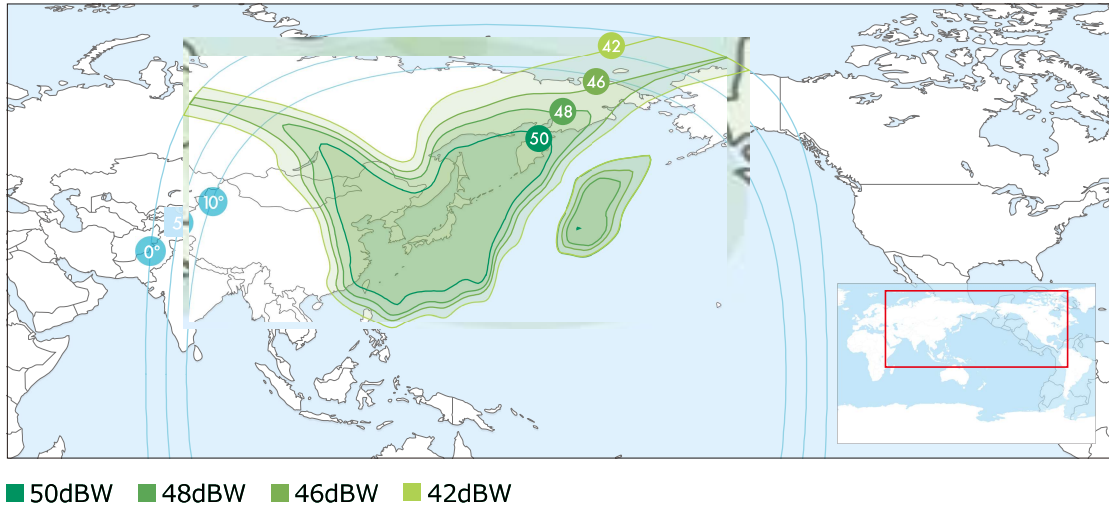




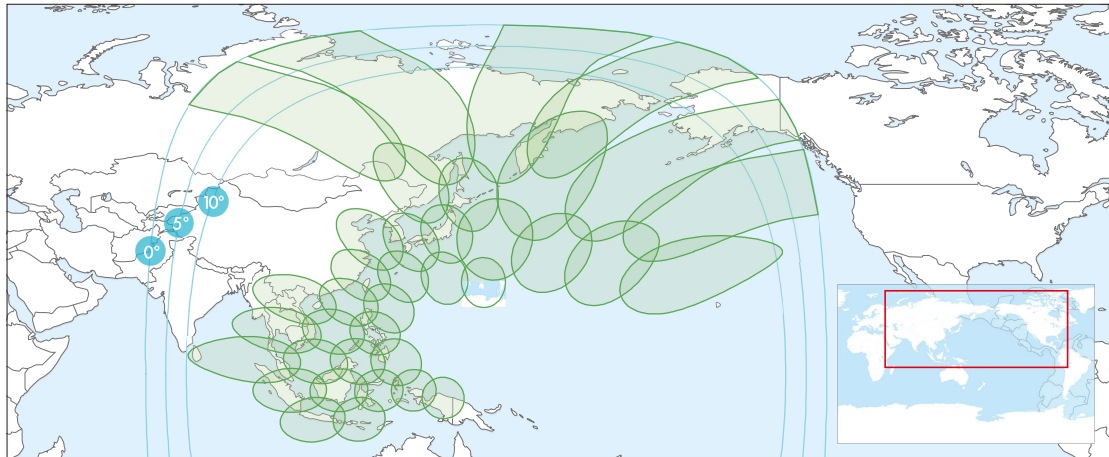
JCSAT-1C

Coverage Area

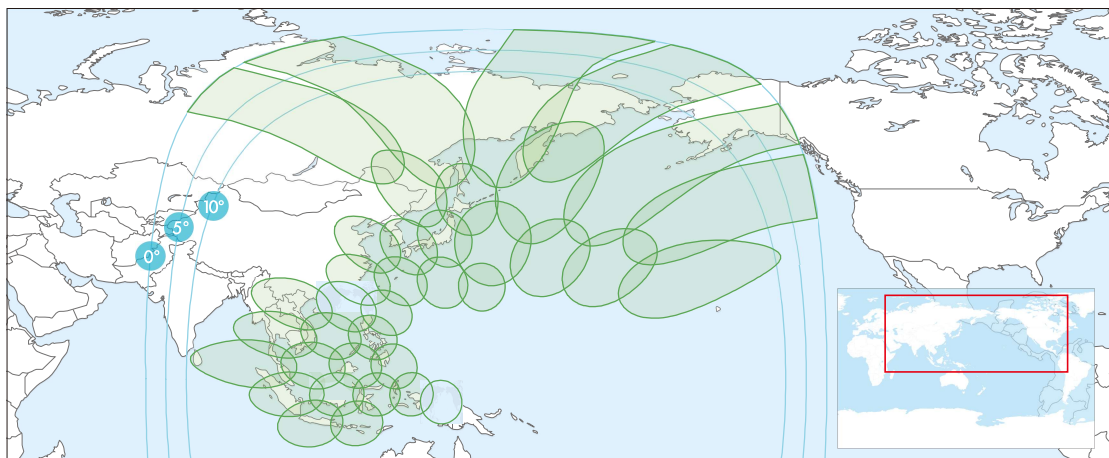
Ku-band NEA Beam EIRP



Ku-band HTS Spot Beams Uplink Coverage



Ku-band HTS Spot Beams Downlink Coverage

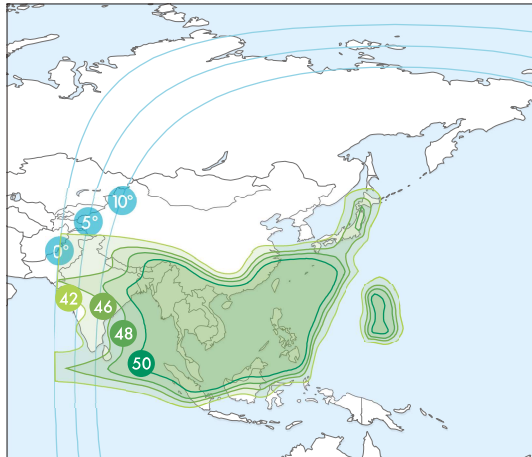




JCSAT-1C

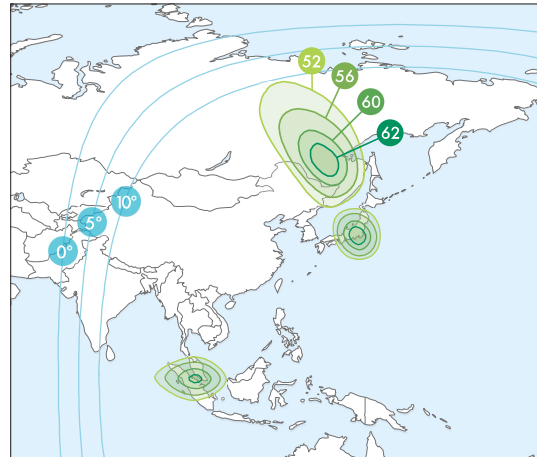
Coverage Area

Ku-band SEA Beam EIRP



■ 50dBW ■ 48dBW ■ 46dBW ■ 42dBW

Ka-band Gateway Beams EIRP



■ 62dBW ■ 60dBW ■ 56dBW ■ 52dBW

Orbital Position

150°E

Launch Date(Japan Time)

December 17, 2019

Launch Vehicle

Falcon9

Satellite Bus

Boeing 702MP

Frequency Band

Ku-Band Ka-Band

HPA-Output

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JCSAT-1C

KU ANTENNA

Revision 0: 12/14/19

Forward Link Budget

Hub	Yokohama
Required Eb/No	4.2 dB
Modulation	4-PSK
Info Rate	47,335 Kbps
FEC Rate	0.726
Carrier Rolloff	1.1
Satellite SFD @ 2 dB/K	-70.2 dBW/m ²
Transponder Atten	0 dB
Transponder ID	

Hub Transmit

Frequency	27.187 GHz
Satellite G/T	17.8 dB/°K
Antenna Diameter	13 m
Carrier EIRP	64.18 dBW
Ant. Input PFD	-27.24 dBW/4kHz
Path Loss	212.56 dB
Atm/Point/Pol Loss	0.11 dB

Aircraft Receive

Terminal

Frequency	12.437 GHz
Satellite EIRP	54.9 dBW
Downlink PFD@ Beam Center	12.22 dBW/4kHz
Receive Gain	68.8 dB
Terminal G/T	11.78 dB/°K
Path Loss	205.66 dB
Other Losses	0.04 dB

Transponder

Total OPBO	3.50 dB
Carrier OPBO	8.17 dB
C/No Thermal Up	97.59 dB-Hz
C/No Thermal Dn	80.92 dB-Hz
C/Io Total	85.74 dB-Hz
C/No+Io	79.61 dB-Hz
Add'l Link Margin	0.28 dB
% BW per cxx	33.83 %
% Power per cxx	34.15 %
Xpdr BW Alloc	36.19 MHz

Return Link Budget

Terminal	Aerosat Ku Remote
Required Eb/No	5.5 dB
Modulation	4-PSK
Info Rate	2,781.2 Kbps
FEC Rate	0.679
Carrier Spacing	1.2
Carrier Spreading	1.2
Satellite SFD @ 2 dB/K	-73.5 dBW/m ²
Transponder Atten	0 dB
Transponder ID	

Aircraft Transmit

Terminal

Frequency	14.094 GHz
Satellite G/T	8.5 dB/°K
Antenna Diameter	0.4 m
Carrier EIRP	40.79 dBW
Ant Input PFD	-15.3 dBW/4kHz
Path Loss	206.74 dB
Atm/Point/Pol Loss	0.05 dB

Hub Receive

Frequency	17.794 GHz
Satellite EIRP	62.9 dBW
Downlink PFD@ Beam Center	-1.75 dBW/4kHz
Hub G/T	48.54 dB/°K
Path Loss	208.88 dB
Other Losses	0.22 dB

Transponder

Total OPBO	3.50 dB
Carrier OPBO	37.56 dB
C/No Thermal Up	70.60 dB-Hz
C/No Thermal Dn	92.88 dB-Hz
C/Io Total	73.26 dB-Hz
C/No+Io	68.71 dB-Hz
Add'l Link Margin	0.09 dB
% BW per cxx	4.73 %
% Power per cxx	0.04 %
Xpdr BW Alloc	2.45 MHz

JCSAT-1C

2KU ANTENNA

Revision 0: 12/14/19

Forward Link Budget

Hub	Yokohama
Required Eb/No	5.2 dB
Modulation	4-PSK
Info Rate	52,681 Kbps
FEC Rate	0.808
Carrier Rolloff	1.1
Satellite SFD @ 2 dB/K	-70.2 dBW/m ²
Transponder Atten	0 dB
Transponder ID	

Hub Transmit

Frequency	27.187 GHz
Satellite G/T	17.8 dB/°K
Antenna Diameter	13 m
Carrier EIRP	64.18 dBW
Ant. Input PFD	-43.73 dBW/4kHz
Path Loss	212.56 dB
Atm/Point/Pol Loss	0.43 dB

Aircraft Receive

Terminal

Frequency	12.437 GHz
Satellite EIRP	54.9 dBW
Downlink PFD@ Beam Center	12.22 dBW/4kHz
Receive Gain	68.8 dB
Terminal G/T	13.98 dB/°K
Path Loss	205.66 dB
Other Losses	0.04 dB

Transponder

Total OPBO	3.50 dB
Carrier OPBO	8.17 dB
C/No Thermal Up	97.59 dB-Hz
C/No Thermal Dn	83.12 dB-Hz
C/Io Total	85.74 dB-Hz
C/No+Io	81.13 dB-Hz
Add'l Link Margin	0.79 dB
% BW per cxx	33.83 %
% Power per cxx	34.15 %
Xpdr BW Alloc	36.19 MHz

Return Link Budget

Terminal	Thinkom 2Ku Remote
Required Eb/No	7.8 dB
Modulation	16-PSK
Info Rate	3,719.2 Kbps
FEC Rate	0.454
Carrier Spacing	1.2
Carrier Spreading	1.2
Satellite SFD @ 2 dB/K	-73.5 dBW/m ²
Transponder Atten	0 dB
Transponder ID	

Aircraft Transmit

Terminal

Frequency	14.094 GHz
Satellite G/T	8.5 dB/°K
Antenna Diameter	0.6 m
Carrier EIRP	45.11 dBW
Ant Input PFD	-18.48 dBW/4kHz
Path Loss	206.74 dB
Atm/Point/Pol Loss	0.05 dB

Hub Receive

Frequency	17.794 GHz
Satellite EIRP	62.9 dBW
Downlink PFD@ Beam Center	-1.75 dBW/4kHz
Hub G/T	47.36 dB/°K
Path Loss	208.88 dB
Other Losses	0.22 dB

Transponder

Total OPBO	3.50 dB
Carrier OPBO	33.24 dB
C/No Thermal Up	74.92 dB-Hz
C/No Thermal Dn	96.02 dB-Hz
C/Io Total	73.26 dB-Hz
C/No+Io	70.99 dB-Hz
Add'l Link Margin	0.08 dB
% BW per cxx	4.73 %
% Power per cxx	0.11 %
Xpdr BW Alloc	2.45 MHz