

SATELLITE EARTH STATION
 FREQUENCY COORDINATION
 Run Options
 05/2/2003

User name kryan
 Site name KAUAI
 Calculations Y
 Horizon elevation N
 Coord. Distance N
 Horizon gain N
 Great circle Y
 Frequencies Y
 Frequencies Low N
 Frequencies High N
 Profile Type
 Precipitation Scatter N
 Generate Owner/Plots Y
 Generate Transponder N
 Possible interference paths 24
 Margins 1
 Coordination run

SATELLITE EARTH STATION
 FREQUENCY COORDINATION DATA
 05/2/2003

Company	SKYTOWER, INC	
Earth Station Name, State		KAUAI, HI
Latitude (DMS) (NAD83)		22 2 2.5 N
Longitude (DMS) (NAD83)		159 47 21.7 W
Ground Elevation AMSL (Ft/m)		40/ 12.19
Antenna Centerline AGL (Ft/m)		65600 / 20,000
Transmit Antenna Type:	FCC32	FCC Reference
		32-25LOG(THETA)
3.0 GHz Gain (dBi) / Diameter (m)		13.0 / 0.3
3 dB / 15 dB Half Beamwidth		10.00 / 20.00
Operating Mode		TRANSMIT ONLY
Modulation		DIGITAL
Emission / Transmit Band (MHz)		6M76F8W / 2177.5
Max. Available RF Power (dBW)/4 kHz)		-35.00
(dBW)/MHz)		-11.00
Max. EIRP (dBW)/4 kHz)		-22.00
(dBW)/MHz)		2.00
(dBW)		7.40
Max permissible Interference Power		
3.0 GHz, 20% (dBW/4 kHz)		-154.0
3.0 GHz, 0.0025% (dBW/4 kHz)		-131.0

Low Earth Orbit Satellite

Azimuth Range (Min/Max) Degrees 0.0 / 360.0
 Minimum Elevation Angle Degrees 10.0

Radio Climate C
 Rain Zone 4

Max Great Circle Coordination Distance (Mi/Km)
 3.0 GHz 186.4 / 300.0

Precipitation Scatter Contour Radius (Mi/Km)
 3.0 GHz 62.1 / 100.0

Note: Horizon is less than 0.2 degrees at all azimuths

Table of Earth Station Coordination Values 05/2/2003

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 Objectives: Transmit -154.0 (dBW /4 kHz) TX Power -35.0 (dBW/4 kHz)

Azimuth (Deg)	Horizon Elevation Angle (Deg)	Antenna Disc. Angle (Deg)	3.0 GHz	
			Antenna Gain (dBi)	Coordination Distance (Km)
0	0.00	71.92	10.00	300.0
5	0.00	70.38	10.00	300.0
10	0.00	68.99	10.00	300.0
15	0.00	67.75	10.00	300.0
20	0.00	66.68	10.00	300.0
25	0.00	65.79	10.00	300.0
30	0.00	65.09	10.00	300.0
35	0.00	64.59	10.00	300.0
40	0.00	64.30	10.00	300.0
45	0.00	64.22	10.00	300.0
50	0.00	64.35	10.00	300.0
55	0.00	64.68	10.00	300.0
60	0.00	65.23	10.00	300.0
65	0.00	65.96	10.00	300.0
70	0.00	66.89	10.00	300.0
75	0.00	68.00	10.00	300.0
80	0.00	69.27	10.00	300.0
85	0.00	70.70	10.00	300.0
90	0.00	72.26	10.00	300.0
95	0.00	73.95	10.00	300.0
100	0.00	75.75	10.00	300.0
105	0.00	77.65	10.00	300.0
110	0.00	79.62	10.00	300.0
115	0.00	81.67	10.00	300.0

120	0.00	83.76	10.00	300.0
125	0.00	85.90	10.00	300.0
130	0.00	88.06	10.00	300.0
135	0.00	90.23	10.00	300.0
140	0.00	92.40	10.00	300.0
145	0.00	94.56	10.00	300.0
150	0.00	96.69	10.00	300.0
155	0.00	98.78	10.00	300.0
160	0.00	100.81	10.00	300.0
165	0.00	102.77	10.00	300.0
170	0.00	104.64	10.00	300.0
175	0.00	106.42	10.00	300.0
180	0.00	108.08	10.00	300.0

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Azimuth (Deg)	Horizon Elevation Angle (Deg)	Antenna Disc. Angle (Deg)	Antenna Gain (dBi)	3.0 GHz Coordination Distance (Km)
185	0.00	109.62	10.00	300.0
190	0.00	111.01	10.00	300.0
195	0.00	112.25	10.00	300.0
200	0.00	113.32	10.00	300.0
205	0.00	114.21	10.00	300.0
210	0.00	114.91	10.00	300.0
215	0.00	115.41	10.00	300.0
220	0.00	115.70	10.00	300.0
225	0.00	115.78	10.00	300.0
230	0.00	115.65	10.00	300.0
235	0.00	115.32	10.00	300.0
240	0.00	114.77	10.00	300.0
245	0.00	114.04	10.00	300.0
250	0.00	113.11	10.00	300.0
255	0.00	112.00	10.00	300.0
260	0.00	110.73	10.00	300.0
265	0.00	109.30	10.00	300.0
270	0.00	107.74	10.00	300.0
275	0.00	106.05	10.00	300.0
280	0.00	104.25	10.00	300.0
285	0.00	102.35	10.00	300.0
290	0.00	100.38	10.00	300.0
295	0.00	98.33	10.00	300.0
300	0.00	96.24	10.00	300.0
305	0.00	94.10	10.00	300.0

310	0.00	91.94	10.00	300.0
315	0.00	89.77	10.00	300.0
320	0.00	87.60	10.00	300.0
325	0.00	85.44	10.00	300.0
330	0.00	83.31	10.00	300.0
335	0.00	81.22	10.00	300.0
340	0.00	79.19	10.00	300.0
345	0.00	77.23	10.00	300.0
350	0.00	75.36	10.00	300.0
355	0.00	73.58	10.00	300.0

DESCRIPTION OF GREAT CIRCLE INTERFERENCE CASE HEADINGS

TERRESTRIAL PATH: SITE NAME AND STATE; THE FIRST SITE LISTED IS THE TERRESTRIAL STATION INVOLVED IN THE INTERFERENCE CONFLICT.

LAT: LATITUDE OF THE INVOLVED TERRESTRIAL STATION

LON: LONGITUDE OF THE INVOLVED TERRESTRIAL STATION

CALL: FCC CALL SIGN OF THE INVOLVED TERRESTRIAL STATION

OWNER: OWNER OF THE TERRESTRIAL PATH

GND: GROUND ELEVATION (AMSL) OF THE INVOLVED TERRESTRIAL STATION

ACL: ANTENNA CENTERLINE (AGL) OF THE INVOLVED TERRESTRIAL STATION

EDISCT: EARTH STATION DISCRIMINATION ANGLE , IN DEGREES, TOWARDS THE INVOLVED TERRESTRIAL STATION

TDISCT: INVOLVED TERRESTRIAL STATION DISCRIMINATION ANGLE, IN DEGREES, TOWARDS THE EARTH STATION

GES: GAIN OF THE EARTH STATION IN dBi AT THE CALCULATED EDISCT

GTS: GAIN OF THE INVOLVED TERRESTRIAL STATION IN DBI AT THE CALCULATED TDISCT

FSLOSS: FREE SPACE PROPAGATION LOSS IN dB DUE TO THE DISTANCE BETWEEN THE EARTH STATION AND THE INVOLVED TERRESTRIAL STATION AT THE INTERFERENCE FREQUENCY

TANT: INVOLVED TERRESTRIAL STATION ANTENNA CODE AND TYPE

DIST: DISTANCE BETWEEN THE EARTH STATION AND THE INVOLVED TERRESTRIAL STATION IN KILOMETERS

AZ: AZIMUTH IN DEGREES FROM TRUE NORTH FROM THE EARTH STATION TO THE INVOLVED TERRESTRIAL STATION

PR: CALCULATED POWER RECEIVED IN dBW.
 PR = GES + GTS + (TPWR - 30) - FSLOSS - LL for RECEIVE
 PR = GES + GTS + TX POWER - FSLOSS - LL - TX_LOSS for TRANSMIT

TX POWER: POWER OF EARTH STATION IN dBW/4kHz

MARGIN: MARGIN IN DB TO THE INTERFERENCE OBJECTIVE. THIS VALUE IS THE DIFFERENCE BETWEEN THE OBJECTIVE AND THE PR

TPWR: TRANSMIT POWER IN DBM OF THE TRANSMIT STATION IN THE INTERFERENCE CONFLICT

LL: LINE LOSS OF THE INVOLVED TERRESTRIAL STATION

TX_LOSS: TRANSMIT LINE LOSS

LOADING: TRAFFIC LOADING OF THE INVOLVED TERRESTRIAL STATION

FREQ POL: FREQUENCIES AND POLARIZATIONS OF THE INVOLVED TERRESTRIAL STATION

Great Circle Interference Conflicts
 05/2/2003

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Terrestrial Path		Gnd	EDISCT	GES	FSLoss	Dist	PR	TPWR	Plan
Latitude	Longitude	ACL	TDISCT	GTS	TANT	Az	Margin	LL	
Owner									
Freq/Pol									
1 KAPELE	HIPMR BKG SDS HI	1116.12	66.5	10.0	121.8	13.7-126.6	34.0NS		
22 4 49 159 39 59 WDU332		14.02	2.9	20.2	M20610	67.9 27.4	0.0		
P4220 : VERIZON HAWAII INC.					192 CH	DIG RCN:			
2171.6000V									
Status: L				Equipment: 2KGJ01		Emission: 3M50A7W			
OH LOSS 20% / 0.0025%:	Did not profile								
2 PMR BKG SDS HIKAPELE	HI	3.05	79.4	10.0	99.1	1.0-132.9	34.0NS		
22 1 51 159 46 49 KUQ84		32.31	224.5	-8.8	M20610	109.5 21.1	0.0		
P4220 : VERIZON HAWAII INC.					192 CH	DIG RCN:			
2121.6000V									
Status: L				Equipment: 2KGJ01		Emission: 3M50A7W			
OH LOSS 20% / 0.0025%:	Did not profile								
3 BISHOP	HIMAUNA KAPU HI	7.01	80.2	10.0	145.8	215.3-142.1	33.0NS		

21 18 35 157 51 33 WDD39 72.54 0.1 29.7 M20300 111.5 11.9 1.0
P4220 : VERIZON HAWAII INC. 96 CH DIG RCN: 86071712
2128.0000H
Status: L Equipment: 2M2R04 Emission: 3M50D7W
OH LOSS 20% / 0.0025%: Did not profile

4 KA-201-01 HIKA-104-01 HI 305.09 79.9 10.0 129.4 32.7-150.3 18.0NS
21 55 48 159 29 35 WMN819 9.75 20.3 9.0 A21931 110.6 3.7 5.0
P2657 : AMERITECH MOBILE COMMUNICATIONS, LLC 96 CH DIG RCN: 02050720
2165.2000V
Status: L Equipment: 300051 Emission: 3M50D7W
OH LOSS 20% / 0.0025%: Did not profile

5 KUKUIOLONO HIKAPELE HI 249.94 82.3 10.0 128.7 30.2-152.9 27.0NS
21 54 42 159 31 41 KXR51 16.46 334.1 2.8 M20605 116.6 1.1 2.0
P4220 : VERIZON HAWAII INC. 96 CH DIG RCN: 88032209
2112.0000V
Status: L Equipment: 2M2R04 Emission: 3M50D7W
OH LOSS 20% / 0.0025%: Did not profile

Great Circle Interference Conflicts 05/2/2003

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Terrestrial Path		Gnd	EDISCT	GES	FSLoss	Dist	PR	TPWR	Plan
Latitude	Longitude	ACL	TDISCT	GTS	TANT	Az	Margin	LL	
Owner					Loading				
Freq/Pol									

6 KUKUIOLONO HIKAPELE HI 249.94 82.3 10.0 128.7 30.2-152.9 27.0NS
21 54 42 159 31 41 KXR51 19.81 334.1 2.8 M20605 116.6 1.1 2.0
P4220 : VERIZON HAWAII INC. 96 CH DIG RCN: 88032209
2112.0000H
Status: L Equipment: 2M2R04 Emission: 3M50D7W
OH LOSS 20% / 0.0025%: Did not profile

7 SUMMIT CAMP HIPRINCEVILLE HI 655.02 68.4 10.0 130.5 37.1-153.3 10.0NS
22 6 43 159 26 22 WHE593 7.92 276.6 2.2 A22280 76.5 0.7 0.0
P4220 : VERIZON HAWAII INC. 192 CH DIG RCN:
2174.8000H
Status: L Equipment: 2KGJ01 Emission: 3M50A7W
OH LOSS 20% / 0.0025%: Did not profile

8 PRINCEVILLE HISUMMIT CAMP HI 73.15 65.0 10.0 130.6 37.7-153.4 30.0NS
 22 12 44 159 28 43 WHE594 6.40 78.5 2.2 A22280 58.3 0.6 0.0
 P4220 : VERIZON HAWAII INC. 192 CH DIG RCN:
 2124.8000H
 Status: L Equipment: 2UBJ02 Emission: F7W
 OH LOSS 20% / 0.0025%: Did not profile

9 LIHUE HISUMMIT CAMP HI 64.01 75.2 10.0 131.9 43.9-154.7 30.0NS
 21 58 31 159 22 9 KUV79 13.11 304.2 2.2 A22280 98.4 -0.7 0.0
 P4220 : VERIZON HAWAII INC. 192 CH DIG RCN:
 2174.8000H
 Status: 0 Equipment: 2UBJ02 Emission: F7W
 OH LOSS 20% / 0.0025%: Did not profile

10 KA-101-01 HIKA-201-01 HI 317.13 74.3 10.0 130.7 38.0-155.6 28.0NS
 21 59 50 159 25 24 WLV483 18.29 52.2 1.0 A26001 96.1 -1.6 1.0
 P2657 : AMERITECH MOBILE COMMUNICATIONS, LLC 96 CH DIG RCN: 02050720
 2165.2000H
 Status: L Equipment: 2YTY03 Emission: F7W
 OH LOSS 20% / 0.0025%: Did not profile

Great Circle Interference Conflicts 05/2/2003

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Terrestrial Path	Gnd EDISCT	GES FSloss	Dist	PR	TPWR	Plan
Latitude Longitude	ACL TDISCT	GTS TANT	Az	Margin	LL	
Owner						
Freq/Pol						
11 KA-101-01 HIKA-201-01 HI	317.13 74.3	10.0 130.7	38.0-155.6	28.0NS		
21 59 50 159 25 24 WLV483	18.29 52.2	1.0 A26001	96.1 -1.6	1.0		
P2657 : AMERITECH MOBILE COMMUNICATIONS, LLC	96 CH	DIG RCN: 02050720				
2174.8000V						
Status: L	Equipment: 2YTY03	Emission: F7W				
OH LOSS 20% / 0.0025%: Did not profile						

12 SUMMIT CAMP HILIHUE HI 655.02 68.4 10.0 130.5 37.1-156.7 10.0NS
 22 6 43 159 26 22 WHE593 7.92 102.2 -1.2 A22280 76.5 -2.7 0.0
 P4220 : VERIZON HAWAII INC. 192 CH DIG RCN:

2124.8000H

Status: L Equipment: 2KGJ01 Emission: 3M50A7W
OH LOSS 20% / 0.0025%: Did not profile

13 KA-101-01 HIKA-202-01 HI 317.13 74.3 10.0 130.7 38.0-157.9 28.0NS
21 59 50 159 25 24 WLV483 22.86 284.1 -0.2 S25800 96.1 -3.9 2.0
P2657 : AMERITECH MOBILE COMMUNICATIONS, LLC 96 CH DIG RCN: 02051517
2162.0000V

Status: L Equipment: 2YTY03 Emission: F7W
OH LOSS 20% / 0.0025%: Did not profile

14 KA-109-01 HIKA-202-01 HI 123.22 65.2 10.0 130.8 38.4-158.0 28.0NS
22 12 26 159 27 60 WPJB972 12.19 74.4 0.8 C26700 60.0 -4.0 3.0
P2657 : AMERITECH MOBILE COMMUNICATIONS, LLC 96 CH DIG RCN: 02051517
2112.0000H

Status: L Equipment: 2YTY03 Emission: F7W
OH LOSS 20% / 0.0025%: Did not profile

15 KAPELE HIKUKUIOLONO HI 1116.12 66.5 10.0 121.8 13.7-158.2 27.0NS
22 4 49 159 39 59 WDU332 7.01 105.4 -4.4 M20605 67.9 -4.2 7.0
P4220 : VERIZON HAWAII INC. 96 CH DIG RCN: 88032209
2162.0000V

Status: L Equipment: 2M2R04 Emission: 3M50D7W
OH LOSS 20% / 0.0025%: Did not profile

Great Circle Interference Conflicts 05/2/2003

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Terrestrial Path	Gnd EDISCT	GES FS Loss	Dist	PR	TPWR	Plan
Latitude Longitude	ACL TDISCT	GTS	TANT	Az	Margin	LL
Owner			Loading			
Freq/Pol						

16 KAPELE HIKUKUIOLONO HI 1116.12 66.5 10.0 121.8 13.7-158.2 27.0NS
22 4 49 159 39 59 WDU332 14.02 105.4 -4.4 M20605 67.9 -4.2 7.0
P4220 : VERIZON HAWAII INC. 96 CH DIG RCN: 88032209
2162.0000H

Status: L Equipment: 2M2R04 Emission: 3M50D7W
OH LOSS 20% / 0.0025%: Did not profile

17 KA-104-01 HIKA-201-01 HI 145.99 84.6 10.0 125.8 21.5-158.6 28.0NS
 21 55 50 159 36 45 WMN820 6.40 211.7 -6.8 A22290 122.0 -4.6 1.0
 P2657 : AMERITECH MOBILE COMMUNICATIONS, LLC 96 CH DIG RCN: 02050720
 2115.2000V
 Status: L Equipment: 2YTY03 Emission: F7W
 OH LOSS 20% / 0.0025%: Did not profile

***** END OF GREAT CIRCLE CASES REPORT *****

Earth Station Preliminary Analysis Report
 05/2/2003

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Path	Band (GHz)	Azimuth (Deg)	Dist (Km)	Margin dB	EST OH Loss dB	EST Margin dB	
1. KAPELE -FROM-PMR BKG SDS	3	67.9	13.7	27.4	0.00	27.3	***
(note vertical discrimination lowers this case to 6.4 dB)							
2. PMR BKG SDS -FROM-KAPELE	3	109.5	1.0	21.1	0.00	21.1	***
3. BISHOP -FROM-MAUNA KAPU	3	111.5	215.3	11.9	39.98	-28.0	
4. KA-201-01 -FROM-KA-104-01	3	110.6	32.7	3.7	0.00	3.6	***
5. KUKUIOLONO -FROM-KAPELE	3	116.6	30.2	1.1	0.00	1.0	***
6. KUKUIOLONO -FROM-KAPELE	3	116.6	30.2	1.1	0.00	1.0	***
7. SUMMIT CAMP -FROM-PRINCEVILLE	3	76.5	37.1	0.7	0.00	0.7	***
8. PRINCEVILLE -FROM-SUMMIT CAMP	3	58.3	37.7	0.6	0.00	0.5	***
9. LIHUE -FROM-SUMMIT CAMP	3	98.4	43.9	-0.7	0.00	-0.7	
10. KA-101-01 -FROM-KA-201-01	3	96.1	38.0	-1.6	0.00	-1.6	
11. KA-101-01 -FROM-KA-201-01	3	96.1	38.0	-1.6	0.00	-1.6	
12. SUMMIT CAMP -FROM-LIHUE	3	76.5	37.1	-2.7	0.00	-2.7	
13. KA-101-01 -FROM-KA-202-01	3	96.1	38.0	-3.9	0.00	-3.8	
14. KA-109-01 -FROM-KA-202-01	3	60.0	38.4	-4.0	0.00	-3.9	
15. KAPELE -FROM-KUKUIOLONO	3	67.9	13.7	-4.2	0.00	-4.1	
16. KAPELE -FROM-KUKUIOLONO	3	67.9	13.7	-4.2	0.00	-4.1	
17. KA-104-01 -FROM-KA-201-01	3	122.0	21.5	-4.6	0.00	-4.5	