Harris Corporation, Inc.
EXHIBIT D

Compliance with FCC Report & Order (FCC96-377)

Vertex RSI Ku 6.3m

This exhibit demonstrates that the antenna at issue complies with FCC Report & Order 96-377. Also addressed is the potential harmful interference to US Navy shorpboard operations (RADAR) and the NASA space research activities in the 13.75 - 14.0 GHz band. The parameters for the earth station are shown below:

Earth Station Coordinates	Deg	Min	Sec	
Lattitude	28	5	23.0	North
Longitude	80	38	20.0	West
Location	Melbourne, Florida			

Earth Station	Value	Unit	Symbol
Atenna Diameter:	6.3	m	D
Antenna Transmit Gain:	57.50	dBi	G
Uplink Frequency (lower)	13.8	GHz	f_l
Uplink Frequency (upper)	14.00	GHz	f_u
Elevation Angle	51.87	Degrees	ϴe
Power Input to the Antenna:	250.00	W	P

Satellite

Satellite Name	T14R	
Orbital Longitude	63.0	West

Distance to Shoreline

Closest Distance to Shoreline	10.00	Km	d

The above spectrum is shared with the Federal Government. Therefore, cordination in this band requires resolution data pertaining to potential interference between the earth station and both, Navy Department and NASA systems. Potential interference from the earth station could impact the Navy and/or NASA systems in two areas. These areas are noted in FCC Order 96-377 dated September 1996, and consist of (1) Radiolocation and radio navigation, and (2) Data Relay Satellites.

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Potential Impact to Government Radiolocation (Shipboard Radar)

Radiolocation operations (RADAR) may occur anywhere in the 13.4 - 14.0 GHz frequency band aboard ocean going United States Navy ships. FCC Order 96-377 allcates the bottom 250 MHz of this 600 MHz band to the Fixed Satellite Service (FSS) on a co-primary basis with the radiolocation operations and provides for an interference proteciton level of -167 dBW/m^2/4KHz.

Calculation of the power spectral density at antenna input is given by:

	Carrier 1	Carrier 2	Units	Symbol
Clear Sky EIPR	58.60	66.60	dBW	*EIRP*
Carrier Bandwidth	5700	36000	MHz	BW_O
Power Density at Antenna Input	-30.44	-30.44	dBW/4KHz	PD_i

The proposed earth station will radiate toward the ocean according to its off-axis side-lope performance. A conservative analysis, using FCC standard reference pattern, results in off-axis antenna gains toward the ocean as follows:

The signal density at the shoreline, through free space is:

PDF = Antenna Feed Power Density (dBW/4KHz) + Antenna Off-Axis Gain (dBi) - Spread Loss (dBw-m^2)

	Carrier 1	Carrier 2		Formula
Antenna Dentity at Antenna Input	-30.44	-30.44	dBW/4KHz	$EIRP - G - 10log(BW_O/4KHz)$
Antenna Off-Axis Gain	-10.9	-10.9	dB	$32-25log(\Theta_e)$
Spread Loss	91.0	91.0	dBW-m^2	$10log(4\pi d^2)$
PFD without Terrain Loss & Blockage	-132.3	-132.3	dBW/4KHz/m^2	
Terrain Loss*	25.0	25.0	dB	
Tree & Building Blockage	10.0	10.0	dB	
PFD with Terrain Loss	**-167.3**	**-167.3**	dBW/4KHz/m^2	
Margin below -167dBW/4KHz/m^2	0.3	0.3	dB	

*does not include absortion loss and earth diffraction loss

The calculated Power Flux Density (PFD), including free space loss, to the closest shoreline location is below the 167 dBW/4KHz/m2 inteference criteria by a positive margin for all carriers. Therefore, there will be no discernable interference to the US Navy Radar from the proposed earth station.

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Potential Impact to NASA's Data Relay Satellite System (TDRSS)

The geographic location of the proposed earth station is outside the 390 Km radious coordination countour surrounding NASA's White Sands, New Mexico ground station complex. Therefore, the TDRSS space-to-earth link will not be impacted by the proposed earth station.

The TDRSS space-to-space link in the 13.772 to 13.778 GHz band is not within the operational frequency of the proposed system. Therefore, there will not be interference to the TFRSS space-to-space link.