

Exhibit Contains:

Certification by Intellian that the V80e antenna complies with §25.218(f) and will maintain a pointing error of less than or equal to 0.5 degrees.

Certification by Intellian that the V100NX antenna complies with §25.218(f) and will maintain a pointing error of less than or equal to 0.5 degrees.

Certification by Intellian that the V130NX antenna complies with §25.218(f) and will maintain a pointing error of less than or equal to 0.5 degrees.

Certification by Intellian that the V240MTKU and V240MTKA antennas comply with §25.218(f) and (i) respectively and will maintain a pointing error of less than or equal to 0.5 degrees.

Certification by Intellian that the V240MTGen2KU and V240MTGen2KA antennas comply with §25.218(f) and (i) respectively and will maintain a pointing error of less than or equal to 0.5 degrees.

Certification by Sea Tel that the 2400KU and 2400KA antennas comply with §25.218(f) and (i) respectively and will maintain a pointing error of less than or equal to 0.2 degrees.

Certification by Marlink pursuant to §25.132(a)(1) that the off-axis gain of the 2400KA antenna will not exceed the relevant levels specified in §25.209(a) and (b) and that the power spectral density of any digitally modulated carrier into any transmitting Ka-band earth station antenna in the network will not exceed 3.5 dBW/MHz as specified in §25.212(e). (Note- this certification is for both §25.115(c)(3)(i)(A) and §25.115(g)(2).)

Certification by Marlink and Intellian pursuant to §25.132(a)(1) that the off-axis gain of the V130NX antenna will not exceed the relevant levels specified in §25.209(a) and (b) and that the power spectral density of any digitally modulated carrier into any transmitting Ku-band earth station antenna in the network will not exceed 3.5 dBW/MHz as specified in §25.212(c)(2).

Certification by Marlink that the aggregate off-axis EIRP density from all Marlink Ku-band ESV network co-frequency earth stations transmitting simultaneously to the same target satellite receiving beam, not resulting from colliding data bursts transmitted pursuant to a contention protocol, will not exceed the off-axis EIRP density limits permissible for a single earth station, as specified in §25.218 (f)(1) through (f)(3) and that its variable-power transmitters are capable of automatically ceasing or reducing emissions within 100 milliseconds of receiving a command to do so from Marlink's network control and monitoring center, if the aggregate off axis EIRP densities of the transmitter or transmitters exceed the off-axis EIRP density limits specified in §25.218(f)(1) through (f)(3).

Certification by Marlink that if it does use variable power density control of

earth stations transmitting simultaneously in shared frequencies to the same target satellite receiving beam for its Ka-band network Marlink will ensure that the aggregate off-axis EIRP density from all Marlink Ka-band ESV network co-frequency earth stations transmitting simultaneously to the same target satellite receiving beam, not resulting from colliding data bursts transmitted pursuant to a contention protocol, will not exceed the off-axis EIRP density limits permissible for a single earth station, as specified in §25.218 (i)(1) through (i)(4) and that its variable-power transmitters are capable of automatically ceasing or reducing emissions within 100 milliseconds of receiving a command to do so from Marlink's network control and monitoring center, if the aggregate off axis EIRP densities of the transmitter or transmitters exceed the off-axis EIRP density limits specified in §25.218(i)(1) through (i)(4).

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FCC Declaration of Conformity

Intellian Technologies, manufactures of stabilized maritime VSAT antenna systems for satellite communication at sea, supplies stabilized maritime VSAT antenna systems to the satellite communication service providers for their ESV (Earth Station on Vessels) networks.

FCC §25.218 defines the provisions for blanket licensing of ESV antennas operation in the Ku-band. It defines the antennas radiation, and each article regulates the followings;

- §25.218 (f)(1): Regulation for Azimuth Direction & Co Polarization
- §25.218 (f)(2): Regulation for Other Direction & Co Polarization
- §25.218 (f)(3): Regulation for Cross Polarization

Intellian Technologies, Inc. declares that v80E complies with the threshold level as defined in §25.218(f)(1);, and declares that v80E is in accordance with all defined regulations from §25.218(f)(2) to §25.218(f)(3) at the below stated input power spectral density, with an N value of 1.

Product description	Intellian v80E, 80cm Ku-band maritime VSAT antenna system
EIRP spectral density limit	-18.8 dBW/ 4KHz

Intellian Technologies, Inc. declares that the above antennas will automatically cease the transmission with a mute command to the modem within 100 milliseconds if the target satellite and the axis of the main lobe of the ESV antenna exceeds 0.5 degree and will not resume until such angle is less than or equal to 0.2 degree in accordance with the requirements of §25.228 (b) and §25.228 (c).

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Radiation pattern data is available upon request to verify the conformance.

Authority: Kevin Eom
/ CTO, R&D

Signature: _____



Date: _____ March 3, 2020

FCC Declaration of Conformity

Intellian Technologies, manufactures of stabilized maritime VSAT antenna systems for satellite communication at sea, supplies stabilized maritime VSAT antenna systems to the satellite communication service providers for their ESV (Earth Station on Vessels) networks.

FCC §25.218 defines the provisions for blanket licensing of ESV antennas operation in the Ku-band. It defines the antennas radiation, and each article regulates the followings;

- §25.218 (f)(1): Regulation for Azimuth Direction & Co Polarization
- §25.218 (f)(2): Regulation for Other Direction & Co Polarization
- §25.218 (f)(3): Regulation for Cross Polarization

Intellian Technologies, Inc. declares that v100NX complies with the threshold level as defined in §25.218(f)(1);, and declares that v100NX is in accordance with all defined regulations from §25.218(f)(2) to §25.218(f)(3) at the below stated input power spectral density, with an N value of 1.


Product description	Intellian v100NX, 105cm Ku-band maritime VSAT antenna system
EIRP spectral density limit	-16.95 dBW/ 4KHz

Intellian Technologies, Inc. declares that the above antennas will automatically cease the transmission with a mute command to the modem within 100 milliseconds if the target satellite and the axis of the main lobe of the ESV antenna exceeds 0.5 degree and will not resume until such angle is less than or equal to 0.2 degree in accordance with the requirements of §25.228 (b) and §25.228 (c).

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Radiation pattern data is available upon request to verify the conformance.

Authority: Kevin Eom
/ CTO, R&D

Signature:  _____



Date: _____ February 24, 2020

FCC Declaration of Conformity

Intellian Technologies, manufactures of stabilized maritime VSAT antenna systems for satellite communication at sea, supplies stabilized maritime VSAT antenna systems to the satellite communication service providers for their ESV (Earth Station on Vessels) networks.

FCC §25.218 defines the provisions for blanket licensing of ESV antennas operation in the Ku-band. It defines the antennas radiation, and each article regulates the followings;

- §25.218 (f)(1): Regulation for Azimuth Direction & Co Polarization
- §25.218 (f)(2): Regulation for Other Direction & Co Polarization
- §25.218 (f)(3): Regulation for Cross Polarization

Intellian Technologies, Inc. declares that v130NX complies with the threshold level as defined in §25.218(f)(1);, and declares that v130NX is in accordance with all defined regulations from §25.218(f)(2) to §25.218(f)(3) at the below stated input power spectral density, with an N value of 1.


Product description	Intellian v130NX, 125cm Ku-band maritime VSAT antenna system
EIRP spectral density limit	-14.0 dBW/ 4KHz

Intellian Technologies, Inc. declares that the above antennas will automatically cease the transmission with a mute command to the modem within 100 milliseconds if the target satellite and the axis of the main lobe of the ESV antenna exceeds 0.5 degree and will not resume until such angle is less than or equal to 0.2 degree in accordance with the requirements of §25.228 (b) and §25.228 (c).

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Radiation pattern data is available upon request to verify the conformance.

Authority: Kevin Eom
/ CTO, R&D

Signature:  _____



Date: _____ February 27, 2020

FCC Declaration of Conformity

Intellian Technologies, manufactures of stabilized maritime VSAT antenna systems for satellite communication at sea, supplies stabilized maritime VSAT antenna systems to the satellite communication service providers for their ESV (Earth Station on Vessels) networks.

FCC §25.218 defines the provisions for blanket licensing of ESV antennas operation in the C-, Ku- and Ka-band. It defines the antennas radiation, and each article regulates the followings;

- §25.218 (d)(1): Regulation for Azimuth Direction & Co Polarization in the C-band
- §25.218 (d)(2): Regulation for Other Direction & Co Polarization in the C-band
- §25.218 (d)(3): Regulation for Cross Polarization in the C-band

- §25.218 (f)(1): Regulation for Azimuth Direction & Co Polarization in the Ku-band
- §25.218 (f)(2): Regulation for Other Direction & Co Polarization in the Ku-band
- §25.218 (f)(3): Regulation for Cross Polarization in the Ku-band

- §25.218 (i)(1)&(3): Regulation for Azimuth Direction & Co Polarization in the Ka-band
- §25.218 (i)(2)&(3): Regulation for Other Direction & Co Polarization in the Ka-band
- §25.218 (i)(4): Regulation for Cross Polarization in the Ka-band

Intellian Technologies, Inc. declares that v240MT complies with the threshold level as defined in §25.218(d)(1), §25.218(f)(1) and §25.218(i)(1)&(3);, and declares that v240MT is in accordance with all defined regulations from §25.218(d)(2) to §25.218(d)(3), §25.218(f)(2) to §25.218(f)(3) and §25.218(i)(2)&(3) to §25.218(i)(4) at the below stated input power spectral density, with an N value of 1

Product description	Intellian v240MT, 2.4m C/Ku/Ka-band VSAT antenna system	
EIRP spectral density limit	C-Band	-7.43 dBW/ 4KHz
	Ku-band	-18.37 dBW/ 4KHz
	Ka-band	+0.02 dBw/ MHz

Intellian Technologies, Inc. declares that the above antennas will automatically cease the transmission with a mute command to the modem within 100 milliseconds if the target satellite and the axis of the main lobe of the ESV antenna exceeds 0.5 degree and will not resume until such angle is less than or equal to 0.2 degree in accordance with the requirements of §25.228 (b) and §25.228 (c).

Radiation pattern data is available upon request to verify the conformance.

Authority: Steve Cha
/ CTO, R&D

Signature: _____ 



Date: _____ May 5, 2020

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FCC Declaration of Conformity

Intellian Technologies, manufactures of stabilized maritime VSAT antenna systems for satellite communication at sea, supplies stabilized maritime VSAT antenna systems to the satellite communication service providers for their ESV (Earth Station on Vessels) networks.

FCC §25.218 defines the provisions for blanket licensing of ESV antennas operation in the C-, Ku- and Ka-band. It defines the antennas radiation, and each article regulates the followings;

- §25.218 (d)(1): Regulation for Azimuth Direction & Co Polarization in the C-band
- §25.218 (d)(2): Regulation for Other Direction & Co Polarization in the C-band
- §25.218 (d)(3): Regulation for Cross Polarization in the C-band

- §25.218 (f)(1): Regulation for Azimuth Direction & Co Polarization in the Ku-band
- §25.218 (f)(2): Regulation for Other Direction & Co Polarization in the Ku-band
- §25.218 (f)(3): Regulation for Cross Polarization in the Ku-band

- §25.218 (i)(1)&(3): Regulation for Azimuth Direction & Co Polarization in the Ka-band
- §25.218 (i)(2)&(3): Regulation for Other Direction & Co Polarization in the Ka-band
- §25.218 (i)(4): Regulation for Cross Polarization in the Ka-band

Intellian Technologies, Inc. declares that v240MT Gen-II complies with the threshold level as defined in §25.218(d)(1), §25.218(f)(1) and §25.218(i)(1)&(3);, and declares that v240MT is in accordance with all defined regulations from §25.218(d)(2) to §25.218(d)(3), §25.218(f)(2) to §25.218(f)(3) and §25.218(i)(2)&(3) to §25.218(i)(4) at the below stated input power spectral density, with an N value of 1

Product description	Intellian v240MT Gen-II, 2.4m C/Ku/Ka-band VSAT antenna system	
EIRP spectral density limit	C-Band	-6.22 dBW/ 4KHz
	Ku-band	-15.69 dBw/ 4KHz
	Ka-band	+3.16 dBw/ MHz

Intellian Technologies, Inc. declares that the above antennas will automatically cease the transmission with a mute command to the modem within 100 milliseconds if the target satellite and the axis of the main lobe of the ESV antenna exceeds 0.5 degree and will not resume until such angle is less than or equal to 0.2 degree in accordance with the requirements of §25.228 (b) and §25.228 (c).

Radiation pattern data is available upon request to verify the conformance.

Authority: Steve Cha
/ CTO, R&D

Signature: _____ 



Date: _____ May 5, 2020

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FCC Declaration of Conformity

1. Sea Tel, Inc. designs, develops, manufactures and services marine stabilized antenna systems for satellite communication at sea. These products are in turn used by our customers as part of their C, Ku and Ka-band Earth Station on Vessels (ESV) networks.

2. FCC regulation 47 C.F.R. § 25.218 defines the Off-axis EIRP density envelopes for FSS earth stations transmitting in the C, Ku and Ka-band. This declaration covers the requirements for meeting § 25.218 (d), (f) and (i) by the demonstrations outlined in paragraphs § 25.115 (g)(1). The paragraph numbers in this declaration refer to the Oct, 2019 version of FCC 47 C.F.R. § 25.218 and § 25.115.

3. Sea Tel hereby declares that the antennas listed below will meet the off-axis EIRP spectral density requirements of § 25.218 (d), (f) and (i) when the following input power spectral density limitations, at the corresponding antenna feed flange, are met:

2.4 Meter C Band, Models SeaTel 2400 family are limited to -8.6 dBW/4kHz

2.4 Meter Ku Band, Models SeaTel 2400 family are limited to -15.5 dBW/4kHz

2.4 Meter Ka Band, Models SeaTel 2400 family are limited to 3.5 dBW/MHz

4. Sea Tel hereby declares that the antennas referenced in paragraph 3 above, will automatically cease transmission within 100 milliseconds if the stabilization error should exceed 0.1 degrees for C-Band and 0.2 degrees for Ku or Ka Band operation and will not resume transmission until the error drops below these thresholds. Furthermore, these pointing error thresholds are considered in the input power spectral density limits specified in paragraph 3 above thus fulfilling the requirements of § 25.228 (b).

5. Sea Tel maintains all relevant data, which is available upon request, to verify these declarations.



Rami Adada, Director of Technology
Sea Tel, Inc
Concord, CA



FCC §25.115(g)(2) Certification - SeaTel 2400 Ka-band Antenna

1. Marlink declares that the SeaTel 2400 Ka-band earth station antenna meets the stated relevant off-axis gain standards in §25.209(a) and (b) and that the input spectral density to the antenna will not exceed the relevant limit in §25.211 or §25.212.
2. This declaration that the antenna meets the stated relevant off-axis gain standards in §25.209(a) and (b), those being §25.209(a)(4) & (6) and (b)(3), based on review of the results of a series of radiation pattern tests performed by Cobham SATCOM on representative equipment in representative configurations measured in accordance with paragraph (b)(1) (i), (ii) and (iii) of §25.132. This radiation data is available upon request to verify the conformance.
3. Cobham SATCOM explained that Plots measured with max skew as described in §25.132(b)(1)(iv) were not prepared because, *“Although our antenna does not have a symmetric aperture, and given that we do not align the major axis with the plane tangent to the GEO arc, the data we have provided for both Az and EL (Major and Minor aperture axis) Gain and EIRPSD patterns shows compliance to the more stringent requirements of patterns in the plane tangent to the GEO arc. The requirement mentioned below is actually meant for antennas that are trying to get a relaxation in EIRPSD/Gain compliance for the plane with the minor axis. In our case the plane with the maximum skew the antenna may operate is 90 degrees meaning the elevation cut would be radiating in the plane tangent to the GEO arc (when operating at the equator) and as such the masks applied to our elevation patterns are those required for that type of operation (same as the mask applied for the Az cut).”*
4. This declaration that the input spectral density to the SeaTel 2400 Ka-band earth station antenna will not exceed the relevant limit in §25.211 or §25.212 is based on the fact that any digitally modulated carrier into any transmitting Ka-band earth station antenna in the Marlink network will not exceed the 3.5 dBW/MHz specified in §25.212(e).

DocuSigned by:

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Tore Morten Olsen

President Maritime
Lysaker, Norway


12.05.2020

Date



FCC §25.115(g)(2) Certification - Intellian V130NX Ku-Band Antenna

1. Marlink declares that the Intellian V130NX Ku-band earth station antenna meets the stated relevant off-axis gain standards in §25.209(a) and (b) and that the input spectral density to the antenna will not exceed the relevant limit in §25.211 or §25.212.
2. This declaration that the antenna meets the stated relevant off-axis gain standards in §25.209(a) and (b) is based on the attached certification by Intellian that the antenna's measured gain pattern conforms to relevant standards in §25.209(a) and (b), those being §25.209(a)(2) & (5) and (b)(1) & (2).
3. This declaration that the input spectral density to the V130NX Ku-band antenna will not exceed the relevant limit in §25.211 or §25.212 is based on the fact that any digitally modulated carrier into any transmitting Ku-band earth station antenna in the Marlink network will not exceed the -14 dBW/4 kHz specified in §25.212(c)(2).

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Tore Morten Olsen

President Maritime
Lysaker, Norway

12.05.2020

Date

FCC Declaration of Conformity

Intellian Technologies, manufactures of stabilized maritime VSAT antenna systems for satellite communication at sea, supplies stabilized maritime VSAT antenna systems to the satellite communication service providers for their ESV (Earth Station on Vessels) networks.

Intellian Technologies, Inc. declares that v130NX complies with the threshold level as defined in §25.209(a)(2)&(5), §25.209(b)(1)&(2).

§25.209 (a)(2)&(5)

The co-polarization gain of any earth station antenna operating in the FSS and transmitting to a GSO satellite, including earth stations providing feeder links for satellite services other than FSS, may not exceed the following limits:

§25.209 (a)(2)	29-25log θ	dBi	for $1.5^\circ \leq \theta \leq 7^\circ$.
	8	dBi	for $7^\circ < \theta \leq 9.2^\circ$.
	32-25log θ	dBi	for $9.2^\circ < \theta \leq 48^\circ$.
	-10	dBi	for $48^\circ < \theta \leq 180^\circ$.
§25.209 (a)(5)	32-25log θ	dBi	for $3.0^\circ < \theta \leq 19.1^\circ$.
	0	dBi	for $19.1^\circ < \theta \leq 180^\circ$.

§25.209 (b)(1)&(2)

The off-axis cross-polarization gain of any antenna used for transmission from an FSS earth station to a GSO satellite, including earth stations providing feeder links for satellite services other than FSS, may not exceed the following limits:

§25.209 (b)(1)	19-25log θ	dBi	for $1.8^\circ \leq \theta \leq 7^\circ$.
§25.209 (b)(2)	19-25log θ	dBi	for $3.0^\circ \leq \theta \leq 7.0^\circ$.

This certification is based upon review of the results of a series of radiation pattern tests performed by Intellian Technologies, Inc. on representative equipment in representative configurations, which test results demonstrate that the equipment meets the above stated relevant off-axis gain standards in §25.209, measured in accordance with paragraph (b)(1) of §25.132.

Radiation pattern data is available upon request to verify the conformance.

Authority: Kevin Eom
/ CTO, R&D



Signature: 

Date: February 27, 2020



FCC §25.218(f)(4) and §25.115(m)(3)(i) Certification

1. Marlink operates a Ku-band Earth Station on Vessels (ESV) network. This network uses variable power density control of earth stations transmitting simultaneously in shared frequencies to the same target satellite receiving beam.
2. §25.218(f)(1) through (f)(3) of the FCC regulations specify the off-axis EIRP density limits permissible for a digital earth station operating in the conventional Ku-band.
3. Marlink hereby certifies that the aggregate off-axis EIRP density from all Marlink Ku-band ESV network co-frequency earth stations transmitting simultaneously to the same target satellite receiving beam, not resulting from colliding data bursts transmitted pursuant to a contention protocol, will not exceed the off-axis EIRP density limits permissible for a single earth station, as specified in §25.218 (f)(1) through (f)(3).
4. Marlink further certifies that its variable-power transmitters are capable of automatically ceasing or reducing emissions within 100 milliseconds of receiving a command to do so from Marlink's network control and monitoring center, if the aggregate off axis EIRP densities of the transmitter or transmitters exceed the off-axis EIRP density limits specified in §25.218(f)(1) through (f)(3).

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Tore Morten Olsen

President Maritime
Lysaker, Norway

12.05.2020

Date



FCC §25.218(i)(5) and §25.115(n)(3)(i) Certification

1. Marlink is developing a Ka-band Earth Station on Vessels (ESV) network. It has not yet been determined whether the network will use variable power density control of earth stations transmitting simultaneously in shared frequencies to the same target satellite receiving beam.
2. §25.218(i)(1) through (i)(4) of the FCC regulations specify the off-axis EIRP density limits permissible for a digital earth station operating in the conventional Ka-band.
3. Marlink hereby certifies that if it does use variable power density control of earth stations transmitting simultaneously in shared frequencies to the same target satellite receiving beam for its Ka-band network Marlink will ensure that the aggregate off-axis EIRP density from all Marlink Ka-band ESV network co-frequency earth stations transmitting simultaneously to the same target satellite receiving beam, not resulting from colliding data bursts transmitted pursuant to a contention protocol, will not exceed the off-axis EIRP density limits permissible for a single earth station, as specified in §25.218 (i)(1) through (i)(4).
4. Marlink further certifies that its variable-power transmitters are capable of automatically ceasing or reducing emissions within 100 milliseconds of receiving a command to do so from Marlink's network control and monitoring center, if the aggregate off axis EIRP densities of the transmitter or transmitters exceed the off-axis EIRP density limits specified in §25.218(i)(1) through (i)(4).

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Tore Morten Olsen

President Maritime
Lysaker, Norway

12.05.2020

Date