

Notice and Report-Statement of Compliance

Submitted in accordance with clause 4 of the Resource Management (National Environmental Standards for Telecommunication Facilities) Regulations 2008.

Site Code: C2TUU

Site Name: Te Puru

Site Address: 52 – 56 Te Puru Creek Rd

Author:	Olatz Ibanez- RF Design Engineer
Reviewed By:	Robin Chiang - RF Design Engineer
Approved By:	Thorsten Teichmann
Date:	11 th August 2015

RF Human Exposure Limits

The New Zealand Government has produced a national standard for exposure to RF transmissions.

This is encompassed in the New Zealand Standard NZS2772.1.1999 which permits a maximum exposure level to Radio Frequency Fields 3KHz to 300GHz.

Compliance Certification

The Vodafone cell site C2TUU Te Puru will operate in compliance with the New Zealand Standard.

The calculations used to confirm compliance were made in accordance with the requirements described in the new Australian/New Zealand Standard AS/NZS2772.2.2011.

The location and the site type ensure that there is no area in front of the face of the antenna that is accessible to the public. Therefore the associated radio frequency fields, including any cumulative effects, are not expected to reach or exceed 25% of the maximum level authorized by NZS2772.1.1999 in areas accessible to general public.

In addition, this report has been prepared in accordance with NZS 6609.2: 1990 Radiofrequency Radiation: Part 2: Principles and Methods of Measurement 300 kHz to 100 GHz, and as such meets Clause 4(4)(b)(i) of the NES.

Best Engineering Practice

Clause 10 of NZS2772.1.1999 specifies measures for minimizing public exposure to radiofrequency fields. Vodafone NZ achieves compliance with this clause by using best engineering practice and employment of contractors who are certified industry professionals, with extensive health and safety training as required under the Health and Safety Act.

Access Control, RF Warning Signs and Safe Working Procedures will be in place.

This report is prepared based on the RF information provided by the Access Seeker co-location applicant for this specific facility, at time of issue.

Vodafone accepts no responsibility or reliability for information from the Access Seeker co-location applicant that varies from the data contained in this Statement.

Telecommunication equipment considered in this Statement of Compliance and Report:

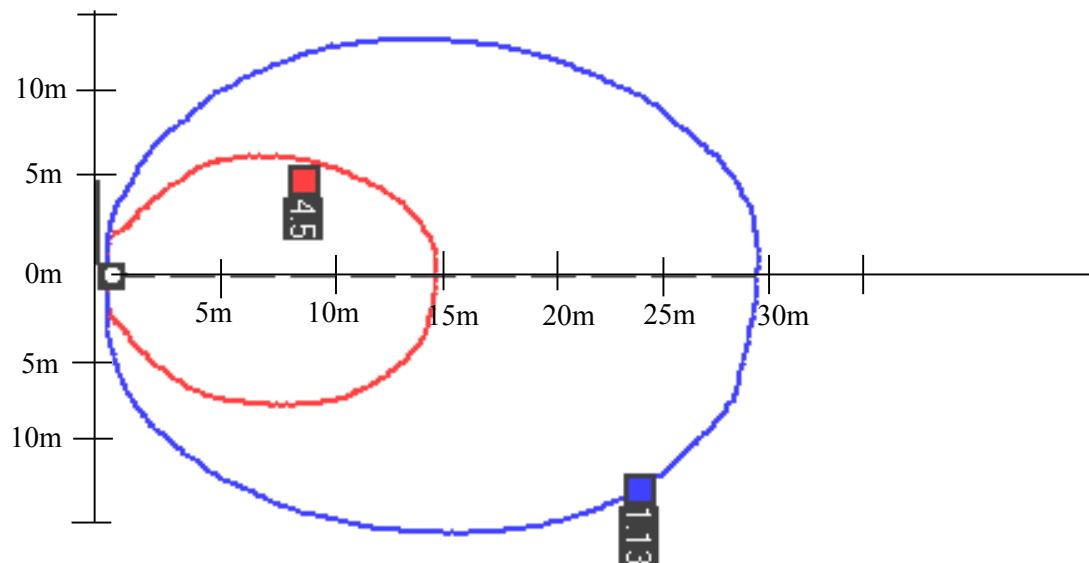
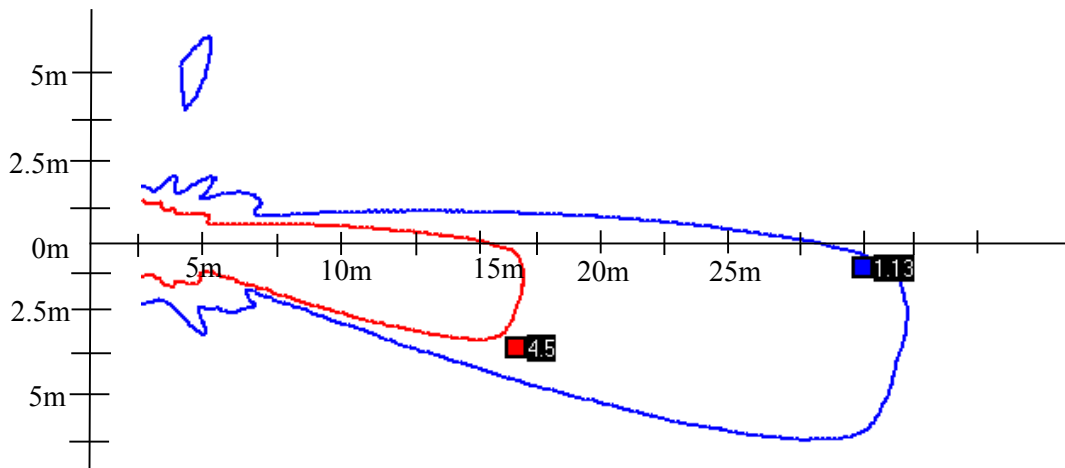
Operator	Equipment	Type	Height on Tower	Amount
Vodafone	Panel antennas	Kathrein 80010866	25m	2
Spark	Panel antennas	Kathrein 80010866	25m	3
Chorus	MW Dish	UKY 220 12/DC15	21.8m	4

National Environmental Standards Compliance Distance Calculation

Antenna: Kathrein 80010866 Max Down tilt 700/1800/2100 MHz

	Red(100%)	Blue (25%)	
Vertical MSD (above antenna's center)	1.0	5.5	m
Vertical MSD (below antenna's center)	2.9	5.8	m
Horizontal MSD	14.8	29.5	m

Antenna Gain 700/1800/2100	17/18/18	dBi
Antenna Line Loss 700/1800/2100	0/0/0	dB
Transmitter Power 700/900/1800/2100	2x40/2x40/4x40	W
Power Flux Density 700/1800/2100	3.5/9/10	W/m ²
Power Flux Density (25%) 700/1800/2100	0.87/2.25/2.5	W/m ²



National Environmental Standards Compliance Distance Calculation

Antenna: Kathrein 80010866 Max Down tilt 700/1800/2100 MHz

Simulation Parameters (RF Map2)		
Antenna Aperture 700/1800/2100	498/498/498	mm
Combiner Loss	0	dB
Max Down Tilt 700/1800/2100	12/12/12	degree

Standardize to 900MHz		
Transmitter Power 700/1800/2100	102.86/40/72	W
Power Flux Density (100%) 700/1800/2100	4.5/4.5/4.5	W/m ²
Power Flux Density (25%) 700/1800/2100	1.13/1.13/1.13	W/m ²



Kathrein 80010866

Standardization Calculations		
Power Flux Density:		
700 MHz	$80 * 1.2857 = 102.86 \text{ W}$	$3.5 * 1.2857 = 4.5$
1800 MHz	$80 / 2 = 40 \text{ W}$	$9 / 2 = 4.5 \text{ W/m}^2$
2100 MHz	$160 / 2.22 = 72 \text{ W}$	$10 / 2.22 = 4.5 \text{ W/m}^2$

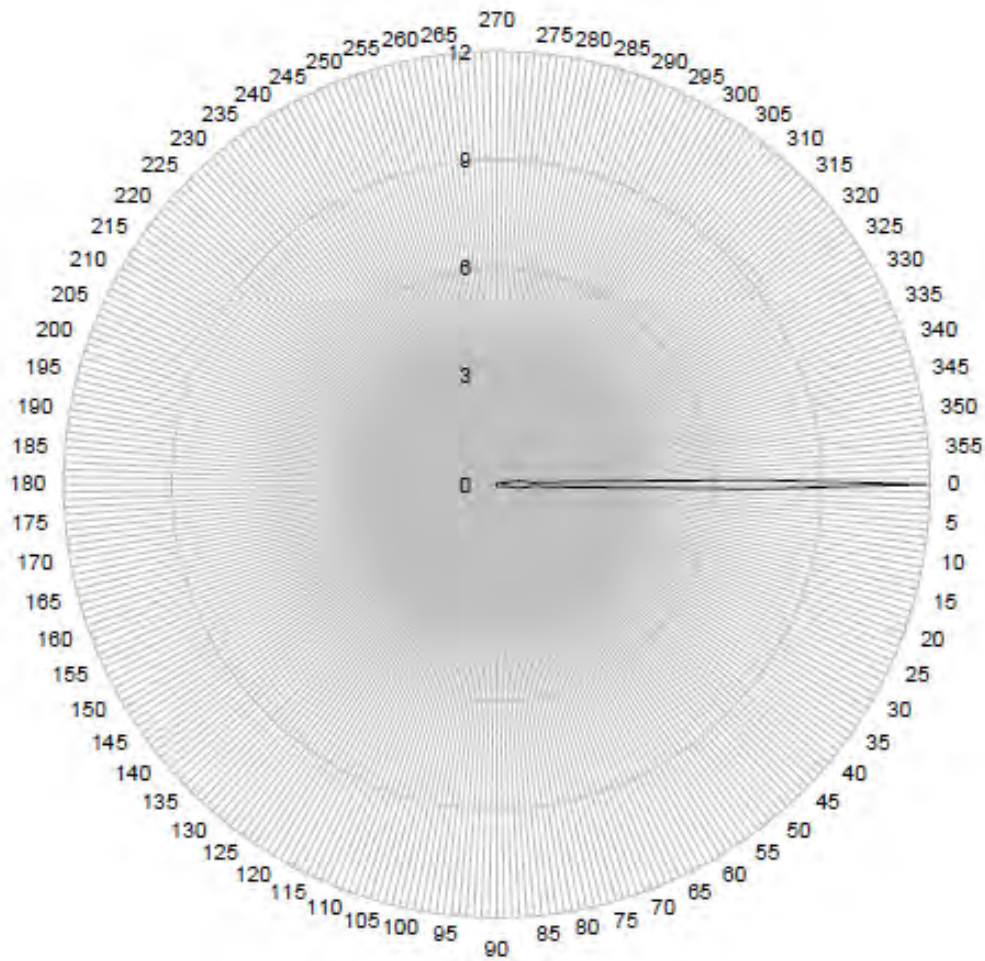
National Environmental Standards Compliance Distance Calculation

NZS2772.1:1999 ("NZS2772")

Antenna:

UKY 220 12/DC15

Extent in metres from the transmit antenna where New Zealand Standard NZS2772 is met - Te Puru RBI, Plan view



Extent in metres from the transmit antenna where New Zealand Standard NZS2772 is met - Te Puru RBI, Elevation view

