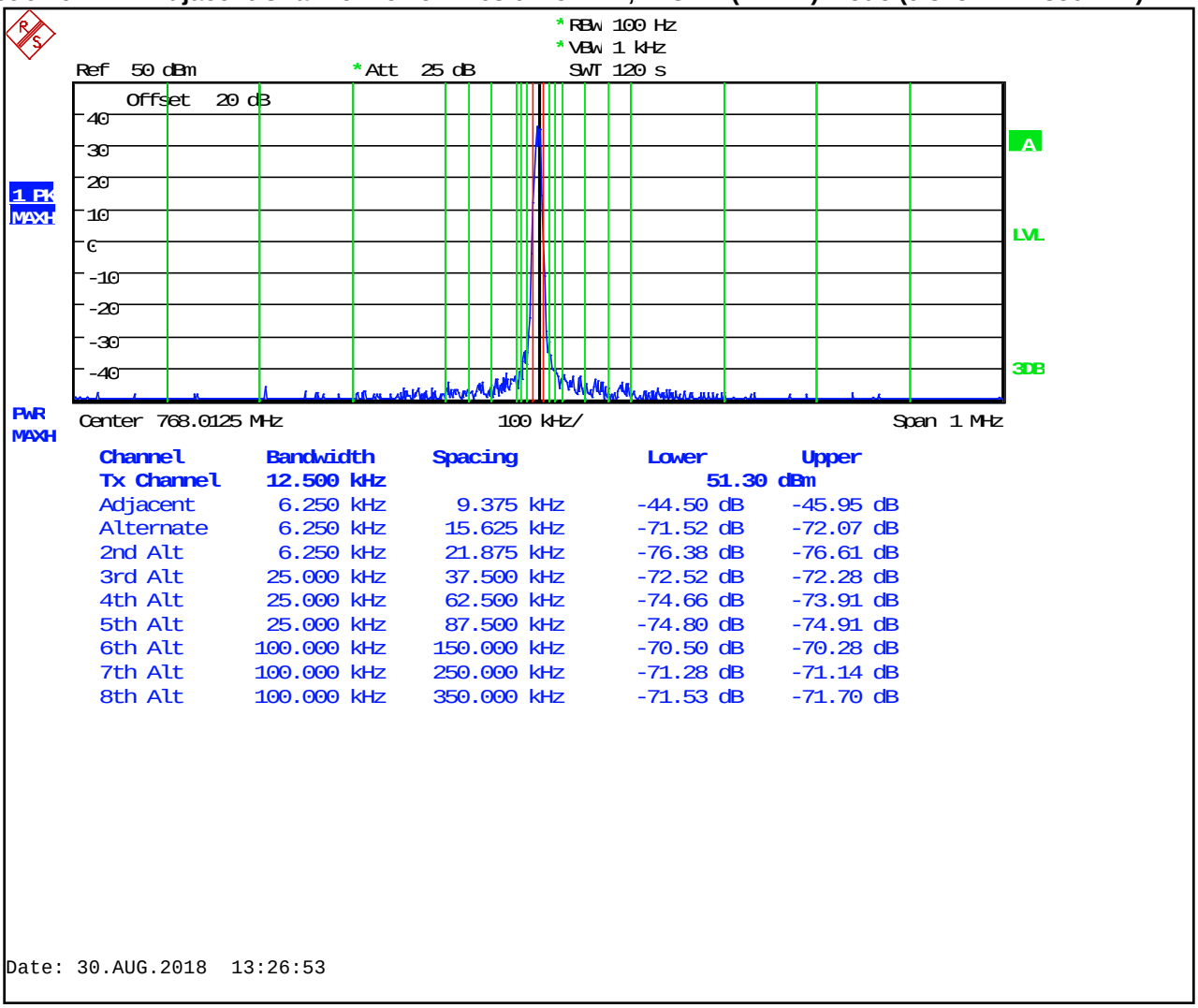


Table 6-19: Adjacent Channel Power - 768.0125 MHz; H-CPM (TDMA) Mode (>400 kHz - RX Band)

Offset from Center Frequency (kHz)	Measurement BW (kHz)	Max ACP (dBc)	Measured ACP (dBc)
>400 to 12 MHz	30(s)	-75	-82.9
12 MHz to receive band	30(s)	-75	-97.5
In receive band	30(s)	-100	-115.2

Plot 6-20: Adjacent Channel Power - 772.0000 MHz; H-CPM (TDMA) Mode (9.375 kHz - 350 kHz)

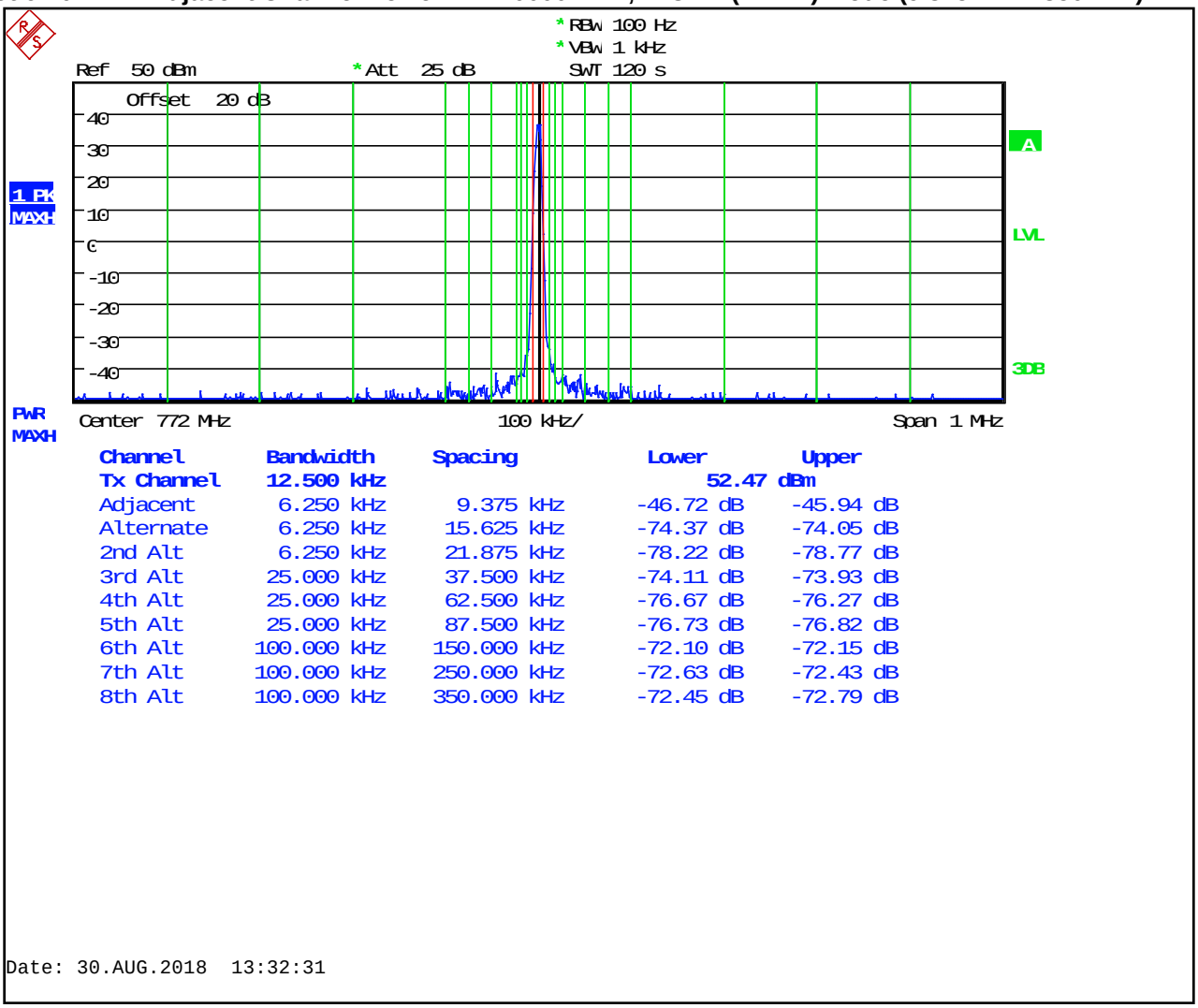


Table 6-20: Adjacent Channel Power - 772.0000 MHz; H-CPM (TDMA) Mode (>400 kHz - RX Band)

Offset from Center Frequency (kHz)	Measurement BW (kHz)	Max ACP (dBc)	Measured ACP (dBc)
>400 to 12 MHz	30(s)	-75	-83.5
12 MHz to receive band	30(s)	-75	-102.2
In receive band	30(s)	-100	-114.5

Plot 6-21: Adjacent Channel Power - 775.9875 MHz; H-CPM (TDMA) Mode (9.375 kHz - 350 kHz)

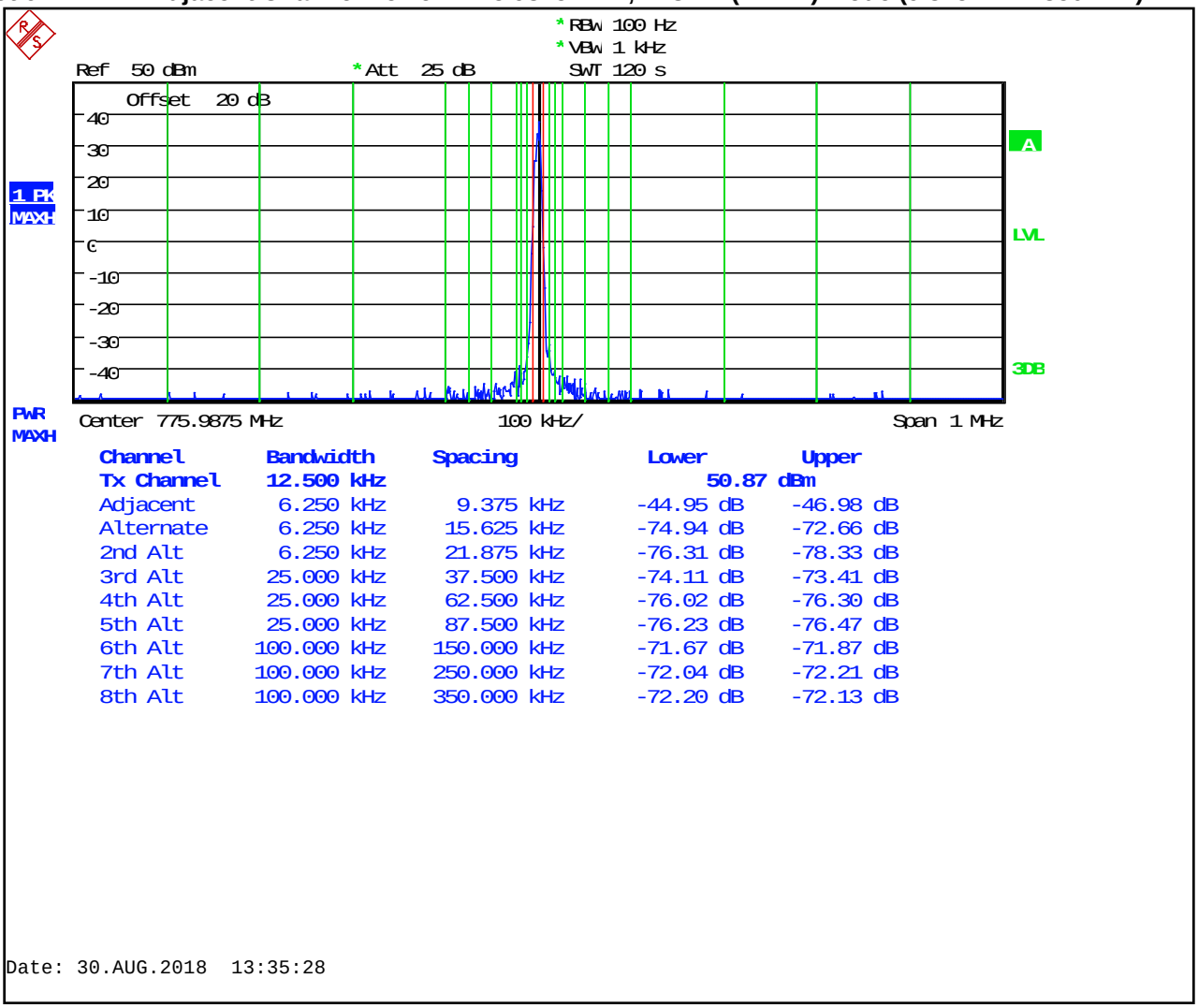


Table 6-21: Adjacent Channel Power - 775.9875 MHz; H-CPM (TDMA) Mode (>400 kHz - RX Band)

Offset from Center Frequency (kHz)	Measurement BW (kHz)	Max ACP (dBc)	Measured ACP (dBc)
>400 to 12 MHz	30(s)	-75	-84.5
12 MHz to receive band	30(s)	-75	-102.1
In receive band	30(s)	-100	-112.2

Plot 6-22: Adjacent Channel Power – 798.0125 MHz; H-CPM (TDMA) Mode; (9.375 kHz - 350 kHz)

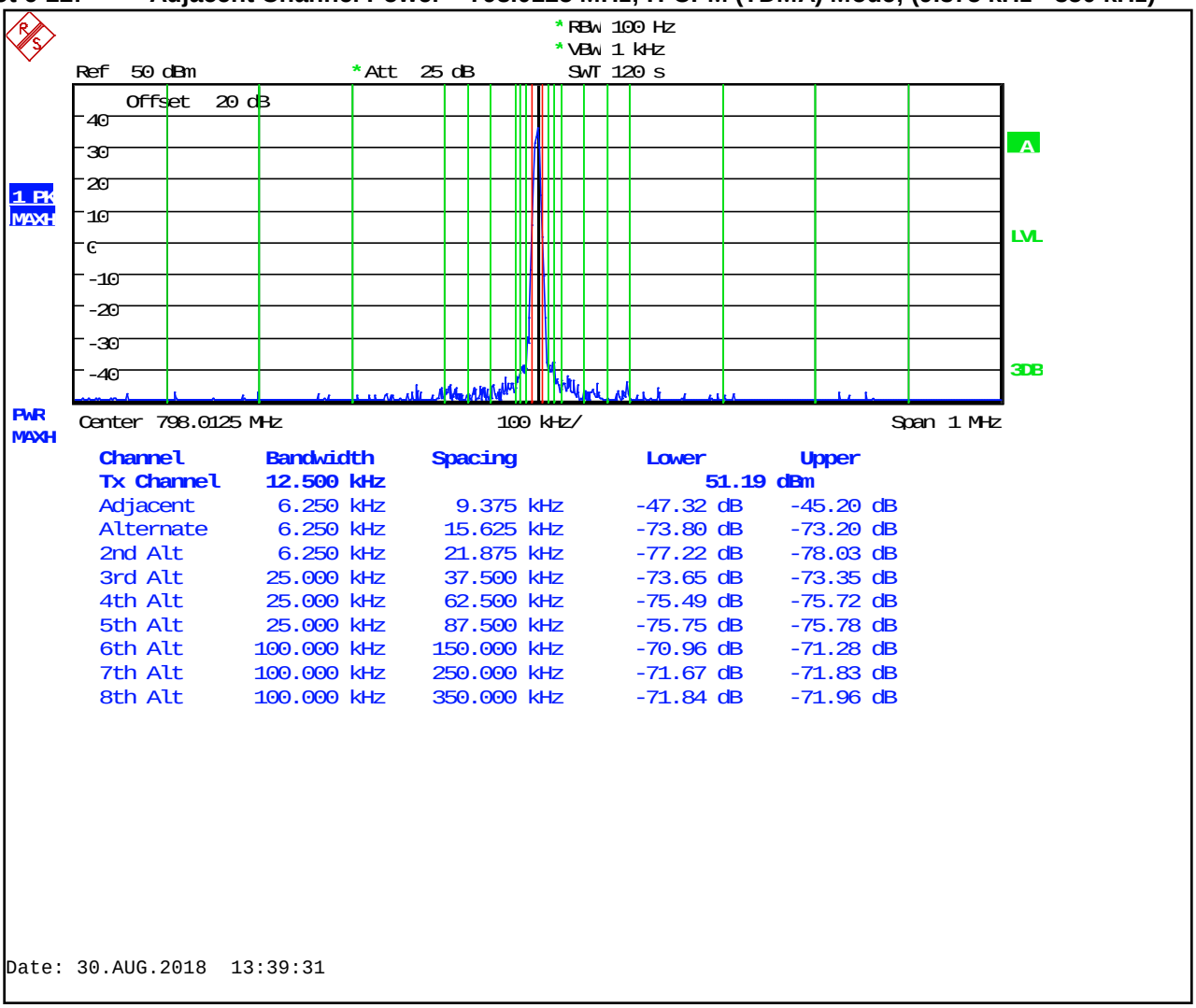


Table 6-22: Adjacent Channel Power – 798.0125 MHz; H-CPM (TDMA) Mode (>400 kHz - RX Band)

Offset from Center Frequency (kHz)	Measurement BW (kHz)	Max ACP (dBc)	Measured ACP (dBc)
>400 to 12 MHz	30(s)	-75	-87.7
12 MHz to receive band	30(s)	-75	-102.9
In receive band	30(s)	-100	-102.1

Plot 6-23: Adjacent Channel Power – 802.0000 MHz; H-CPM (TDMA) Mode; (9.375 kHz - 350 kHz)

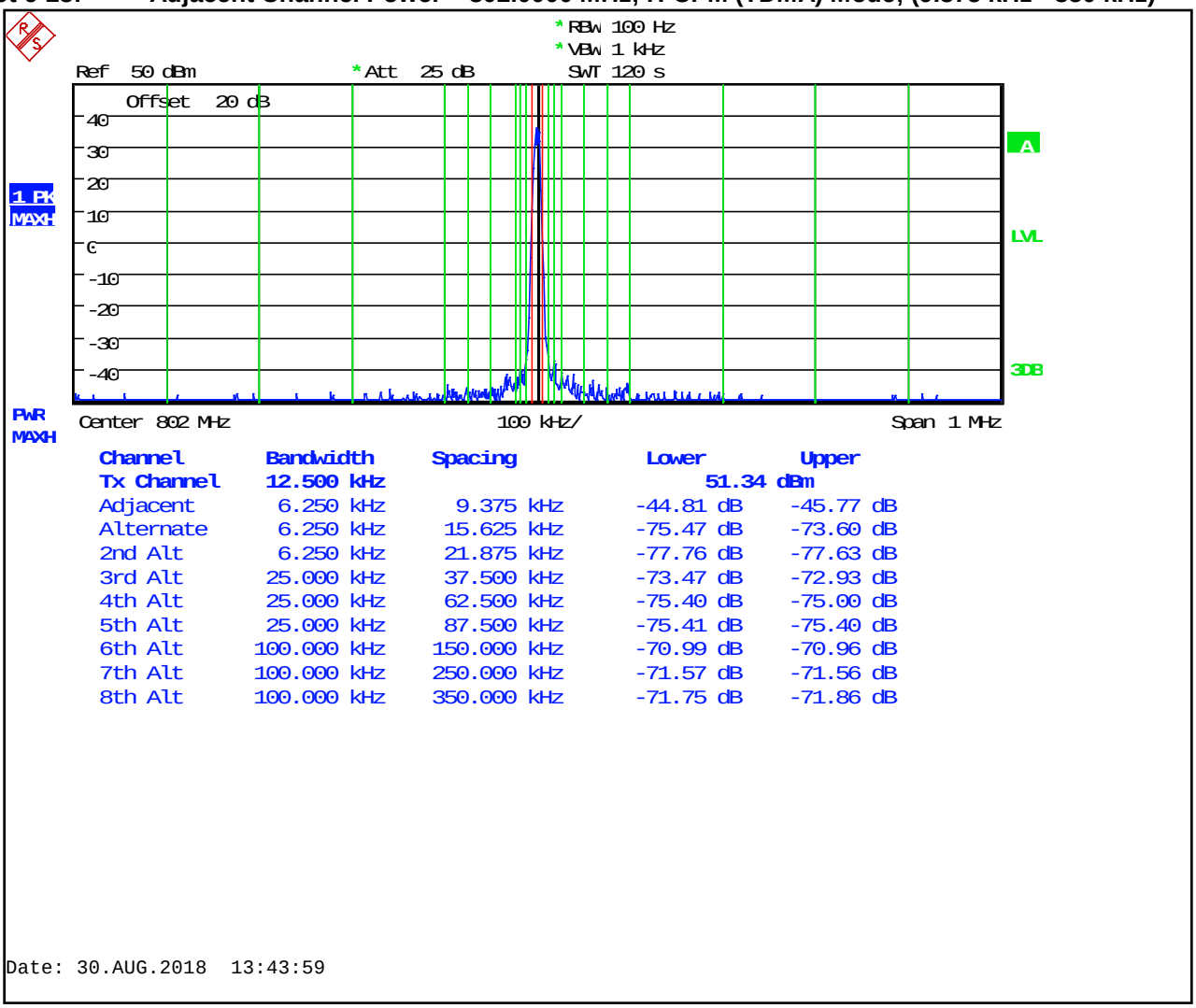


Table 6-23: Adjacent Channel Power – 802.0000 MHz; H-CPM (TDMA) Mode (>400 kHz - RX Band)

Offset from Center Frequency (kHz)	Measurement BW (kHz)	Max ACP (dBc)	Measured ACP (dBc)
>400 to 12 MHz	30(s)	-75	-87.3
12 MHz to receive band	30(s)	-75	-101.9
In receive band	30(s)	-100	-113.5

Plot 6-24: Adjacent Channel Power – 805.9875 MHz; H-CPM (TDMA) Mode; (9.375 kHz - 350 kHz)

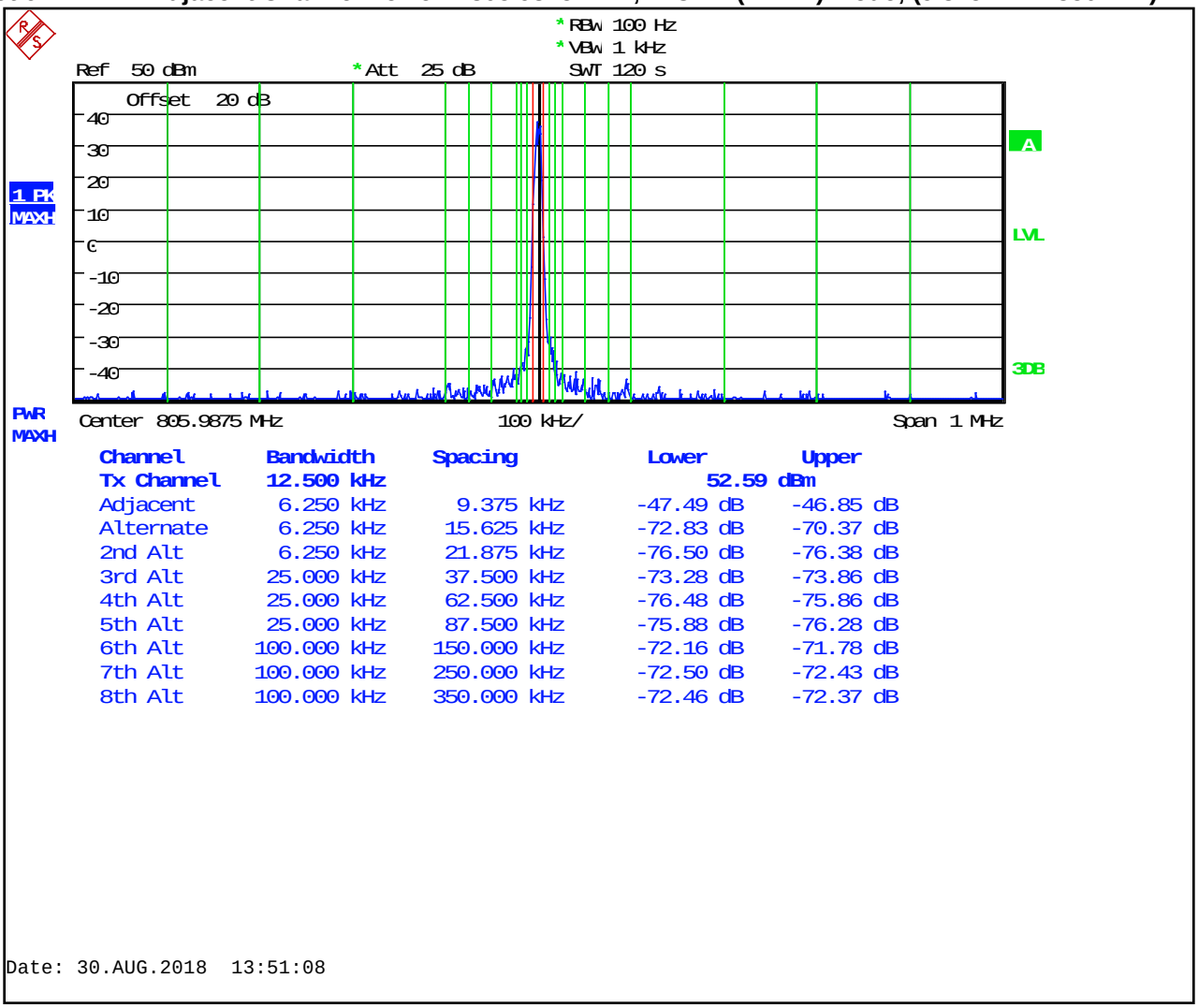


Table 6-24: Adjacent Channel Power – 805.9875 MHz; H-CPM (TDMA) Mode (>400 kHz - RX Band)

Offset from Center Frequency (kHz)	Measurement BW (kHz)	Max ACP (dBc)	Measured ACP (dBc)
>400 to 12 MHz	30(s)	-75	-85.4
12 MHz to receive band	30(s)	-75	-100.8
In receive band	30(s)	-100	-110.1

Plot 6-25: Adjacent Channel Power - 769.0125 MHz; WB HVD SMR Mode (9.375 kHz - 350 kHz)

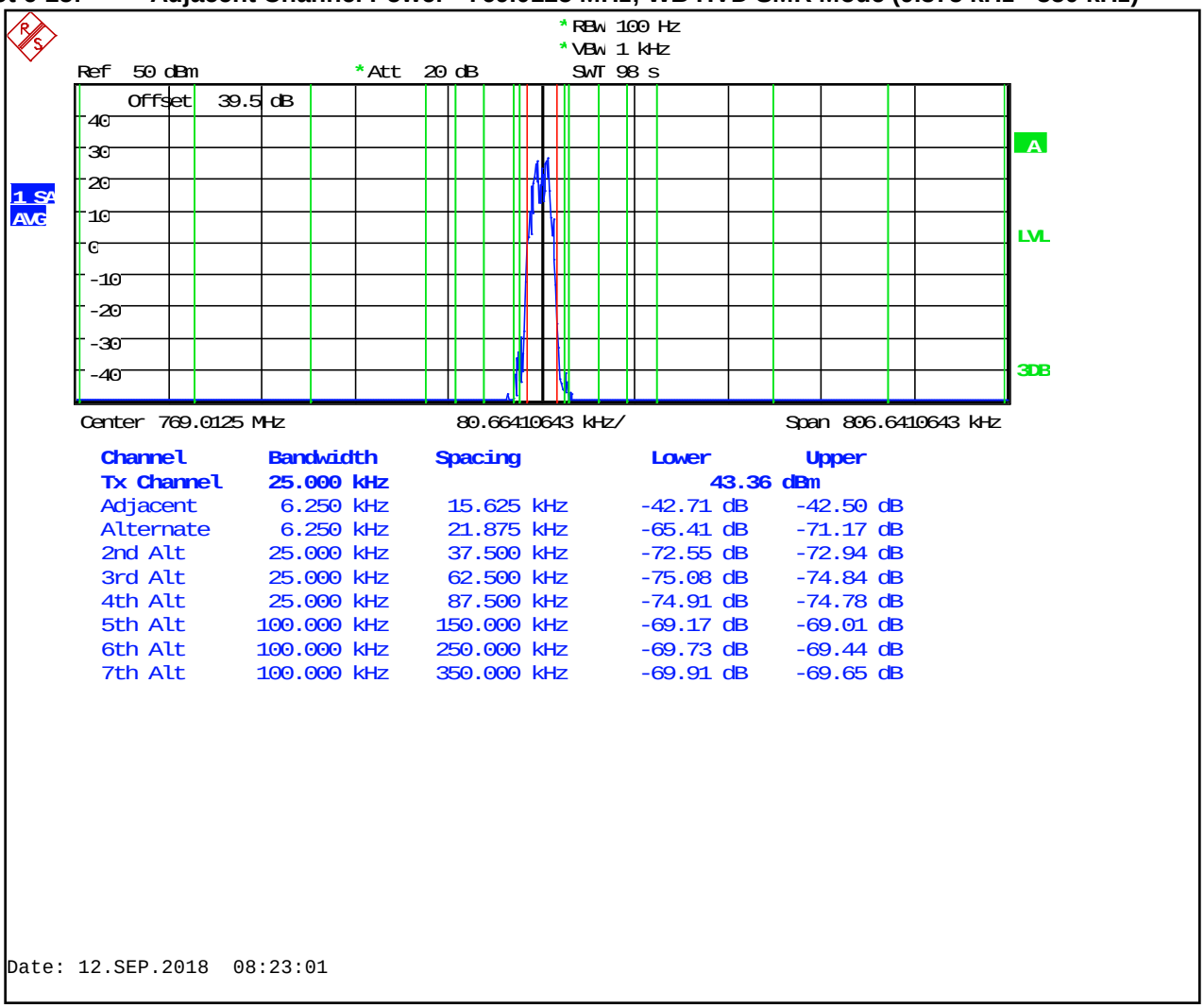


Table 6-25: Adjacent Channel Power - 769.0125 MHz; WB HVD SMR Mode (>400 kHz - RX Band)

Offset from Center Frequency (kHz)	Measurement BW (kHz)	Max ACP (dBc)	Measured ACP (dBc)
>400 to 12 MHz	30(s)	-75	-95.5
12 MHz to receive band	30(s)	-75	-95.6
In receive band	30(s)	-100	-116.1

Plot 6-26: Adjacent Channel Power - 772.0000 MHz; WB HVD SMR Mode (9.375 kHz - 350 kHz)

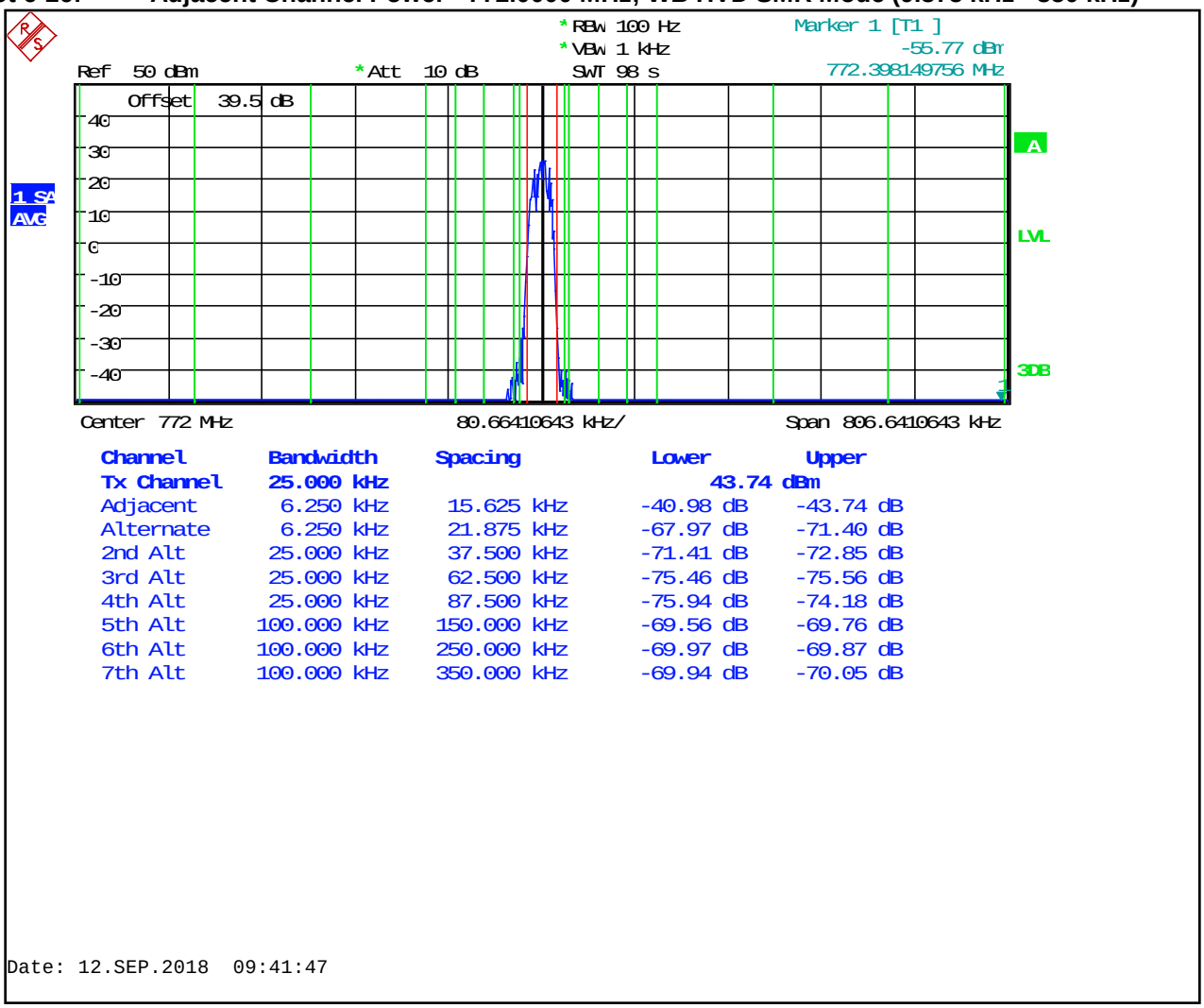


Table 6-26: Adjacent Channel Power - 772.0000 MHz; WB HVD SMR Mode (>400 kHz - RX Band)

Offset from Center Frequency (kHz)	Measurement BW (kHz)	Max ACP (dBc)	Measured ACP (dBc)
>400 to 12 MHz	30(s)	-75	-102.5
12 MHz to receive band	30(s)	-75	-103.3
In receive band	30(s)	-100	-115.8

Plot 6-27: Adjacent Channel Power - 774.9875 MHz; WB HVD SMR Mode (9.375 kHz - 350 kHz)

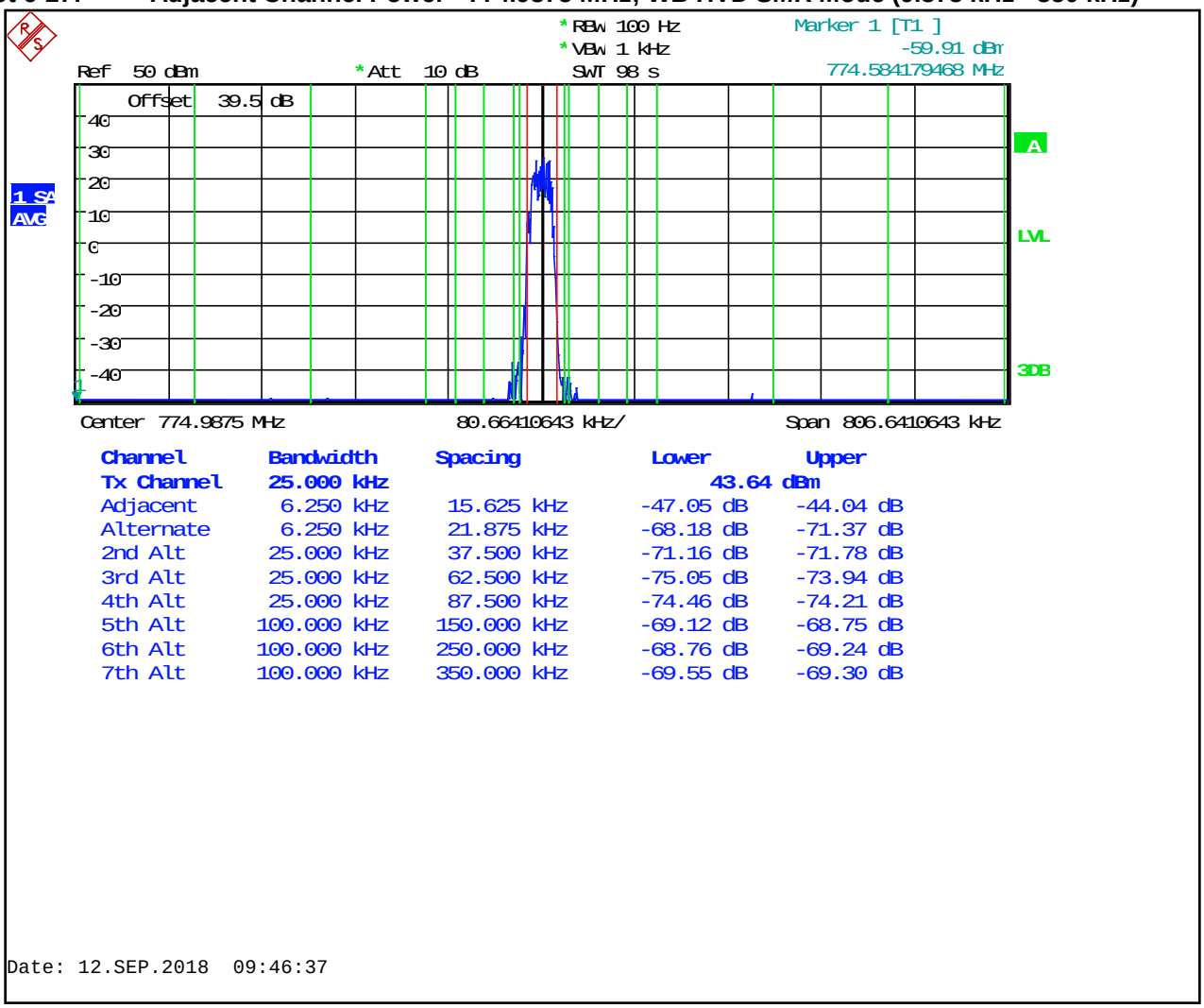
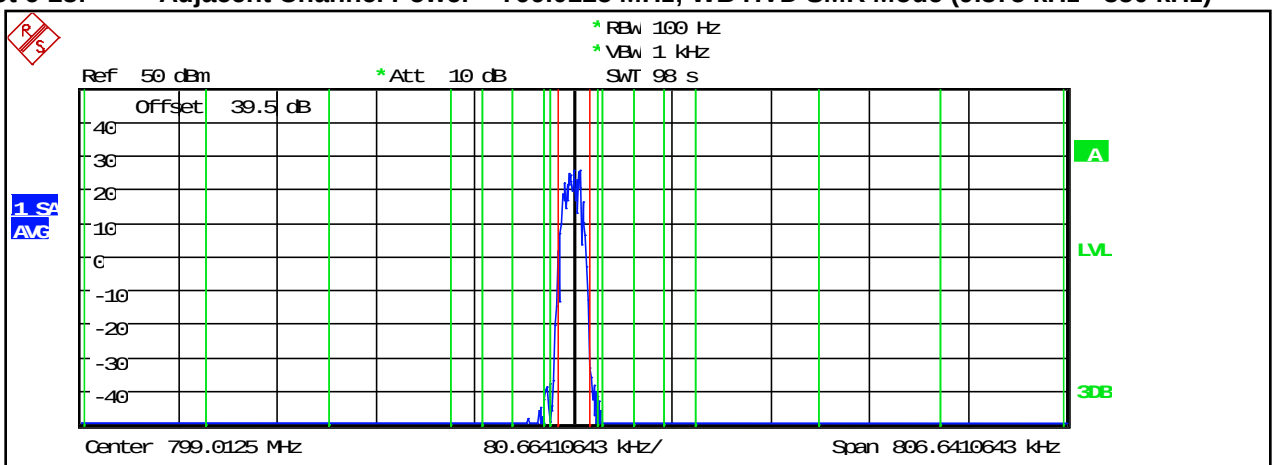


Table 6-27: Adjacent Channel Power - 774.9875 MHz; WB HVD SMR Mode (>400 kHz - RX Band)

Offset from Center Frequency (kHz)	Measurement BW (kHz)	Max ACP (dBc)	Measured ACP (dBc)
>400 to 12 MHz	30(s)	-75	-103.4
12 MHz to receive band	30(s)	-75	-103.8
In receive band	30(s)	-100	-115.9

Plot 6-28: Adjacent Channel Power – 799.0125 MHz; WB HVD SMR Mode (9.375 kHz - 350 kHz)



Channel	Bandwidth	Spacing	Lower	Upper
Tx Channel	25.000 kHz		43.69 dBm	
Adjacent	6.250 kHz	15.625 kHz	-42.97 dB	-41.17 dB
Alternate	6.250 kHz	21.875 kHz	-67.87 dB	-72.98 dB
2nd Alt	25.000 kHz	37.500 kHz	-71.80 dB	-74.07 dB
3rd Alt	25.000 kHz	62.500 kHz	-75.33 dB	-75.80 dB
4th Alt	25.000 kHz	87.500 kHz	-75.58 dB	-75.58 dB
5th Alt	100.000 kHz	150.000 kHz	-69.70 dB	-69.30 dB
6th Alt	100.000 kHz	250.000 kHz	-69.80 dB	-69.40 dB
7th Alt	100.000 kHz	350.000 kHz	-69.71 dB	-69.68 dB

Date: 12.SEP.2018 09:58:31

Table 6-28: Adjacent Channel Power – 799.0125 MHz; WB HVD SMR Mode (>400 kHz - RX Band)

Offset from Center Frequency (kHz)	Measurement BW (kHz)	Max ACP (dBc)	Measured ACP (dBc)
>400 to 12 MHz	30(s)	-75	-102.0
12 MHz to receive band	30(s)	-75	-103.8
In receive band	30(s)	-100	-115.9

Plot 6-29: Adjacent Channel Power – 802.0000 MHz; WB HVD SMR Mode (9.375 kHz - 350 kHz)

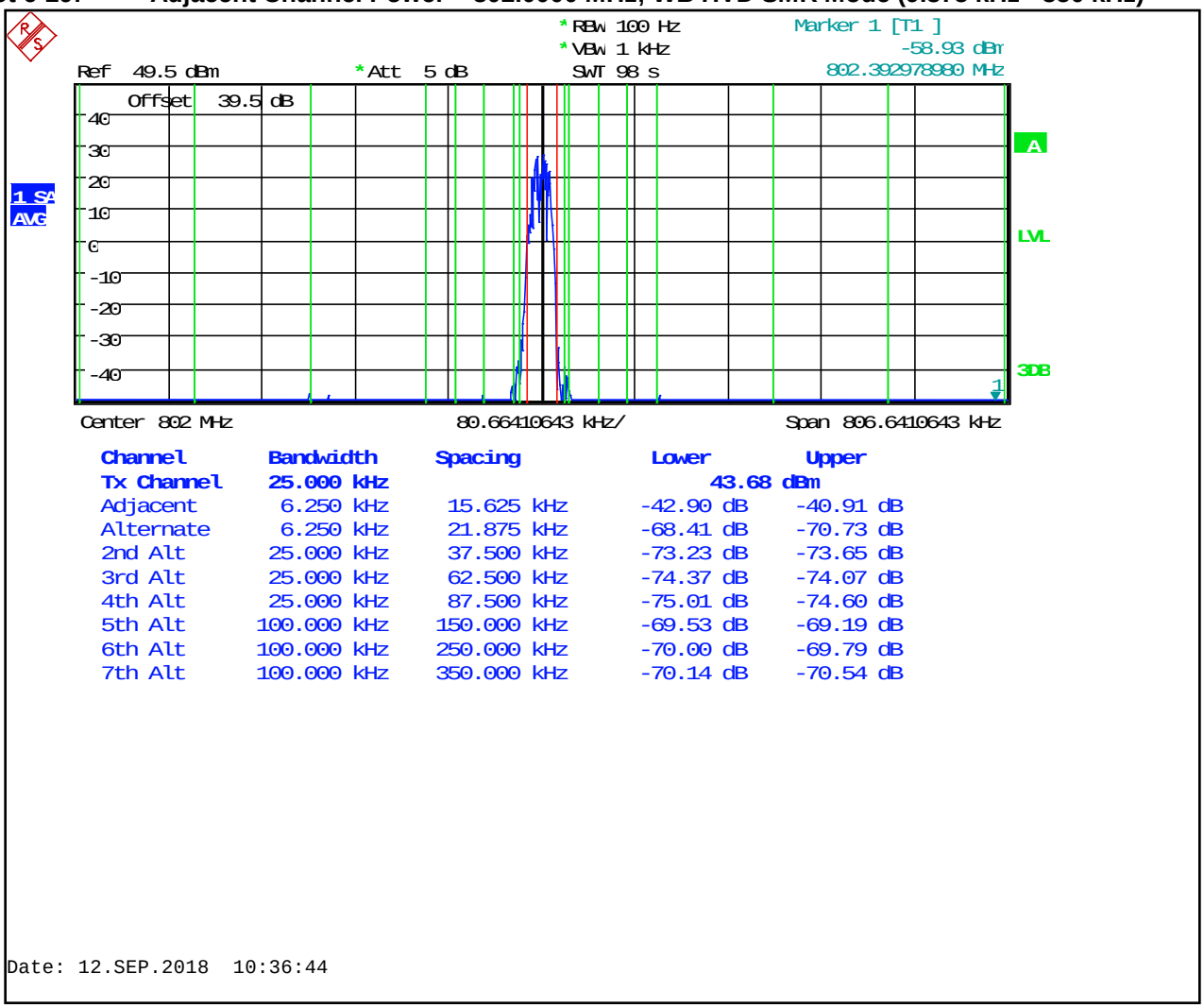
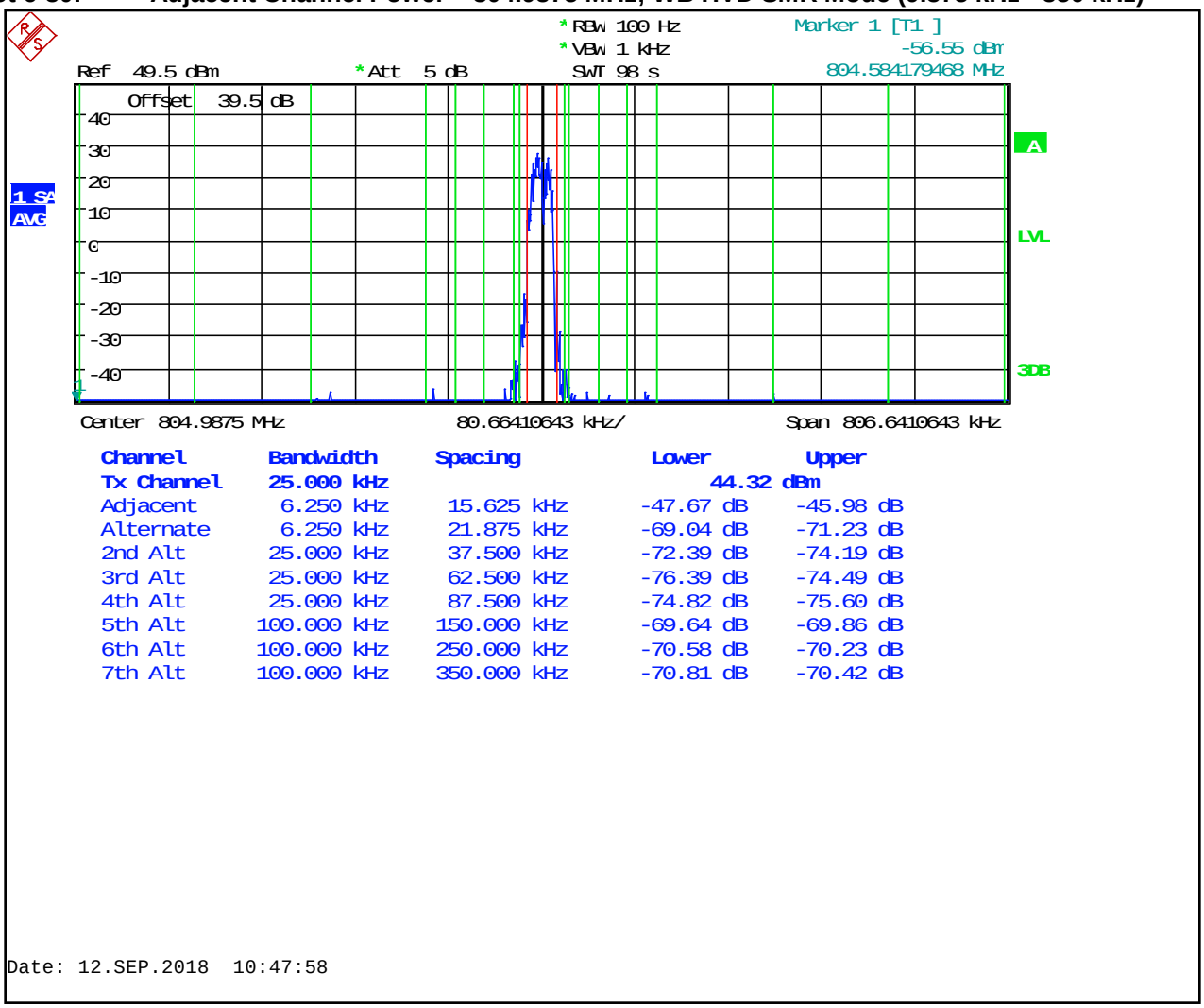


Table 6-29: Adjacent Channel Power – 802.0000 MHz; WB HVD SMR Mode (>400 kHz - RX Band)

Offset from Center Frequency (kHz)	Measurement BW (kHz)	Max ACP (dBc)	Measured ACP (dBc)
>400 to 12 MHz	30(s)	-75	-103.1
12 MHz to receive band	30(s)	-75	-103.6
In receive band	30(s)	-100	-116.0

Plot 6-30: Adjacent Channel Power – 804.9875 MHz; WB HVD SMR Mode (9.375 kHz - 350 kHz)



Channel	Bandwidth	Spacing	Lower	Upper
Tx Channel	25.000 kHz		44.32 dBm	
Adjacent	6.250 kHz	15.625 kHz	-47.67 dB	-45.98 dB
Alternate	6.250 kHz	21.875 kHz	-69.04 dB	-71.23 dB
2nd Alt	25.000 kHz	37.500 kHz	-72.39 dB	-74.19 dB
3rd Alt	25.000 kHz	62.500 kHz	-76.39 dB	-74.49 dB
4th Alt	25.000 kHz	87.500 kHz	-74.82 dB	-75.60 dB
5th Alt	100.000 kHz	150.000 kHz	-69.64 dB	-69.86 dB
6th Alt	100.000 kHz	250.000 kHz	-70.58 dB	-70.23 dB
7th Alt	100.000 kHz	350.000 kHz	-70.81 dB	-70.42 dB

Table 6-30: Adjacent Channel Power – 804.9875 MHz; WB HVD SMR Mode (>400 kHz - RX Band)

Offset from Center Frequency (kHz)	Measurement BW (kHz)	Max ACP (dBc)	Measured ACP (dBc)
>400 to 12 MHz	30(s)	-75	-102.4
12 MHz to receive band	30(s)	-75	-103.8
In receive band	30(s)	-100	-116.0

Measurement uncertainties shown for these tests are expanded uncertainties expressed at the 95% confidence level using a coverage factor K=2. Measurement uncertainty: ±0.5 dB

Results: Pass

Table 6-31: Test Equipment Used For Testing ACP Requirements

RTL Asset #	Manufacturer	Model	Part Type	Serial Number	Calibration Due Date
901581	Rohde & Schwarz	FSU	Spectrum Analyzer	1166.1660.50	4/26/21
901139	Weinschel Corporation	48-20-34	Attenuator DC-18 GHz 20 dB 100W	BK5859	4/23/19
900948	Weinschel Corporation	47-10-43	Attenuator DC-18 GHz 10 dB 50W	BH1487	8/7/19

Test Personnel:

Daniel Baltzell		August 29-September 12, 2018
EMC Test Engineer	Signature	Dates of Test

7 FCC Part 90.210 and Part 2.1053(a): Field Strength of Spurious Emissions; Part 90.543: Out of Band Emissions Limit; ISED RSS-119 5.8: Transmitter Unwanted Emissions

7.1 Test Procedure

ANSI C63.26 section 5.5

The device uses digital modulation modulated to its maximum extent using a pseudo-random data sequence.

The spurious emissions levels were measured, and the device under test was replaced by a substitution antenna connected to a signal generator. This signal generator level was then corrected by subtracting the cable loss from the substitution antenna to the signal generator, and the gain of the antenna (dBi) was added to achieve the EIRP level, then converted from the corrected signal generator level (dBm) to dBc, or dBW for 700 MHz band, and compared to the limit.

For emissions in the 1559-1610 band, Part 90.543(f) states: "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." All modes were investigated and no emissions were found within 20 dB below the limit, except for 33.0125, 40.0125, and 511.9875 MHz, and FCC Part 90.543(f) data, for which data is presented below.

The representative antenna used for the 90.543(f) testing was the AN-025137-007 (Antenna, Yagi, 700 MHz,10dB Gain). All other radiated spurious emissions testing was done with the highest gain antenna for a given frequency band.

7.2 Test Data

Table 7-1: Field Strength of Spurious Radiation – 33.0125 MHz

Conducted Power 50.4 dBm; 109.1 W; Limit=43+10 Log P=40.4 dBc

Frequency (MHz)	Spectrum Analyzer Level (dBuV)	Signal Generator Level (dBm)	Cable Loss to Transmit Antenna (dB)	Substitution Antenna Gain (dBi)	Corrected Signal Generator Level (dBc)	Margin (dB)
297.1125	72.9	-7.7	0.2	-0.7	58.9	-18.5

Table 7-2: Field Strength of Spurious Radiation – 40.0125 MHz

Conducted Power 50.5 dBm; 112.2 W; Limit=43+10 Log P=40.5 dBc

Frequency (MHz)	Spectrum Analyzer Level (dBuV)	Signal Generator Level (dBm)	Cable Loss to Transmit Antenna (dB)	Substitution Antenna Gain (dBi)	Corrected Signal Generator Level (dBc)	Margin (dB)
80.0250	82.0	-5.8	0.1	-0.4	56.8	-16.3

Table 7-3: Field Strength of Spurious Radiation – 511.9875 MHz

Conducted Power 47.5 dBm; 56.0 W; Limit=50+10 Log P=37.5 dBc

Frequency (MHz)	Spectrum Analyzer Level (dBuV)	Signal Generator Level (dBm)	Cable Loss to Transmit Antenna (dB)	Substitution Antenna Gain (dBi)	Corrected Signal Generator Level (dBc)	Margin (dB)
1023.9750	61.8	-12.3	0.3	6.6	53.5	-16.0

Table 7-4: Part 90.543(f): Out of Band Emissions Limit

Frequency (MHz)	Spectrum Analyzer Level (dBuV)	Signal Generator Level (dBm)	Cable Loss to Transmit Antenna (dB)	Substitution Antenna Gain (dBi)	Corrected Signal Generator Level (dBW)	Limit (dBW)	Margin (dB)
1586.0250	17.5	-57.4	0.4	8.9	-78.9	-70.0	-8.9
1588.0250	15.1	-59.8	0.4	8.9	-81.3	-70.0	-11.3
1596.0250	11.1	-63.8	0.4	8.9	-85.3	-70.0	-15.3
1598.0250	14.4	-60.6	0.4	8.9	-82.0	-70.0	-12.0
1602.0000	18.2	-56.8	0.4	8.9	-78.3	-70.0	-8.3
1609.9750	11.3	-63.7	0.4	8.9	-85.2	-70.0	-15.2

Measurement uncertainties shown for these tests are expanded uncertainties expressed at the 95% confidence level using a coverage factor K=2. Measurement uncertainty: ±4.6 dB

Results: Pass

Table 7-5: Test Equipment Used For Testing Field Strength of Spurious Radiation

RTL Asset #	Manufacturer	Model	Part Type	Serial Number	Calibration Due Date
900878	Rhein Tech Laboratories	AM3-1197-0005	3 meter antenna mast, polarizing	OATS1	N/A
901729	Insulated Wire Inc.	KPS-1503-3150-KPR	SMK RF Cables 20'	NA	8/21/19
901128	Par Electronics	806-902 (25W)	UHF Notch Filter	N/A	8/10/20
901727	Insulated Wire Inc.	KPS-1503-360-KPR	SMK RF Cables 36"	NA	8/20/19
901242	Rhein Tech Laboratories	WRT-000-0003	Wood rotating table	N/A	N/A
900791	Chase	CBL6111B	Bilog antenna (30 MHz – 2000 MHz)	N/A	10/4/20
900321	EMCO	3161-03	Horn Antenna (4.0-8.2 GHz)	9508-1020	5/17/21
900323	EMCO	3160-07	Horn Antenna (8.2-12.4 GHz)	9605-1054	5/17/21
900772	EMCO	3161-02	Horn Antenna (2-4 GHz)	9804-1044	5/17/21
901581	Rohde & Schwarz	FSU	Spectrum Analyzer	1166.1660.50	4/26/21
901582	Rohde & Schwarz	1167.0000.02	Signal Generator	101903	4/24/21

Test Personnel:

Daniel Baltzell		August 10-16, 2019
Test Engineer	Signature	Dates of Tests