Public Safety Information

Agency: Massachusetts State Police

Contact: Gary Gutowski
Title: Technical Support Manager

Street Adress: 470 Worcester Road

City Framingham
County Middlesex
State MA
Zip 01702

Description of Interferfence: STATE TROOPERS report 806 Band Trunked Communications get "Wiped Out" within 1/8 mile of certain Cellular Towers / Installations. Mobiles + Portables miss receive traffic and get "Out of Range" Tone when they attempt to Transmit.

Location
Description: NEW ENGLAND AQUARIUM
Latitude: N 42 21 33
Longitude: W 71 02 57

Technical Information:

Modulation Type: 16K0F3E ALT DATA / VOICE

Description Of System: 20 CHANNEL , NINE SITE ANALOG SIMULCAST TRUNKED SYSTEM

	Frequencies	Chan Type [a]	Level of Interference [b]	Radius Of Interference (mi.)	Desired Signal Strength (dBm) [c]	Noise Floor w/ Interferer (dBm)	Noise Floor w/o Interferer (dBm)	Amount of Attenuation needed for 12 dB SINAD or 5% BER (dB) [d/e]
1	860.9875	C	4	1/8				
2	860.9625	C	4	1/8				
3	860.7375	C	4	1/8				
4	860.7125	C	4	1/8				
5	859.7125	V	4	1/8				
6	858.9875	V	4	1/8				
7	857.9875	V	4	1/8				
8	859.7375	V	4	1/8				
9	859.9875	V	4	1/8				
10	858.9625	V	4	1/8				

a Channel Type: C-control V-voice D-Data
b Interference Level: 0-None 1-Rare 2-Occasional 3-Frequent 4-Constant
c Desired Signal Strength: Adjusted for level at receiver
d TIA 603 Method- analog
e IS102.CAAA Method - Digital
f Radio Type: P-Portable M-Mobile D-Data Modem

Specifications

	Radio	Antenna Type	Model #	Type [f]	Brand	IM Spec.	Sensitivity Spec	Selectivity Spec	Interference Level [b]	Radius Of Interference (mi.)	Amount of Attenuation needed for 12 dB SINAD of 5% BER (dB) [d/e]
1	ANALOG SPECTRA	3 db	D04UJH9PW7AN	M-ANALOG MODE	MOTOROLA	-80 dB	.30 uV 20 dB quieting	-80 dB	4	1/8	
2	ASTRO SPECTRA	3 db	D04UJH9PW7AN	M-DIGITAL MODE	MOTOROLA	-80 dB	.40 uV 20 dB quieting	-80 dB	4	1/8	
3	MCS-2000 MOBILE	3 db	M01UJM6PW6_N	M	MOTOROLA	-80 dB	.30 uV 20 dB quieting	-80 dB	4	1/8	
4	MTS-2000 PORTABLE	0 db	H01UCD6PW1_N	P	MOTOROLA	-72 dB	.41 uV 20 dB quieting	-72 dB	4	1/8	
5	XTS-3000 PORTABLE	0 db	H09UCF9PW7_N	P-ANALOG MODE	MOTOROLA	-74 dB	.40 uV 20 dB quieting	-75 dB	4	1/8	
6	XTS-3000 PORTABLE	0 db	H09UCF9PW7_N	P-DIGITAL MODE	MOTOROLA	-74 dB	.40 uV 20 dB quieting	-75 dB	4	1/8	

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Location
Description: SHERATON WAKEFIELD
Latitude: N 42 30 47
Longitude: W 71 02 15

Technical Information: NOTE: Iden Modulation on Channel 25 Khz above Control Channel 1 (860.9875)

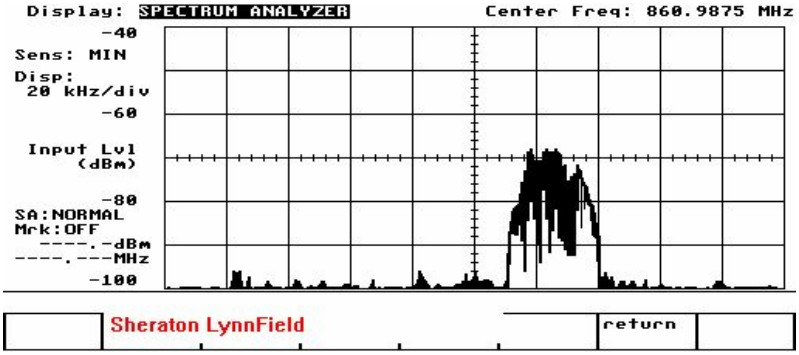
Modulation Type: 16K0F3E ALT DATA / VOICE

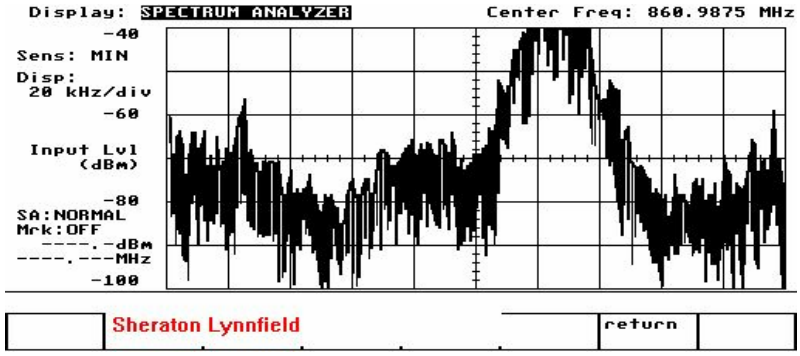
Description Of System: 20 CHANNEL , NINE SITE ANALOG SIMULCAST TRUNKED SYSTEM

	Frequencies	Chan Type [a]	Level of Interference [b]	Radius Of Interference (mi.)	Desired Signal Strength (dBm) [c]	Noise Floor w/ Interferer (dBm)	Noise Floor w/o Interferer (dBm)	Amount of Attenuation needed for 12 dB SINAD or 5% BER (dB) [d/e]
1	860.9875	C	4	1/8				
2	860.9625	C	4	1/8				
3	860.7375	C	4	1/8				
4	860.7125	C	4	1/8				
5	859.7125	V	4	1/8				
6	858.9875	V	4	1/8				
7	857.9875	V	4	1/8				
8	859.7375	V	4	1/8				
9	859.9875	V	4	1/8				
10	858.9625	V	4	1/8				

a Channel Type: C-control V-voice D-Data
b Interference Level: 0-None 1-Rare 2-Occasional 3-Frequent 4-Constant
c Desired Signal Strength: Adjusted for level at receiver
d TIA 603 Method- analog
e IS102.CAAA Method - Digital
f Radio Type: P-Portable M-Mobile D-Data Modem

	Radio	Type	Model #	Type [f]	Specifications Brand	IM Spec.	Spec	Spec	Level [b]	Interference	Attenuation
1	ANALOG SPECTRA	3 db	D04UJH9PW7AN	MODE	MOTOROLA	-80 dB	dB quieting	-80 dB	4	1/8	
2	ASTRO SPECTRA	3 db	D04UJH9PW7AN	MODE	MOTOROLA	-80 dB	dB quieting	-80 dB	4	1/8	
3	MCS-2000 MOBILE	3 db	M01UJM6PW6_N	M	MOTOROLA	-80 dB	dB quieting	-80 dB	4	1/8	
4	MTS-2000 PORTABLE	0 db	H01UCD6PW1_N	P	MOTOROLA	-72 dB	dB quieting	-72 dB	4	1/8	
5	XTS-3000 PORTABLE	0 db	H09UCF9PW7_N	P-ANALOG MODE	MOTOROLA	-74 dB	.40 uV 20 dB quieting	-75 dB	4	1/8	
6	XTS-3000 PORTABLE	0 db	H09UCF9PW7_N	P-DIGITAL MODE	MOTOROLA	-74 dB	.40 uV 20 dB quieting	-75 dB	4	1/8	


Display: SPECTRUM ANALYZER
Center Freq: 860.9875 MHz
-40
Sens: MIN
Disp:
20 kHz/div
-60
Input Lvl
(dBm)
-80
SA:NORMAL
Mrk:OFF
----.-dBm
----.---MHz
-100
Sheraton LynnField
return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Location
Description: WYOMA SQUARE, LYNN
Latitude: N 42 29 06
Longitude: W 70 57 32

Technical Information: High Level IDEN Signals (-30 dbm) located several Mhz above an MA SP Channels

Modulation Type: 16K0F3E ALT DATA / VOICE

Description Of System: 20 CHANNEL , NINE SITE ANALOG SIMULCAST TRUNKED SYSTEM

	Frequencies	Chan Type [a]	Level of Interference [b]	Radius Of Interference (mi.)	Desired Signal Strength (dBm) [c]	Noise Floor w/ Interferer (dBm)	Noise Floor w/o Interferer (dBm)	Amount of Attenuation needed for 12 dB SINAD or 5% BER (dB) [d/e]
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6	858.9875	V	4	1/8				
7	857.9875	V	4	1/8				
8	859.7375	V	4	1/8				
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	Radio	Antenna Type	Model #	Type [f]	Brand	IM Spec.	Sensitivity Spec	Selectivity Spec	Interference Level [b]	Radius Of Interference (mi.)	Amount of Attenuation needed for 12 dB SINAD of 5% BER (dB) [d/e]
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3	MCS-2000 MOBILE	3 db	M01UJM6PW6_N	M	MOTOROLA	-80 dB	.30 uV 20 dB quieting	-80 dB	4	1/8	
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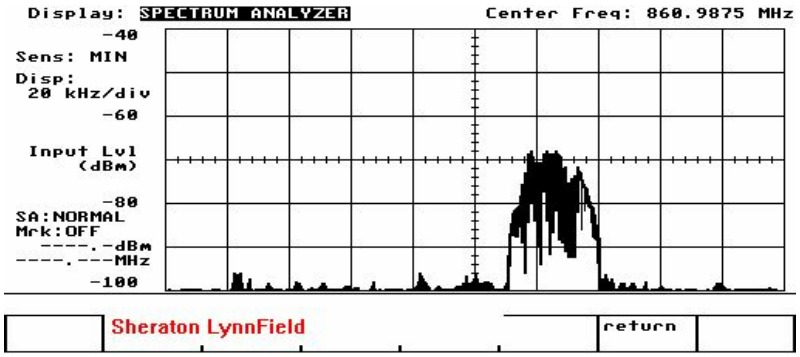

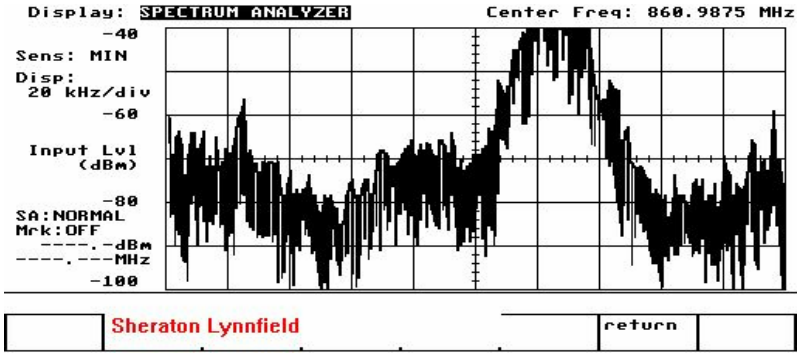

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Description of Interferfence: TROOPERS ARE UNABLE to COMMUNICATE to/from COMMAND POST (located near Blue Hill Ave entrance of Franklin Park Zoo). Also, UNABLE to COMMUNICATE PORTABLE / PORTABLE or PORTABLE / MOBILE

TRUNKED COMMUNICATIONS were O.K. beyond 1200 Ft West on Circuit Drive

Location
Description: FRANKLIN PARK, BOSTON, MA
Latitude: 42 18 10
Longitude: 71 05 13

Technical Information:

Modulation Type: 16K0F3E ALT DATA / VOICE

Description Of System: 20 CHANNEL , NINE SITE ANALOG SIMULCAST TRUNKED SYSTEM

	Frequencies	Chan Type [a]	Level of Interference [b]	Radius Of Interference (mi.)	Desired Signal Strength (dBm) [c]	Noise Floor w/ Interferer (dBm)	Noise Floor w/o Interferer (dBm)	Amount of Attenuation needed for 12 dB SINAD or 5% BER (dB) [d/e]
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6	858.9875	V	4	1/8				
7	857.9875	V	4	1/8				
8	859.7375	V	4	1/8				
9	859.9875	V	4	1/8				
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a Channel Type: C-control V-voice D-Data
b Interference Level: 0-None 1-Rare 2-Occasional 3-Frequent 4-Constant
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Specifications

	Radio	Antenna Type	Model #	Type [f]	Brand	IM Spec.	Sensitivity Spec	Selectivity Spec	Interference Level [b]	Radius Of Interference (mi.)	Amount of Attenuation needed for 12 dB SINAD of 5% BER (dB) [d/e]
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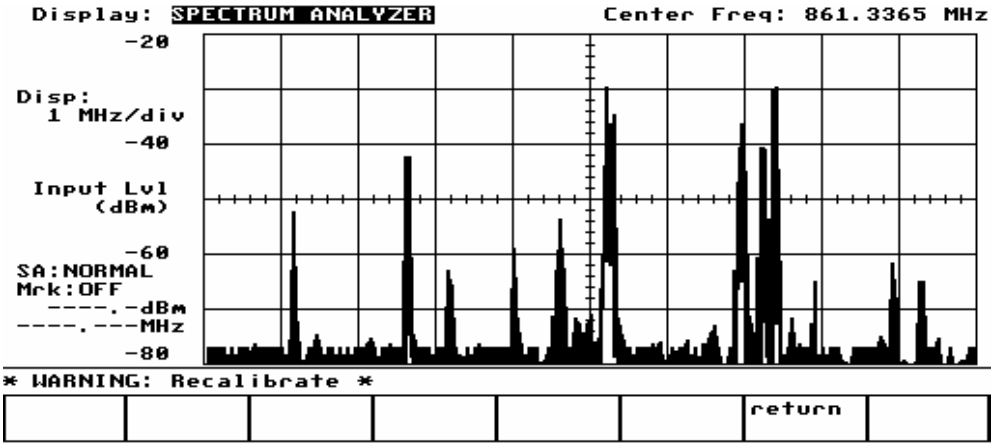
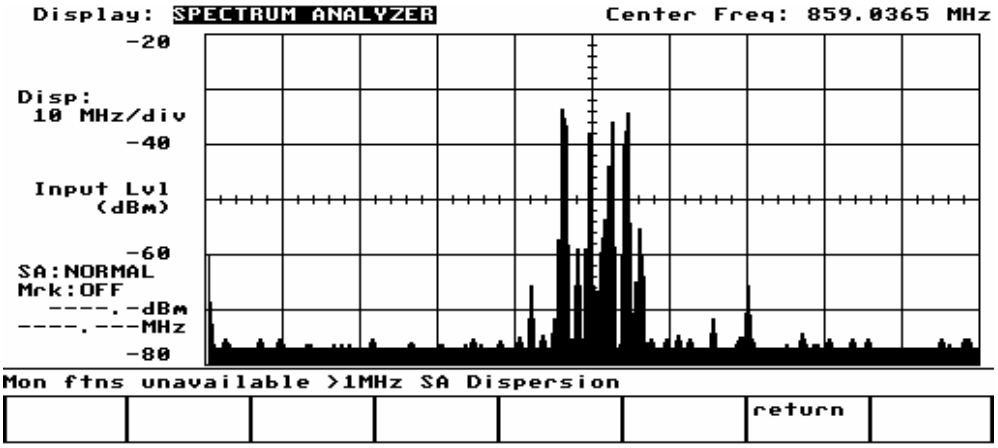
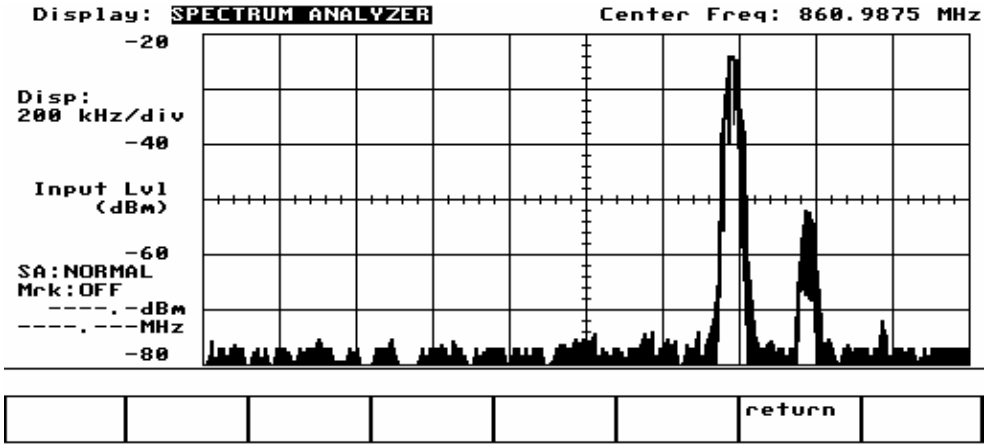
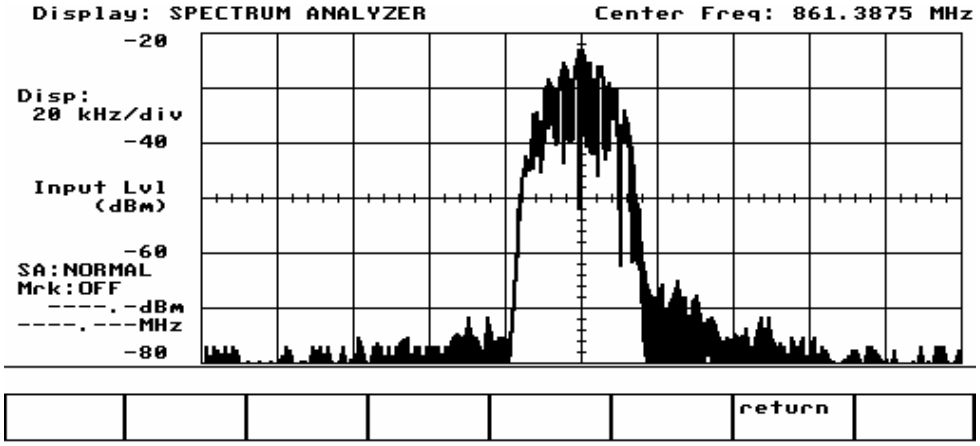
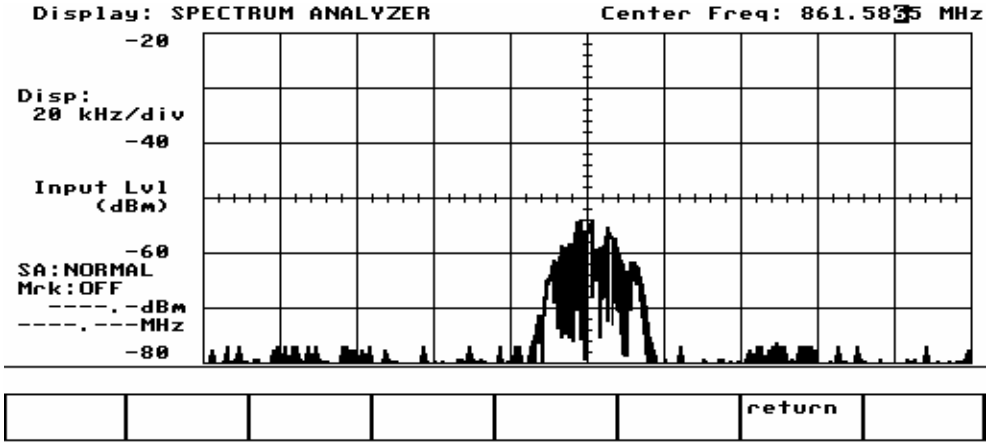
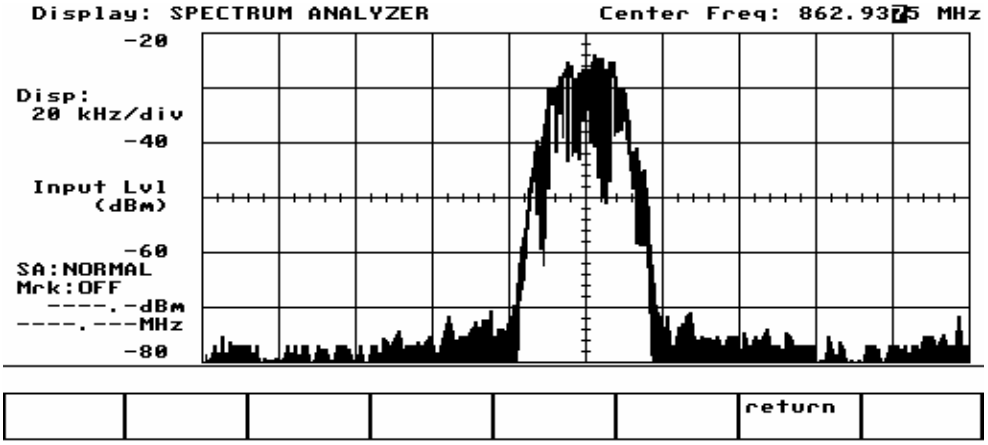





Display: SPECTRUM ANALYZER
Center Freq: 860.9875 MHz
-20
Disp:
200 kHz/div
-40
Input Lvl
(dBm)
-60
SA:NORMAL
Mrk:OFF
----.-dBm
----.---MHz
-80
return


Display: SPECTRUM ANALYZER
Center Freq: 861.3875 MHz
-20
Disp:
20 kHz/div
-40
Input Lvl
(dBm)
-60
SA:NORMAL
Mrk:OFF
----.-dBm
----.---MHz
-80
return


Display: SPECTRUM ANALYZER
Center Freq: 861.5835 MHz
-20
Disp:
20 kHz/div
-40
Input Lvl
(dBm)
-60
SA:NORMAL
Mrk:OFF
----.-dBm
----.---MHz
-80
return


Display: SPECTRUM ANALYZER
Center Freq: 862.9375 MHz
-20
Disp:
20 kHz/div
-40
Input Lvl
(dBm)
-60
SA:NORMAL
Mrk:OFF
----.-dBm
----.---MHz
-80
return

Affected Area
Carrier 1 Information

Carrier: **UNKNOWN (SEE ATTACHED COPY(S) OF SPECTRUM ANALYZER SCREENS)**
Technology Type:

Contact:
Title:

Street Adress:

City
State
Zip

Site Name:
Omni or Sector:
Antenna Height (ft. AGL):
Structure Type:

Location
Description:
Latitude:
Longitude:

Technical Information
Type Of System:
Modulation (if known):

	Frequencies	Sector	ERP (dBm)	ERP (watts)	Signal Strength at Portable (dBm) [a]	Frequency Separation From PS Freq. (kHz)
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						

a Adjusted for level at receiver

Tests Performed

Date:

N/I Measurements?

☐ Noise Floor Measurements w/ Carrier 1
☐ Noise Floor Measurements w/ Carrier 2
☐ Noise Floor Measurements w/ Carrier 3

☐ Noise Floor Measurements w/o Carrier 1
☐ Noise Floor Measurements w/o Carrier 2
☐ Noise Floor Measurements w/o Carrier 3
☐ Noise Floor Measurements w/o any Carriers

IM Calculations?

Were there products that fell directly on frequency?

☐ Two tone
- ☐ 2A-B
- ☐ 3A-2B

☐ Three Tone
- ☐ A+B-C

Five Tone
- ☐ A+B+C-D-E

☐ IM Attenuator Tests?
Type
Results

☐ Better Radios Tested?
Type
Results

☐ Cavity Filter Tests
Type
Results

☐ Frequency Changes
Describe