

A. Applicant's Qualifications

QUALCOMM Incorporated (www.qualcomm.com) is a global leader in developing, delivering and enabling innovative digital wireless communications products and services based on Code Division Multiple Access (CDMA) technology. The Company is helping to transform the wireless industry with innovative voice, data and Internet products and solutions. QUALCOMM's patents are essential to CDMA wireless telecommunications standards worldwide and the Company has licensed its CDMA patent portfolio to more than 125 telecommunications equipment manufacturers. Headquartered in San Diego, California, the Company employs approximately 7,000 people around the world. QUALCOMM is included in the S&P 500 Index and is a 2003 FORTUNE 500® company traded on the Nasdaq Stock Market® under the ticker symbol "QCOM."

B. Experimentation Proposal

B1. QUALCOMM is expanding its CDMA developed technology with the emergence of new applications for wireless technology in the 700 MHz band. QUALCOMM is proposing to install a transmitter on top of Mount San Miguel, which is an existing antenna farm for commercial services, for testing purposes. The transmitted digital signal on Channel 53 (704 – 710 MHz) will be 6 MHz wide and operate at a power level of 30 kW ERP. The Mount San Miguel location is at Latitude 32-41-48 N and Longitude 116-56-10 W.

B2. QUALCOMM has been performing initial development testing under the STA Call sign WB9XUM (File 0311-EX-ST-2004). QUALCOMM will continue limited testing using the frequencies and power levels described in Table 1 authorized in the mentioned STA, and requests that these frequencies be added to this experimental license application.

Table 1: Low Power Test Locations

	Location 1	Location 2	Location 3
Lat	NL 32-53-43	32-53-50	32-50-24
Long	117-11-44	117-12-05	117-14-41

TV Channel	Frequency Range	Power (W ERP)	Power (W EIRP)
53	704-710	60	100
56	722-728	60	100
59	740-746	60	100

C. Coordination with Society of Broadcast Engineers, Inc. (SBE)

Prior to activating the experimental transmitter, QUALCOMM will coordinate with SBE to verify that no interference to existing licensed broadcast stations will occur. This coordination effort has been successful in while operating under QUALCOMM's current STA (call sign WB9XUM.)

D. Interference Analysis for Mount San Miguel Test Transmitter per OET-69

Qualcomm requests to place a test transmitter on Mount San Miguel in San Diego County, which is an existing antenna farm for commercial services. It will transmit a digital signal 6 MHz wide on Ch. 53 (704 – 710 MHz) at 30kW ERP using a directional cardioid with a one degree electrical down-tilt and an azimuth of 205 degrees TN. The software program ComStudy 2.0, was used to perform the Interference Analysis.

Physical address:

Global Signal Communications
12197 Campo Rd.
San Diego, CA 91978

Latitude - 32-41-48 N
Longitude - 116-56-10 W

AGL - 20 Meters
G-AMSL - 772 Meters
RC-AMSL - 792 Meters

San Miguel Test Site Transmitter Information


TV Site Information


General
ERP
Contour
Tx Antenna
Rx Antenna
Comments

Call Sign
MFTS- San Miguel
Licensee
Latitude
32-41-48.0 N
Longitude
116-56-10.0 W
ERP
30.00 kW
Frequency
705.25 MHz Ch
53 N
City
State
County
Country
Class
DTV

Param	Value [m]	Terrain	dBase
AGL	20.00		N/A
G-AMSL	772.00	772.00 m	N/A
RC-AMSL	792.00		N/A
HAAT	550.75	530.75	N/A

Zone
0
Modulation Type
FM all +/- 2.5 KHz
Time delay shift
0 μs
ARN
Status
LIC
MLS Color

OK
Cancel

The proposed antenna is an ERI AL8-8N at 205 degrees TN

San Miguel Test Site Antenna Information

TV Site Information

General | ERP | Contours | Tx Antenna | Rx Antenna | Comments

Azimuth	Fld	dB	ERP	dBk
0	0.117	-18.636	411	-3.865
1	0.122	-18.273	447	-3.502
2	0.127	-17.924	484	-3.153
3	0.131	-17.655	515	-2.883
4	0.136	-17.329	555	-2.558
5	0.140	-17.077	588	-2.306
6	0.146	-16.713	639	-1.942

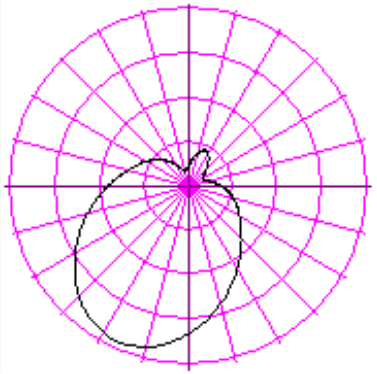
Electric Down Tilt: Degrees to 50%: 9
 Degrees Tilt: 1
 Mechanical Down Tilt: Tilt Azimuth: 0
 Degrees Tilt: 0

Pattern View:
☒ Horizontal
☐ Vertical

Azimuth: 205
 Gain: 0

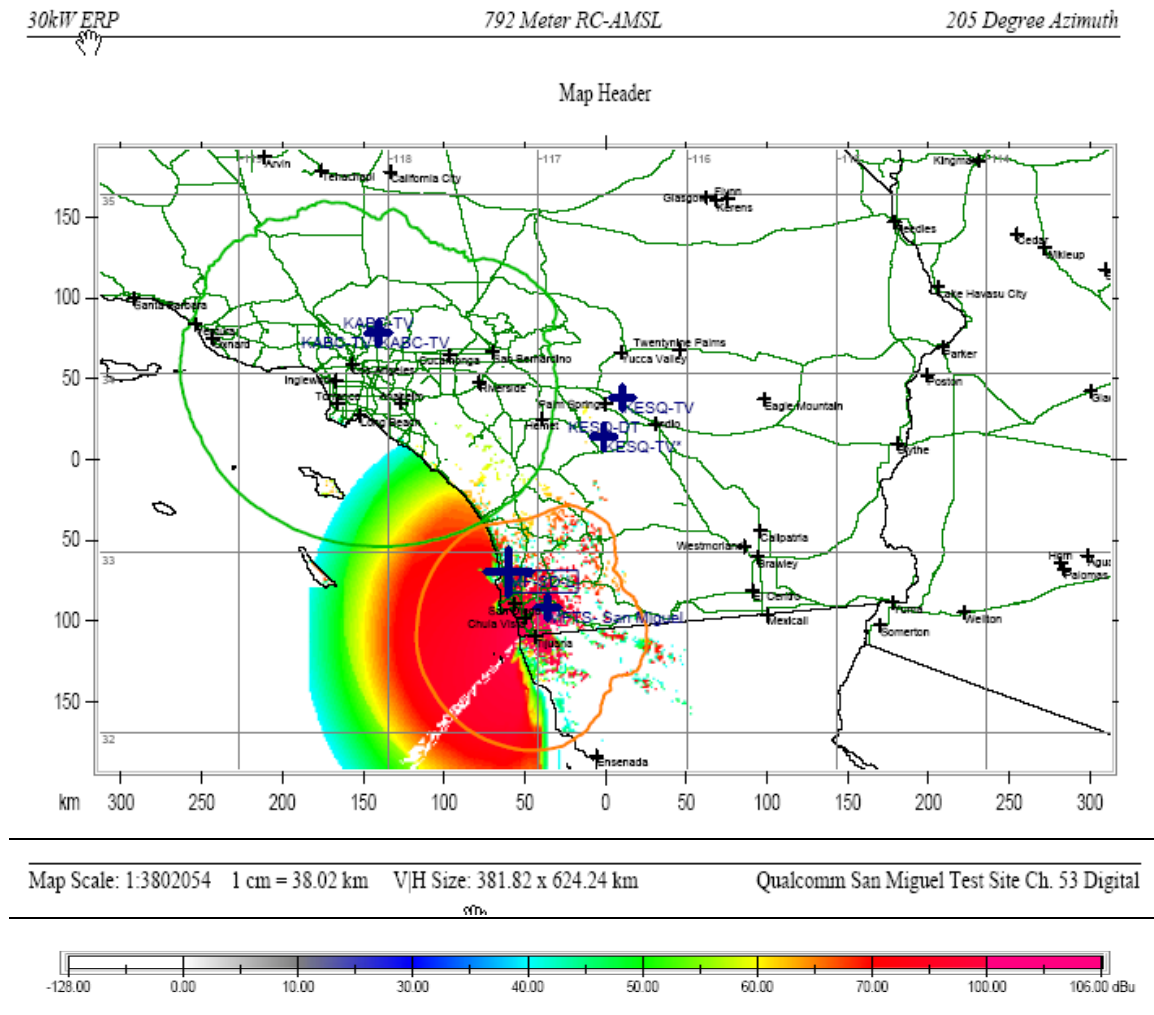
Load Edit Print

Pattern Name: AL8-8N OK Cancel



Signal Plot

Based on Longley-Rice with a 50% confidence and a theoretical 9meter receive antenna.



OET-69 Interference Analysis

OET-69 Interference Analysis for Proposed Test Radio on Mount San Miguel San Diego

Co-Channel Digital

Callsign	Class	Type	ERP	Sep Type	Status	D/U	Rx Gain	Rx F/B	Band	Ch#	Adj	Matrix	Svc Conto	Svc dBu	Old Pop%	New Pop%	Total Pop	Old Pop	New Pop	Ovl Pop	Ovl Pop%
KABC-DT	DTV	LIC	182	D/M	Clean	23	10	14	UHF	53	Co	LR	F(50,90)	41	0.00%	0.40%	12375248	12375248	12321332	53916	0.44

Co-Channel Analog

Callsign	Class	Type	ERP	Sep Type	Status	D/U	Rx Gain	Rx F/B	Band	Ch#	Adj	Matrix	Svc Conto	Svc dBu	Old Pop%	New Pop%	Total Pop	Old Pop	New Pop	Ovl Pop	Ovl Pop%
KVMD	NTSC	LIC	5000	D/M	Clean	40	0	6	UHF	53	Z Co	LR	F(50,50)	64	0.00%	0.00%	51455	51455	51455	0	0

Adjacent-Ch Analog

Callsign	Class	Type	ERP	Sep Type	Status	D/U	Rx Gain	Rx F/B	Band	Ch#	Adj	Matrix	Svc Conto	Svc dBu	Old Pop%	New Pop%	Total Pop	Old Pop	New Pop	Ovl Pop	Ovl Pop%
KNSD	NTSC	LIC	2510	D/M	Clean	-33	0	0	UHF	39	Z T-14	LR	F(50,50)	64	0.00%	0.00%	2075286	2075286	2075286	0	0
KUSI-TV	NTSC	LIC	2820	D/M	Clean	-28	0	6	UHF	51	Z T-2	LR	F(50,50)	64	0.00%	0.00%	1941274	1941274	1941274	0	0

Adjacent-Ch Digital

Callsign	Class	Type	ERP	Sep Type	Status	D/U	Rx Gain	Rx F/B	Band	Ch#	Adj	Matrix	Svc Conto	Svc dBu	Old Pop%	New Pop%	Total Pop	Old Pop	New Pop	Ovl Pop	Ovl Pop%
KESQ-DT	DTV	CP	80	D/M	Clean	-28	10	14	UHF	52	A-1	LR	F(50,90)	41	0.00%	1.70%	1280782	1280782	1259578	21204	1.66