



JX Technical update.

Intelsat 18 replacement for IS701

Name	Manufacturer	Satellite type	Payload	Orbital location	Launch vehicle	Launch date
Intelsat 701	Space Systems Loral	three-axis,	C /Ku	180.0°E	Ariane 44LP V60	22 October 1993

Intelsat 701 – THE FACTS

- Launched 23 October 1993 - 18 years old
- Type of satellite FS-1300
- Stabilization: 3 Axis
- Inclination: 0.050 degrees
- Launch weight: 3590 Kg
- Mass in orbit: 1900 Kg
- Design lifetime: 9-10 years Orbital maneuver lifetime 13-16 years .
- Dimensions: 71.5 Ft Wingspan 13.8 Ft Height

Power plant 3970 Watts.



Communications Pay load.

Type of Service: International Broadcast.

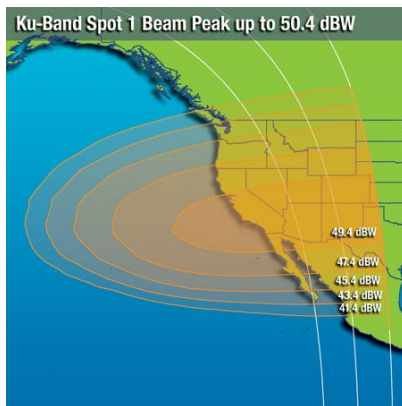
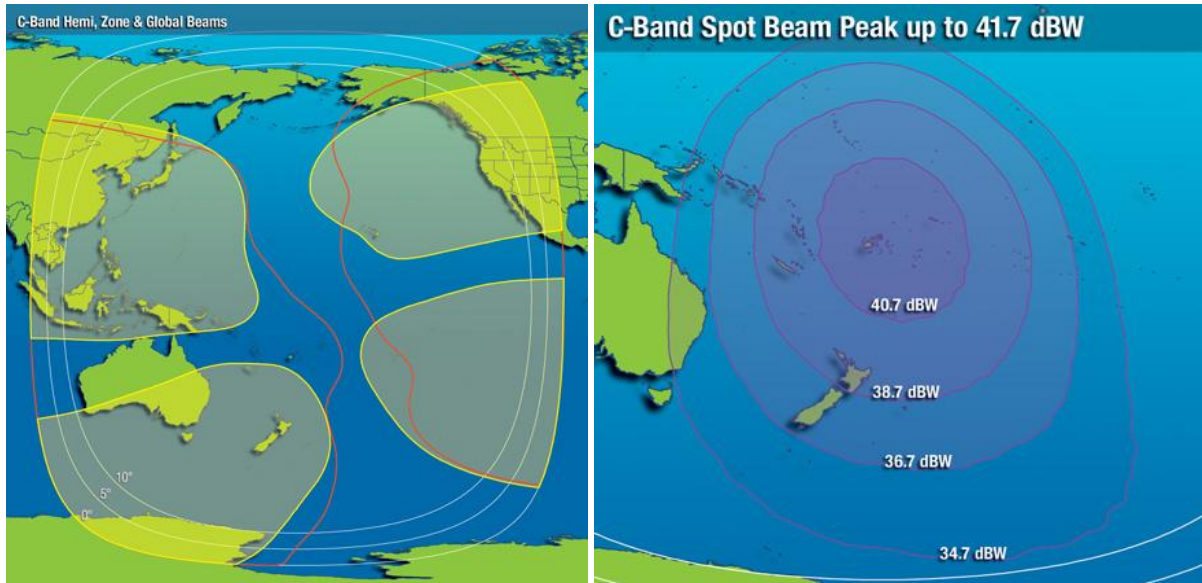
Frequency Bands C and Ku.

Transponder numbers: 26 C Band Ku 10

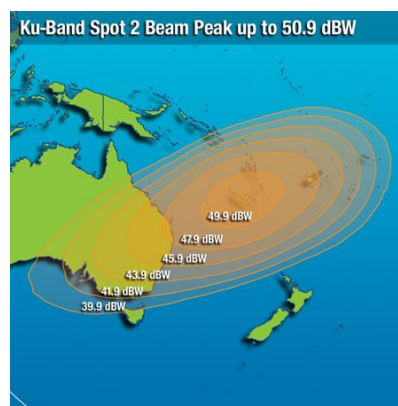
Channel Polarization C band circular / Ku Linear

Beam Patterns:

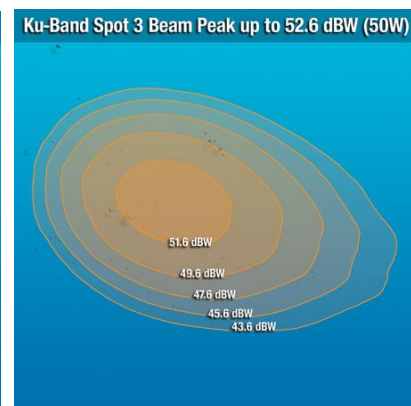
C band: Global, West Hemispheric, East Hemispheric, West North/South Zone East North /South Zone Spot Beam A Spot Beam B



Spot 1 over USA



Spot 2 over New Caledonia



Spot 3 over Tahiti

Intelsat IS18

Orbital location 180 degrees East

Launched 05 October 2011

Type of satellite STAR-2 spacecraft platform

Stabilization: 3 Axis

Inclination: 0.050 degrees

Launch weight: 3,200 kg (7,055 lb.)

Mass in orbit: 1900 Kg

Design lifetime: 15years

Dimensions: 71.5 Ft Wingspan 13.8 Ft Height

Power plant Two 4840 W-Hr capacity Li-Ion batteries

Antenna: 2.5x2.7 m single shell super-elliptical

Solar Arrays: Four panels per array, UTJ Gallium Arsenide

C-band 24 active transponders with two groups of 16-for-12 redundant TWTA's

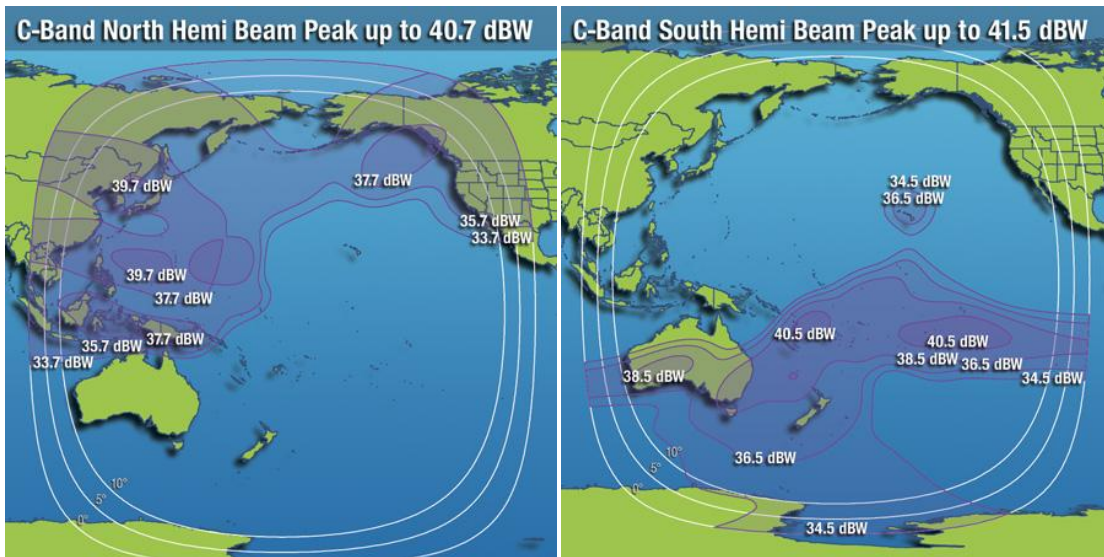
Ku-band 12 active transponders with two groups of 8-for-6 TWTA's



Mission Description

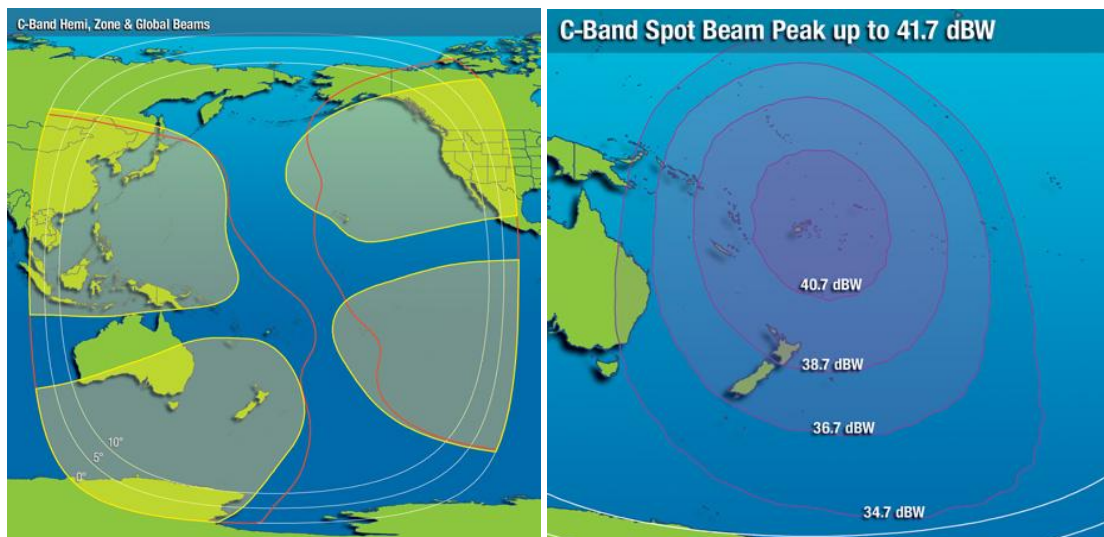
Intelsat 18 satellite will carry a hybrid payload and will be located at an orbital slot at 180 degrees East Longitude. The satellite's C-band payload will serve Eastern Asia, the Western Pacific and North America. The Ku-band payload will serve North America, French Polynesia, Cook Islands, Australia, New Zealand, New Caledonia, Vanatu, Fiji, Tonga, Samoa and other islands

Comparison of IS701 C band downlink beam patterns to those of IS18



Replaces C band Hemi and Zone beams

Replaces C band Spot on 701

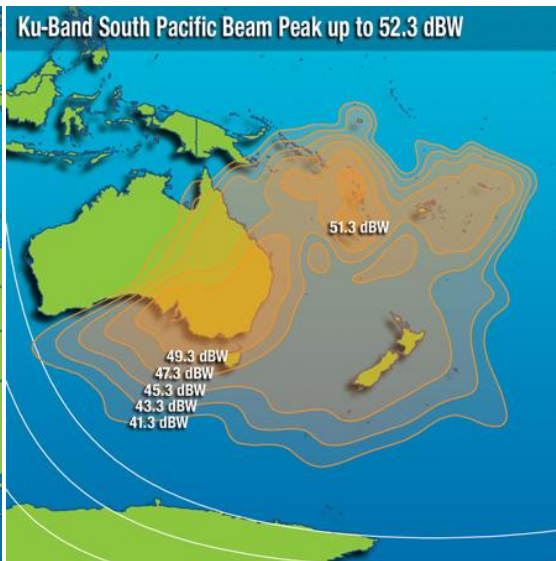
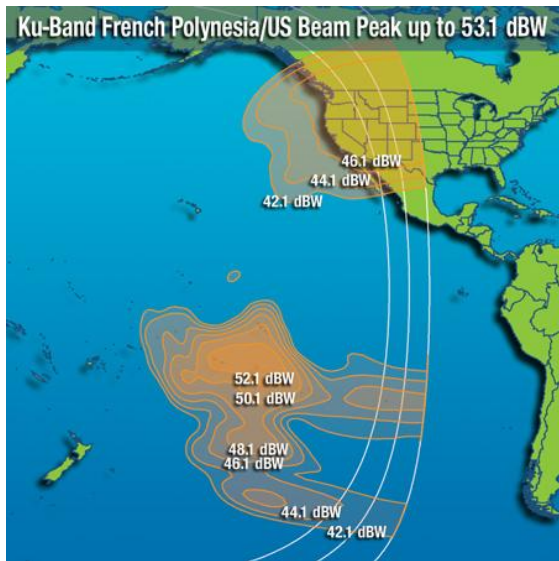


Both satellites have global beam downlink as illustrated

IS701's global beam edge EIRP value is 26 dbw to 34 dbw in the bore site.

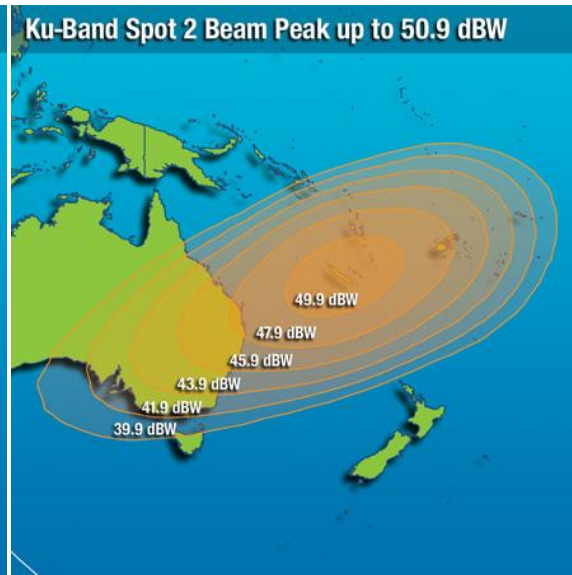
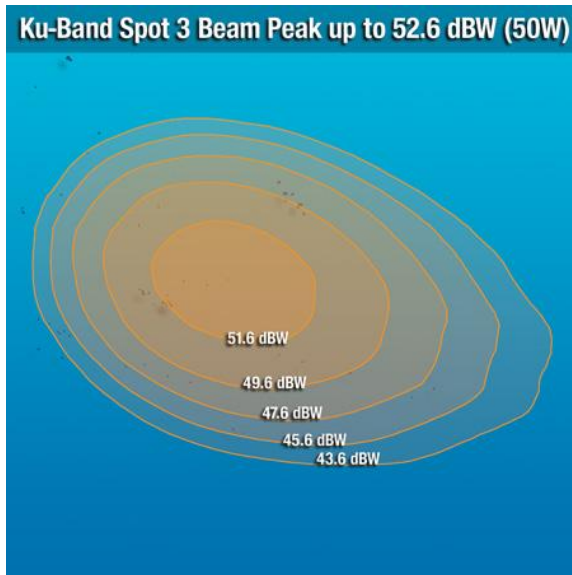
IS18 global beam edge EIRP value is 32dbw to 35dbw in the bore site

Comparison of IS701 Ku downlink beam patterns to those of IS18



Replaces Ku spot 3 centered on Tahiti

Replaces Ku spot 2 centered on New Caledonia





The New Caledonian spot beam covers New Zealand for the first time with a signal strength of 46 dbw. The signal covers the whole of New Zealand evenly so there should be no dramatic increases in receive dish size for any service that uses this down link beam pattern.

EIRP (Dbw)	EIRP V DISH SIZE				
	C/N RATIO (Db) For Ku Systems				
	6	8	10	12	14
	ANTENNA DIAMETERS (cm)				
50	30	38	48	60	67
49	34	42	53	67	76
48	38	48	60	76	85
47	42	53	67	85	95
46	48	60	76	95	1.07
45	53	67	85	1.07	1.34
44	60	76	95	1.20	1.51
43	67	85	1.07	1.34	1.69
42	76	95	1.20	1.51	1.90

EIRP (Dbw)	EIRP V DISH SIZE				
	C/N RATIO (Db) For C Band Systems				
	6	8	10	12	14
	ANTENNA DIAMETERS (cm)				
40	64	80	1.01	1.27	1.60
39	72	90	1.14	1.43	1.80
38	80	1.01	1.27	1.60	2.02
37	90	1.14	1.43	1.80	2.26
36	1.01	1.27	1.60	2.02	2.54
35	1.14	1.43	1.80	2.26	2.85
34	1.27	1.60	2.02	2.54	3.20

33	1.43	1.80	2.26	2.85	3.59
32	1.60	2.02	2.54	3.20	4.01













C band services receivable in New Zealand








4055 L tp 185		Sky Pacific	A P	DVB-S Nagravision	16500-2/3	South hemi 32.00
4095 L tp 186		Sky Pacific	A P	DVB-S Nagravision	16500-2/3	South hemi 32.00







4174 L tp 88		American Forces Network	A U	DVB-S	3680-2/3	Global beam 26.00
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Ku Services now receivable in New Zealand

	Canal + Cinéma France	A	MPEG-4 Mediaguard 2	2005	164	96 F	Ku Band South pacific Beam
	Cine + Frisson	A	MPEG-4 Mediaguard 2	2006	.65	101 F	
	Cine + Émotion		MPEG-4 Mediaguard 2	2007	166	104 F	
	Seasons (09.30-21.30)	A	MPEG-4 Mediaguard 2	2009	168	112 F	
	Cine + Famiz	A	MPEG-4 Mediaguard 2	2010	169	116 F	Ku Band South pacific Beam
	Téva	A	MPEG-4 Mediaguard 2	2011	170	120 F	
	Planète + Thalassa (20-02)	A	MPEG-4 Mediaguard 2	2012	181	384 F	
	Trace Urban Français (21.30-09.30)	A	MPEG-4 Mediaguard 2	2013	168	112 F	

	MCM Top	A	MPEG-4 Mediaguard 2	2014	173	132 F	
	TF1	A	MPEG-4 Mediaguard 2	2015	174	136 F	
	Canal + Sport France	A	MPEG-4 Mediaguard 2	2016	175	140 F	
	TiJi (05-20)	A	MPEG-4 Mediaguard 2	2017	176	144 F	
	Planète + No Limit (20-04)	A	MPEG-4 Mediaguard 2	2018	176	144 F	
	Eurosport 2	A	MPEG-4 Mediaguard 2	2019	178	152 E	
	Syfy Universal France	A	MPEG-4 Mediaguard 2	2020	179	156 F	
	InfoSport +	A	MPEG-4 Mediaguard 2	2021	181	384 F	
	13ème Rue	A	MPEG-4 Mediaguard 2	2024	184	396 F	
	Histoire	A	MPEG-4 Mediaguard 2	2025	185	400 F	
	Eurosport France	A	MPEG-4/HD Mediaguard 2	2026	186	406 F	
	National Geographic Channel HD France	A	MPEG-4/HD Mediaguard 2	2027	187	410 F	Ku Band South pacific Beam
	Nouvelle Calédonie 1ère		MPEG-4 Mediaguard Viaccess		303	403 F	
	Cine + Premier	A	MPEG-4 Mediaguard 2	7000	160	80 F 81 orig	
	TCM France	A	MPEG-4 Mediaguard 2	7001	161	84 F 85 orig	
	MCM Pop	A	MPEG-4 Mediaguard 2	7002	162	88 F	
	RTL 9 (12-02)	A	MPEG-4 Mediaguard 2	7003	162	88 F	
	Planète +	A	MPEG-4 Mediaguard 2	7004	164	96 F	

	Disney Channel France	A	MPEG-4 Mediaguard 2	7005	165	100 F	
	Gulli (06-18)	A	MPEG-4 Mediaguard 2	7006	173	132 F	
	Voyage (18.00-22.30)	A	MPEG-4 Mediaguard 2	7007	167	108 F	
	XXL (22.30-04.00)	A	MPEG-4 Mediaguard 2	7008	168	112 F	
	Canal + Calédonie	A	MPEG-4 Mediaguard 2	7009	166	106 F 107 orig	
	I>Télé	A S	MPEG-4 Mediaguard 2	7010	170	119 F	
	National Geographic Channel France (18-02)	A	MPEG-4 Mediaguard 2	7011	171	124 F	
	LCI	A	MPEG-4 Mediaguard 2	7014	174	136 F	
	TV 5 Monde Pacifique	A	MPEG-4 Mediaguard 2	7015	175	140 F	Ku Band South pacific Beam
	W9	A	MPEG-4 Mediaguard 2	7019	177	148 F	
	M6	A	MPEG-4 Mediaguard 2	7020	179	156 F	
	Motors TV	A	MPEG-4 Mediaguard 2	7021	162	88 F	
	Sport + (17.30-13.00)	A	MPEG-4 Mediaguard 2	7022	180	150 F	
	L'Équipe TV (13.00-17.30)	A	MPEG-4 Mediaguard 2	7022	180	150 F	
	TMC	A	MPEG-4 Mediaguard 2	7025	178	152 F	
	Canal + Family (France)	A	MPEG-4 Mediaguard 2	7030	190	380 F 381 orig	
	Comédie +	A	MPEG-4 Mediaguard 2	7033	163	92 F	
	TF1	A	MPEG-4/HD Mediaguard 2	7035	172	130 F	

	Cuisine TV (France)	A	MPEG-4 Mediaguard 2	7036	171	124 F
	Seasons (09.30-21.30)	A	MPEG-4 Mediaguard 2	7037	176	144 F
	Europe 1	A S	Mediaguard 2	7016		239 F
	France Info	A S F		7026		237 F
	RFM (France)	A S	Mediaguard 2	7027		240 F
	Jazz Radio	A S	Mediaguard 2	7028		242 F

Ku Band South pacific Beam		France TV	A	DVB-S2	30000-3/4 QPSK	
		Nouvelle Calédonie 1ère		MPEG-4 Mediaguard Viaccess	303	403 F
		Wallis et Futuna 1ère		MPEG-4 Mediaguard Viaccess	304	404 F
		France 24 Français	A S	MPEG-4 Mediaguard Viaccess	341	441 F
		France 2	A	MPEG-4 Mediaguard Viaccess	370	470 F
		France 3 Sat	A	MPEG-4 Mediaguard Viaccess	371	471 F
		France 4	A	MPEG-4 Mediaguard Viaccess	372	472 F
		France 5	A	MPEG-4 Mediaguard Viaccess	373	473 F
		ARTE Français	A	MPEG-4 Mediaguard Viaccess	374	474 F
		France Ô	A	MPEG-4 Mediaguard Viaccess	375	475 F
		Radio Ô	A S	Mediaguard Viaccess		490 F
		Radio Nouvelle Calédonie	A S	Mediaguard Viaccess		503 F
	Le Mouv'	A S	Mediaguard Viaccess		506 F	
	Radio France Internationale	A	Mediaguard Viaccess		507 F	

	France Info	A S	Mediaguard Viaccess		508 F
	France Culture	A S	Mediaguard Viaccess		509 F
	France Inter	A S	Mediaguard Viaccess		510 F
	Radio Wallis & Futuna	S	Mediaguard Viaccess		524

Ku Band South pacific Beam	Eurosport Pacific	A	Irdeto 2	201	512	640 E
	AXN East Asia	A	Irdeto 2	202	513	641 E
	[FYI info card]		Irdeto 2	203	514	642 E
	National Geographic Channel Australia & New Zealand	A	Irdeto 2	204	515	643 E
	Nickelodeon SE Asia	A	Irdeto 2	205	516	644 E
	Australia Network Pacific	A	Irdeto 2	206	517	645 E
	Al Jazeera English	A S	Irdeto 2	207	518	646 E
	SET SE Asia	A	Irdeto 2	208	519	647 E
	SET Asia	A	Irdeto 2	209	520	648 Hi
	Zee TV Asia Pacific	A	Irdeto 2	210	521	649 Hi
	AXN Beyond Asia	A	Irdeto 2	211	522	650 E
	Imagine TV (India)	A	Irdeto 2	212	523	651 Hi
	Colors	A	Irdeto 2	213	524	652 Hi
	EWTN Pacific Rim	A S	Irdeto 2	214	525	653 E
	BBC World Service	A	Irdeto 2	301		660
The Goanna	A S	Irdeto 2	302		661	