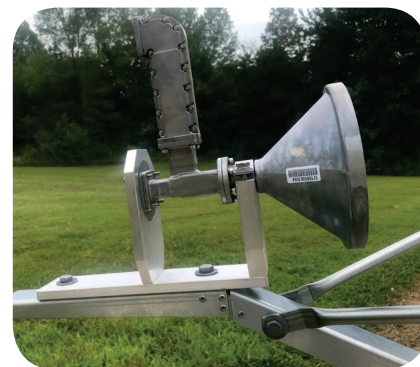
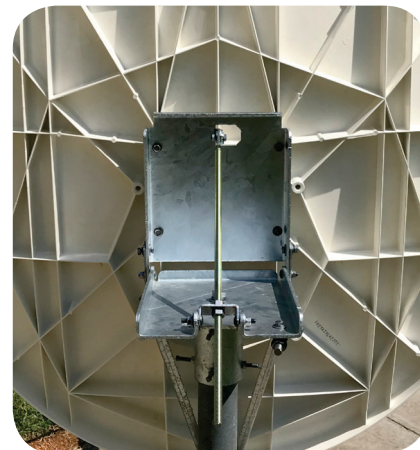


# 1.2M Ku-Band Antenna - Receive Transmit

*Series 1134*



Transmit Quality Precision SMC Reflector

Fine Elevation and Azimuth Adjustments

Available with a variety of feed and feed support options

Long Focal Length Optics for Low Cross-Pol

Durable and Rugged Construction for Ease of  
Shipping and Handling

Heavy Gauge Galvanized Steel Az/EI Mount

Tier 3 Feed Support for larger RF packages

Optional Feed Stabilizer for heavy RF equipment

## Overview

General Dynamics SATCOM Technologies' 1.2m Ku-Band VSAT Antenna Series 1134 is ideally suited for demanding commercial applications. The one-piece compression molded reflector is precision manufactured for high-efficiency Ku-Band operation. The Az/EI mount is designed for easy installation on standard 2-7/8" OD Installation Mounts, and features fine Azimuth and Elevation Adjustments. The Az/EI mount is constructed from heavy gauge galvanized steel for strength and corrosion resistance.

# 1.2M Ku-Band Antenna - Receive Transmit

## Electrical

- **Antenna Size**
  - 1.2m (48 in.)
- **Operating Frequency (GHz)**
  - Receive = 10.70-12.75 GHz
  - Transmit = 13.75-14.50 GHz
- **Midband Gain (+/- .3 dBi)**
  - Receive = 41.5 dB
  - Transmit = 43.0 dB
- **Antenna Noise Temperature**
  - 20° Elevation = 46°K
  - 30° Elevation = 43°K
- **Antenna Sidelobe Envelope**
  - Per ITU-R S.580-6
- **Antenna Beamwidth**
  - Receive = 1.5°
  - Transmit = 1.2°
- **Polarization**
  - Linear, Orthogonal
- **Cross-Pol Isolation**
  - 30 dB on Axis
  - 26 dB in 1 dB Contour

## Feed Specifications – Standard RxTx

- **Operating Frequency (GHz)**
  - Receive = 10.70-12.75 GHz
  - Transmit = 13.75-14.50 GHz
- **Port-Port Isolation**
  - Transmit = 85 dB Min
  - Receive = 30 dB Min
- **VSWR**
  - Transmit = 1.3:1 Max
  - Receive = 1.5:1 Max
- **Insertion Loss**
  - Transmit = 0.2 dB Max
  - Receive = 0.4 dB Max

## Mechanical Performance

- **Reflector Material**
  - Glass Fiber Reinforced Polyester SMC
- **Antenna Optics**
  - Prime Focus, Offset, 0.8 F/D
- **Mount Type**
  - Elevation over Azimuth
- **Elevation Adjustment Range**
  - 5° to 90° Continuous Fine Adjustment
- **Azimuth Adjustment Range**
  - 360° Continuous, +/- 20° Fine Adjustment
- **Mast Pipe Interface**
  - 2.5 SCH Pipe (2.88"OD, 73 mm OD)
- **Max RF Equipment Weight**
  - Tier 3 Feed Support = 20 lb. (9 kg)

## Environmental Performance

- **Wind Loading**
  - Operational = 50 mi/h (72 km/h)
  - Survival = 125 mi/h (200 km/h)
- **Temperature**
  - Operational = -40° to 140° F (-40° to 60° C)
  - Survival = -50° to 160° F (-46° to 71° C)
- **Rain**
  - Operational = ½ inch/h (13mm/h)
  - Survival = 2 inch/h (51mm/h)
- **Ice**
  - Survival = ½ inch (13mm) Radial Ice
- **Atmospheric Conditions**
  - Salt, Pollutants, and Contaminants as Encountered in Coastal and Industrial Areas
- **Solar Radiation**
  - 360 BTU/h/ft<sup>2</sup> (1135 W/m<sup>2</sup>)

**GENERAL DYNAMICS**  
Mission Systems

customer@gd-ms.com • gdmissionsystems.com/vsat  
Phone: +1-770-689-2040

©2019 General Dynamics. All rights reserved. General Dynamics reserves the right to make changes in its products and specifications at anytime and without notice. All trademarks indicated as such herein are trademarks of General Dynamics. All other product and service names are the property of their respective owners. ® Reg. U.S. Pat. and Tm. Off.

SATCOM1p2M\_Ku-BandRxTxAnt-41019

## **Ku-band 6W BUC**

RF Frequency:

13.75 to 14.5 GHz and 14.0 to 14.5 GHz

### **Model No. NJT8306 series**

RF Frequency : 14.0 to 14.5 GHz / 13.75 to 14.5 GHz  
LO Frequency : 13.05 GHz / 12.80 GHz  
IF Frequency : 950 to 1,450 MHz / 950 to 1,700 MHz  
Output Power @ 1dB G.C.P. :  
+37.8 dBm (6W)  
IF / Ref. (10MHz) Input :  
N-type / F-type, Female Connector  
DC Power Input : IF Connector

## **Specifications**

**Rev.01 December 10, 2014**

## **Copyright 2014**

**New Japan Radio Co., Ltd.  
Microwave Components Division**

-Notice of Proprietary Information-

This documents and its contents are proprietary to New Japan Radio Co., Ltd.  
This publication and its contents may not be reproduced or distributed for any  
other purpose without the written permission of New Japan Radio Co., Ltd.



## Caution

1. NJRC strives to produce reliable and high quality microwave components. NJRC's microwave components are intended for specific applications and require proper maintenance and handling. To enhance the performance and service of NJRC's microwave components, the devices, machinery or equipment into which they are integrated should undergo preventative maintenance and inspection at regularly scheduled intervals. Failure to properly maintain equipment and machinery incorporating these products can result in catastrophic system failures.
2. To ensure the highest levels of reliability, NJRC products must always be properly handled. The introduction of external contaminants (e.g. dust, oil or cosmetics) can result in failures of microwave components.
3. NJRC offers a variety of microwave components intended for particular applications. It is important that you select the proper component for your intended application. You may contact NJRC's sales office or sales representatives, if you are uncertain about the products listed in the catalog and the specification sheets.
4. Special care is required in designing devices, machinery or equipment, which demand high levels of reliability. This is particularly important when designing critical components or systems whose foreseeable failure can result in situations that could adversely affect health or safety. In designing such critical devices, equipment or machinery, careful consideration should be given to, amongst other things, their safety design, fail-safe design, back-up and redundancy systems, and diffusion design.
5. The products listed in the catalog and specification sheets may not be appropriate for use in certain equipment where reliability is critical or where the products may be subjected to extreme conditions. You should consult our sales office or sales representatives before using the products in any of the following types of equipment.
  - \* Aerospace Equipment
  - \* Equipment Used in the Deep Sea
  - \* Power Generator Control Equipment (nuclear, steam, hydraulic)
  - \* Life Maintenance Medical Equipment
  - \* Fire Alarm/Intruder Detector
  - \* Vehicle Control Equipment (automobile, airplane, railroad, ship, etc.)
  - \* Various Safety Equipment
6. NJRC's products have been designed and tested to function within controlled environmental conditions. Do not use products under conditions that deviate from methods or applications specified in the catalog and specification sheets. Failure to employ NJRC's products in the proper applications can lead to deterioration, destruction or failure of the products. NJRC shall not be responsible for any bodily injury, fires or accidents, property damage or any consequential damages resulting from the misuse or misapplication of its products. PRODUCTS ARE SOLD WITHOUT WARRANTY OF ANY OF KIND, EITHER EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.
7. The product specifications and descriptions listed in the catalog and specification sheets are subject to change at any time, without notice.

\* Above Specifications are subject to change without notice.

## Model Number

### ● Numbering System

**N J T 8 3 0 6 U N**

**IF Interface Connector:**

**N: N-type (50 ohms), Female Connector**

**F: F-type (75 ohms), Female Connector**

**RF Frequency**

**Non Suffix: Standard Ku-band (14.0 to 14.5 GHz)**

**U: Universal Ku-band (13.75 to 14.5 GHz)**

**Output Power @ 1dB G.C.P.:**

**06: +37.8 dBm (6W)**

**Product Series Number**

### ● Line-up

| Model No. | RF Frequency                            | Local Frequency | IF Frequency        | Output Power @ P1dB          | IF Connector | Power Supply             |
|-----------|-----------------------------------------|-----------------|---------------------|------------------------------|--------------|--------------------------|
| NJT8306N  | 14.0 to 14.5GHz<br>(Standard Ku-band)   | 13.05 GHz       | 950 to<br>1,450 MHz | 6W Linear<br>(+37.8dBm min.) | N-type       | +12 to +30 V<br>DC Power |
| NJT8306F  |                                         |                 |                     |                              | F-type       |                          |
| NJT8306UN | 13.75 to 14.5GHz<br>(Universal Ku-band) | 12.80 GHz       | 950 to<br>1,700 MHz |                              | N-type       |                          |
| NJT8306UF |                                         |                 |                     |                              | F-type       |                          |

\* Above Specifications are subject to change without notice.

## 1. Electrical Specifications

|       |                                                                                                       |                                                                                                                                                                                                                                       |
|-------|-------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1-1.  | Output Frequency Range<br><Universal Ku-band><br><Standard Ku-band>                                   | 13.75 to 14.5 GHz<br>14.0 to 14.5 GHz                                                                                                                                                                                                 |
| 1-2.  | Input Frequency Range<br><Universal Ku-band><br><Standard Ku-band>                                    | 950 to 1,700 MHz<br>950 to 1,450 MHz                                                                                                                                                                                                  |
| 1-3.  | Maximum IF Input Level<br>(without damage)                                                            | +13 dBm max.                                                                                                                                                                                                                          |
| 1-4.  | Conversion Type                                                                                       | Single, fixed L.O.                                                                                                                                                                                                                    |
| 1-5.  | L.O. Frequency<br><Universal Ku-band><br><Standard Ku-band>                                           | 12.80 GHz<br>13.05 GHz                                                                                                                                                                                                                |
| 1-6.  | Frequency Sense                                                                                       | Positive                                                                                                                                                                                                                              |
| 1-7.  | Output Power @ 1dB G.C.P. (P1dB)                                                                      | +37.8 dBm min. over temperature                                                                                                                                                                                                       |
| 1-8.  | Linear Gain                                                                                           | 62 dB nom., 56 dB min.                                                                                                                                                                                                                |
| 1-9.  | Gain Variation over frequency<br>@ fixed temperature<br><Universal Ku-band><br><br><Standard Ku-band> | 5 dBp-p max. over 750 MHz<br>2 dBp-p max. over 54 MHz<br>5 dBp-p max. over 500 MHz<br>2 dBp-p max. over 54 MHz                                                                                                                        |
| 1-10. | Gain Stability over temperature<br>@ fixed frequency                                                  | 4 dBp-p max.<br>2 dBp-p typ.                                                                                                                                                                                                          |
| 1-11. | ACPR                                                                                                  | -30 dBc typ., -24 dBc min.<br>@ Pout = +37.8 dBm                                                                                                                                                                                      |
| 1-12. | Requirement for External Reference<br>[Frequency]<br>[Input Power]<br>[Phase Noise]                   | 10 MHz (sine-wave)<br>-5 to +5 dBm @ Input port<br>-125 dBc/Hz max. @ 100 Hz<br>-135 dBc/Hz max. @ 1 kHz<br>-140 dBc/Hz max. @ 10 kHz                                                                                                 |
| 1-13. | L.O. Phase Noise                                                                                      | -60 dBc/Hz max. @ 100 Hz<br>-70 dBc/Hz max. @ 1 kHz<br>-80 dBc/Hz max. @ 10 kHz<br>-90 dBc/Hz max. @ 100 kHz<br>-100 dBc/Hz max. @ 1MHz                                                                                               |
| 1-14. | Spurious @ P1dB Output<br>[in band]<br>[in receive band]<br>[Out-of-band]                             | -50 dBc max. @ RF Frequency<br>-70 dBm max. @ 10.95 to 12.75 GHz<br>-50 dBc max.                                                                                                                                                      |
| 1-15. | Receive Band Noise Density<br><Universal Ku-band><br><br><br><br><Standard Ku-band>                   | Tx: 14.0 to 14.5 GHz<br>-156 dBm/Hz max. @10.95 to 12.75 GHz<br>Tx: 13.75 to 14.0 GHz<br>-156 dBm/Hz max. @10.95 to 12.25 GHz<br>-125 dBm/Hz max. @12.25 to 12.75 GHz<br>Tx: 14.0 to 14.5GHz<br>-156 dBm/Hz max. @ 10.95 to 12.75 GHz |

\* Above Specifications are subject to change without notice.

|       |                                                                |                                                                                                                                              |
|-------|----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| 1-16. | Noise Figure                                                   | 23 dB max.                                                                                                                                   |
| 1-17. | Input Impedance<br><N-type Model><br><F-type Model>            | 50 ohms nom.<br>75 ohms nom.                                                                                                                 |
| 1-18. | Input V.S.W.R.                                                 | 2 : 1 max.                                                                                                                                   |
| 1-19. | Output Load V.S.W.R.<br>[Recommendation]<br>[Non Damage]       | 1.3 : 1 max.<br>3 : 1 max.                                                                                                                   |
| 1-20. | DC Power Requirement<br>[Voltage Range]<br>[Power Consumption] | +24 VDC (+12 to +30 VDC)<br>35 W typ. @ No IF signal<br>40 W typ., 48 W max. @ Pout = +37.8 dBm<br>3 W max. @ 10 MHz reference off (Mute on) |
| 1-21. | Mute                                                           | Shut off the HPA in case of L.O. unlocked or no 10 MHz reference signal.                                                                     |
| 1-22. | LED Indicator                                                  | GREEN: L.O. locked<br>RED: L.O. unlocked<br>(or no 10 MHz reference signal)                                                                  |

## 2. Mechanical Specifications

|      |                                                     |                                                                                                                    |
|------|-----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| 2-1. | Input Interface<br><N-type Model><br><F-type Model> | IF / Ref. / DC Input:<br>N-type female connector, 50 ohms<br>F-type female connector, 75 ohms                      |
| 2-2. | Output Interface                                    | Waveguide, WR-75 (with Groove)                                                                                     |
| 2-3. | Dimension & Housing                                 | 174.9 (L) × 84 (W) × 59.2 (H) mm<br>[6.89" (L) × 3.31" (W) × 2.33" (H)]<br>without interface connectors and screws |
| 2-4. | Weight                                              | 1.2 kg max.<br>[2.6 lbs max.]                                                                                      |

## 3. Environmental Specifications

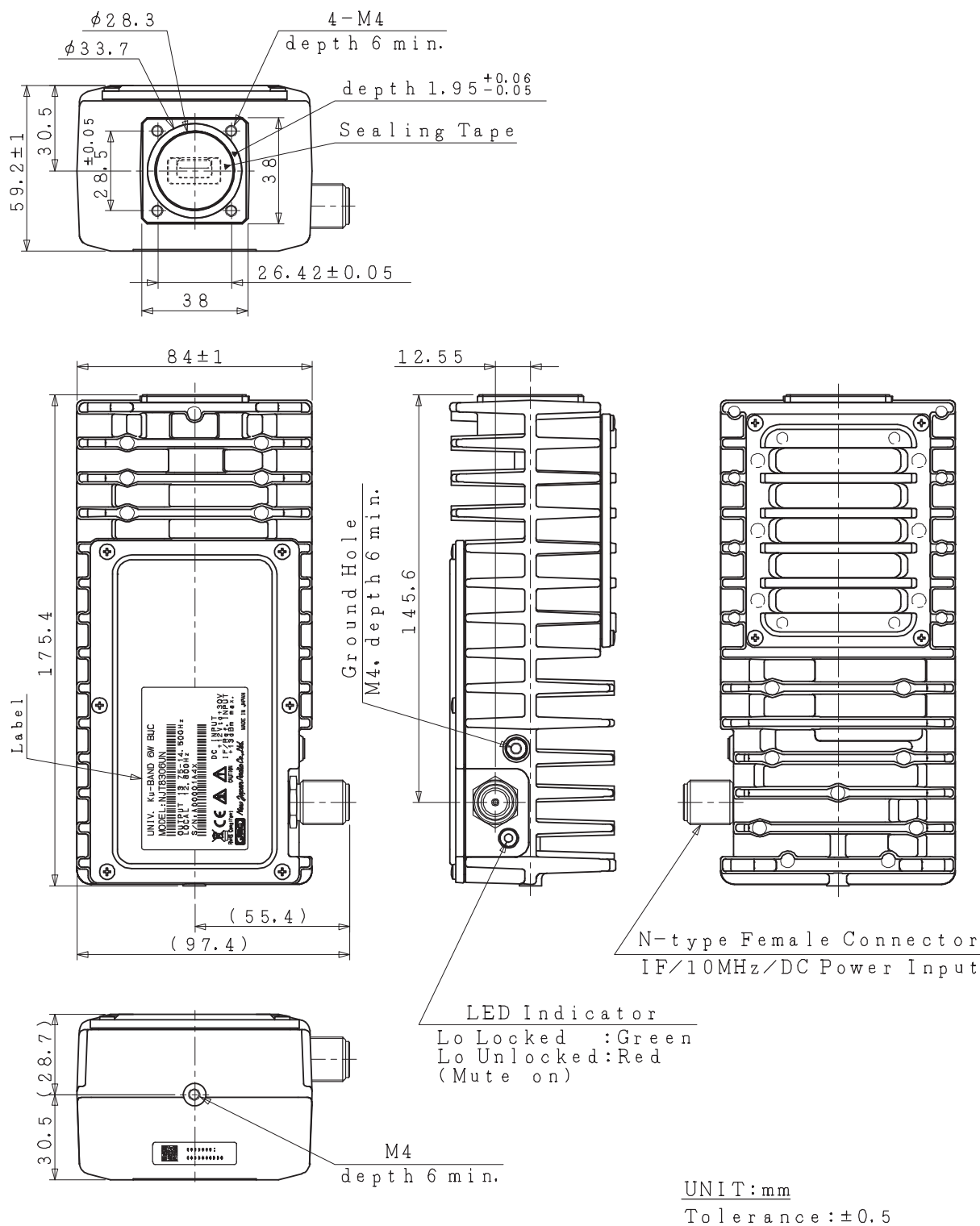
|      |                                                                           |                                                                                             |
|------|---------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| 3-1. | Temperature Range (ambient)<br>[Operating]<br>[Storage]                   | Operation Guarantee: -40 to +65 °C<br>Performance Guarantee: -40 to +60 °C<br>-40 to +75 °C |
| 3-2. | Humidity                                                                  | 0 to 100 %                                                                                  |
| 3-3. | Altitude                                                                  | 15,000 feet (4,572 m)                                                                       |
| 3-4. | Vibration                                                                 | 5 G [49.03 m/s <sup>2</sup> ] (3 axis, 50 Hz to 2 kHz)<br>1 mm p-p (3 axis, 5 to 50 Hz)     |
| 3-5. | Shock                                                                     | 30 G [294.20 m/s <sup>2</sup> ] (3 axis)                                                    |
| 3-6. | Waterproof / Dustproof (IP Code)                                          | IP 67 *1                                                                                    |
| 3-7. | Regulations                                                               | EU Directive (CE Marking)<br>EMC (2004/108/EC)<br>RoHS (2011/65/EU)<br>Safety: EN60950-1    |
| 3-8. | Comply with RoHS (Restricting the use of Hazardous Substances) directives |                                                                                             |

\*1: Conditioned on connection with waveguide.

\* Above Specifications are subject to change without notice.

## 4. Outline Drawing

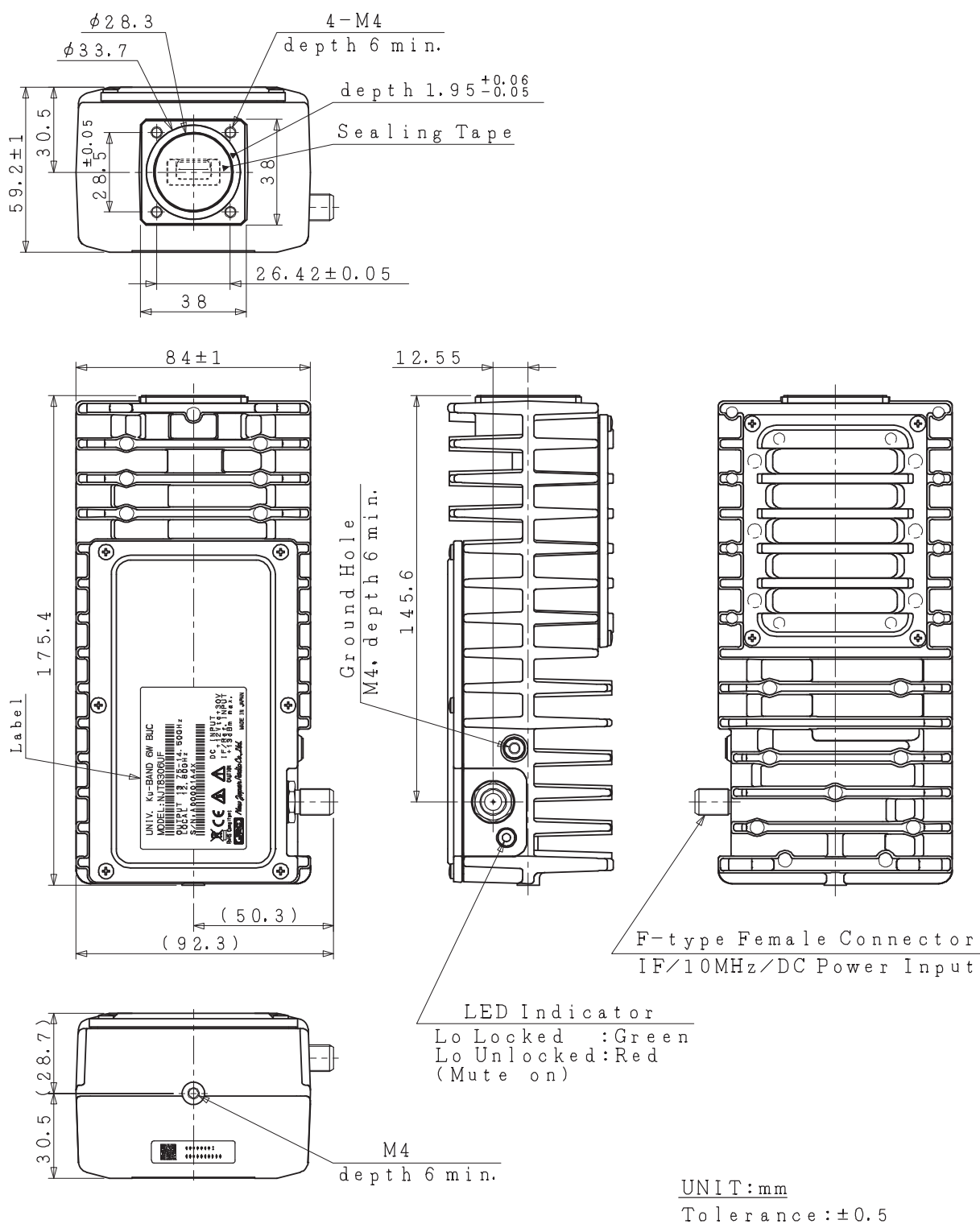
### ● N-type Model



**Caution:** DO NOT remove the sealing tape on the waveguide. If the sealing tape is removed, it may lose the performance of waterproof.

\* Above Specifications are subject to change without notice.

# ● F-type Model

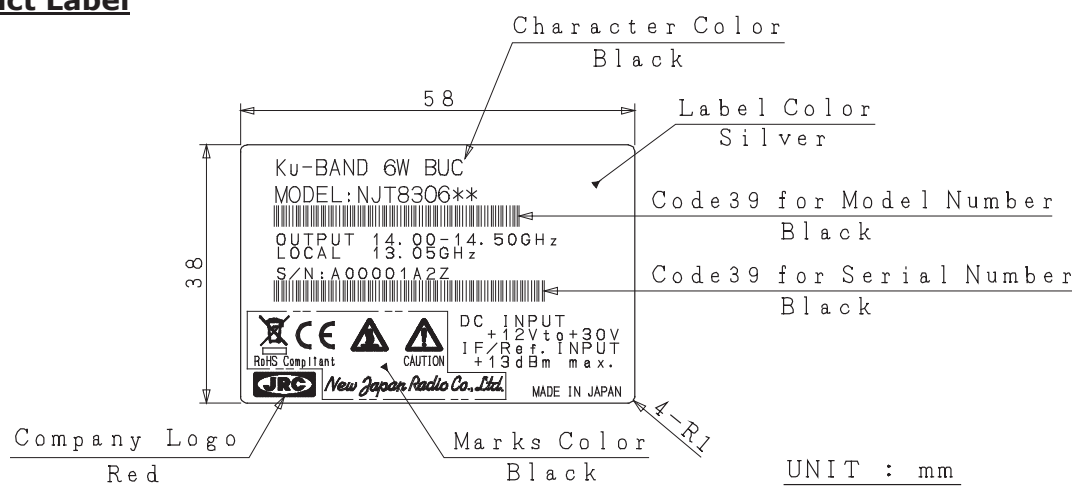


**Caution:** DO NOT remove the sealing tape on the waveguide. If the sealing tape is removed, it may lose the performance of waterproof.

\* Above Specifications are subject to change without notice.

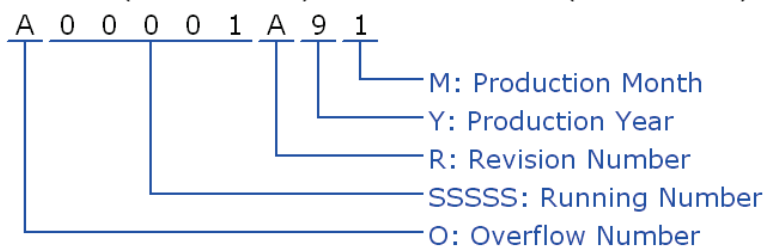
## 5. Label

### Product Label



### Definition of Serial Number

Serial Number (OSSSSSRYM) - ALPHANUMERIC (9 characters)



O: Overflow Number - ALPHABET (1 character)

"A" to "Z", e.g.: A99999 ⇒ B00001

SSSSS: Running Number - NUMBER (5 digits)

"00001" to "99999"

R: Revision Number - ALPHABET (1 character)

"A" to "Z"

Y: Production Year - NUMBER (1 digit)

Calendar Number, e.g.: 2009:9, 2010:0, 2011:1, 2012:2 .....

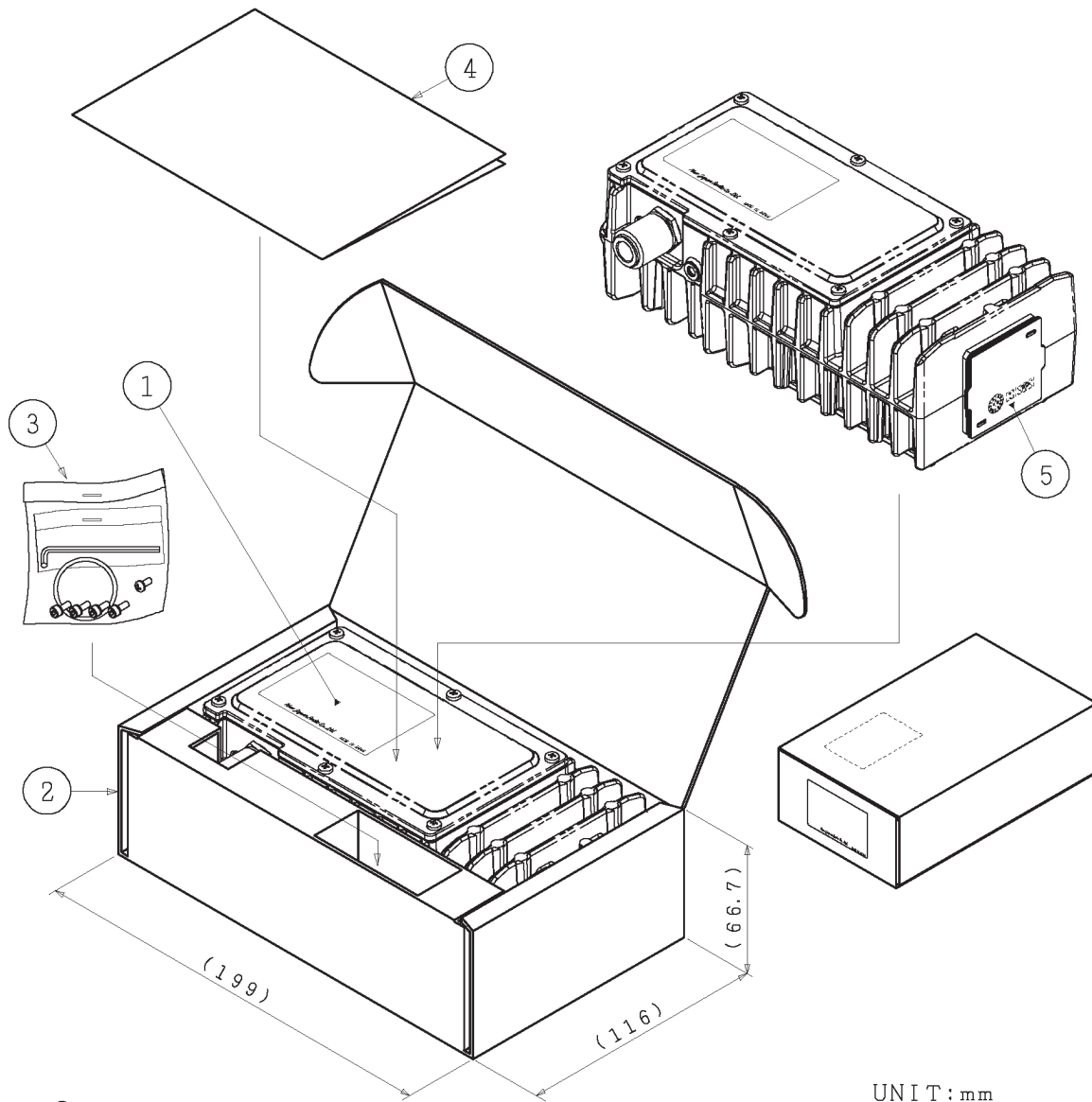
M: Production Month - ALPHANUMERIC (1character)

"1" to "9", "X" as October, "Y" as November, "Z" as December

\* Above Specifications are subject to change without notice.

## 6. Package

### Individual Package

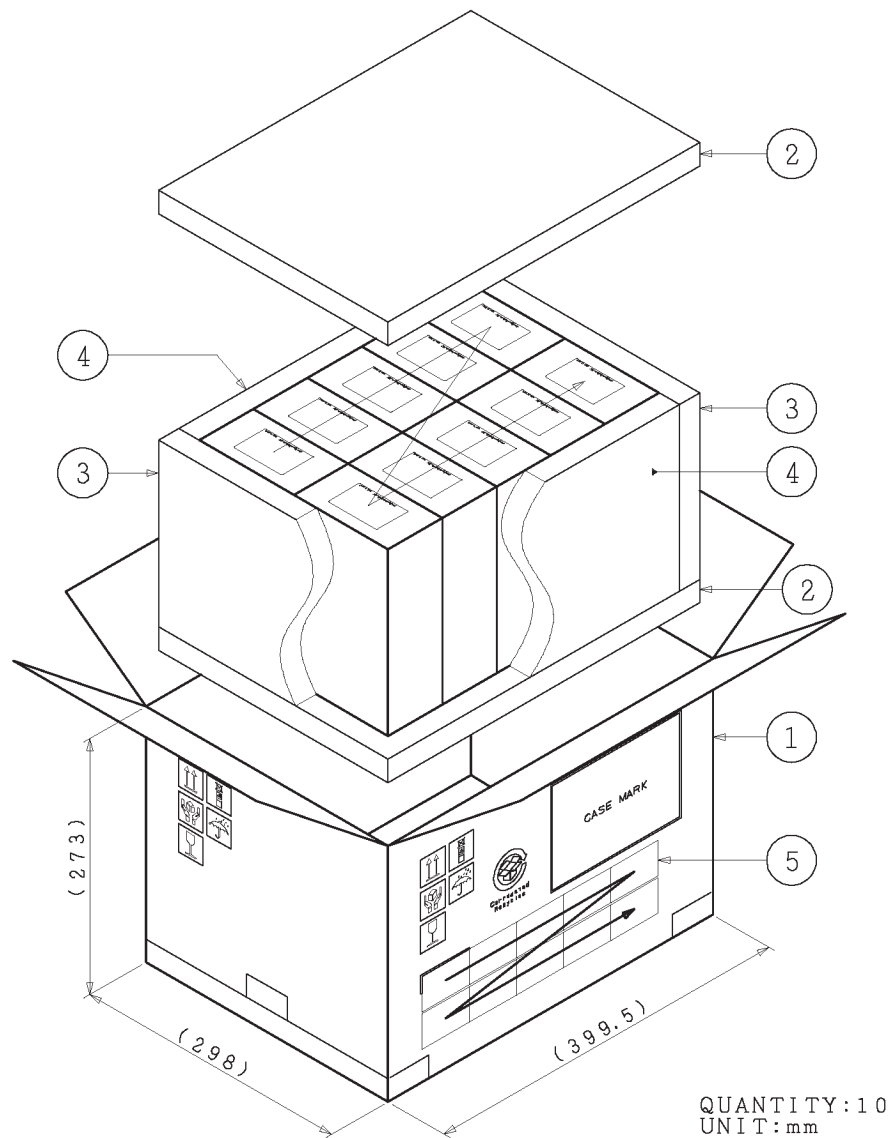


#### Accessories

- O-RING
- Cross Recessed Head Machine Screw  
M4×6 1Piece (SUS, SW) for Ground Hole
- Hexagon Socket Head Bolts  
M4×10 4Pieces (SUS, SW and W) for Waveguide Flange Holes
- Hexagon Wrench Keys (M4Type)

\* Above Specifications are subject to change without notice.

## Shipping Package



### Pictorial Marking for Handling of Goods



THIS WAY UP



FRAGILE



KEEP DRY



HANDLE WITH CARE



LAYERS LIMIT: 4



CORRUGATED RECYCLES

Corrugated  
Recycles

- ①: Double Wall Corrugated Fiberboard
- ②: Polystyrene Foam For Package Cushioning
- ③: Polystyrene Foam For Package Cushioning
- ④: Polystyrene Foam For Package Cushioning
- ⑤: Label

\* Above Specifications are subject to change without notice.

# MDM3315 Satellite Modem



The MDM3315 Satellite Modem is supported on multiple platforms to cover the widest range of markets and applications. The modem shares a wide range of key features and can be easily mixed in a single satellite network on either Evolution, Velocity or Dialog platform. The modem is extremely flexible as it can leverage several different return waveform technologies across multiple platforms: ATDMA, MF-TDMA, high-rate SCPC and Mx-DMA MRC which seamlessly combines MF-TDMA flexibility with on-demand variable bandwidth allocation of SCPC while guaranteeing the highest efficiency and availability. The MDM3315 also supports wideband operations up to 500 Msps\* in the forward channel, enabling service providers to set-up any type and size of network on HTS/VHTS.

The applications supported by the MDM3315 Satellite Modem include a wide range of fixed IP services; Internet / intranet access, VoIP, enterprise connectivity, maritime and multicasting services. With its high data rates, the MDM3315 can also be used in backhauling applications. The wideband receive capability makes the MDM3315 a perfect fit for usage on HTS satellites. The modem's ease of installation through multilingual web GUIs and Point&Play application allows service providers to deploy their services quickly, in a cost-effective way.

The 3315 modem is also available as a board level variant, the SMB3315.

EVOLUTION

VELOCITY

DIALOG

## Markets

Enterprise/SME  
Cellular backhaul  
Maritime  
Broadcast  
Government

## Main Features:

- DVB-S2 (up to 45Msps) / DVB-S2X\* (up to 500 Msps\*) outbound
- Supports DVB-S2X MODCODS up to 64APSK
- Return max rates up to 29 Msps (ATDMA), 64 Msps (SCPC), 40 Msps (Mx-DMA MRC)
- Ideal for both fixed and mobility applications with throughput rates up to 150/70 Mbps
- OpenAMIP and GXT file support for mobility
- Security features with Optional \*AES 256 encryption and \*X.509 Remote Authentication
- ATMEL chip for authentication
- Embedded TCP acceleration, GTP acceleration and header compression



## Network Configuration

| Network Topology    | Rx                                 | Tx                      |                            |                                    |                                    |
|---------------------|------------------------------------|-------------------------|----------------------------|------------------------------------|------------------------------------|
| <b>Dialog</b>       | DVB-S2/DVB-S2X*                    | MF-TDMA                 | Mx-DMA HRC                 | Mx-DMA MRC                         | SCPC                               |
| <b>Modulation</b>   | QPSK, 8PSK, 16APSK, 32APSK, 64APSK | 4CPM                    | QPSK, 8PSK, 16APSK, 32APSK | QPSK, 8PSK, 16APSK, 32APSK, 64APSK | QPSK, 8PSK, 16APSK, 32APSK, 64APSK |
| <b>Symbol Rates</b> | 1 Msps to 500 Msps                 | Up to 7.6 Msps          | Up to 20 Msps              | Up to 40 Msps*                     | 1 Msps to 64 Msps                  |
| <b>Velocity</b>     | DVB-S2                             | Adaptive TDMA           |                            |                                    |                                    |
| <b>Modulation</b>   | QPSK, 8PSK, 16APSK, 32APSK         | BSPK, QSPK, 8PSK        |                            |                                    |                                    |
| <b>Symbol Rate</b>  | 1 Msps to 45Msps                   | Up to 7.5 Msps          |                            |                                    |                                    |
| <b>Evolution</b>    | DVB-S2/DVB-S2X                     | Adaptive TDMA           |                            |                                    |                                    |
| <b>Modulation</b>   | QPSK, 8PSK, 16APSK, 32APSK, 64APSK | BSPK, QSPK, 8PSK, 16QAM |                            |                                    |                                    |
| <b>Symbol Rate</b>  | 1 Msps to 128 Msps                 | 1 Msps to 29 Msps       |                            |                                    |                                    |

## Modem Interfaces

### Tx Interface

|                  |                                                                      |
|------------------|----------------------------------------------------------------------|
| Connector        | F-Type 75 Ohm                                                        |
| Frequency range  | 950-2400 MHz                                                         |
| TX level         | -55 dBm to +5 dBm (Dialog)<br>-45 dBm to +5 dBm (Evolution/Velocity) |
| BUC power supply | 24V / 4A or 43~44VDC 3.5A software selectable                        |

|                     |           |
|---------------------|-----------|
| BUC reference       | 10/50 MHz |
| BUC reference level | 0 dBm     |

### Rx Interface

|                            |                                     |
|----------------------------|-------------------------------------|
| Connector                  | F-Type 75 Ohm                       |
| Frequency                  | 950-2150 MHz                        |
| LNB power supply           | 13/18VDC 500mA                      |
| LNB band selection         | 13/18V or 22kHz tone, programmable  |
| LNB polarization selection | 13/18V or 22 kHz tone, programmable |

### Data Interface

|      |                                               |
|------|-----------------------------------------------|
| LAN: | Four 10/100/1000 Mbps Ethernet, auto MDI/MDIX |
|------|-----------------------------------------------|

\*Platform and release dependent

## Management

### Protocols Supported

UDP, IPv4 & IPv6, ICMP, TCP, IGMPv1, IGMPv2, ARP, DHCP, DNS, NTP, BGP, NAT, Diffserv Marking, GRE

### Security

256-bit AES Link Encryption (optional)

\*X.509 Remote Authentication

### Web GUI

Manage web GUI via configurable management IP address

## Mechanical and Environmental

|            |                                                                |
|------------|----------------------------------------------------------------|
| Dimensions | W 22cm x D 33cm x H 4cm<br>(W8.66 in x D 12.99 in x H 1.57 in) |
|------------|----------------------------------------------------------------|

|        |                   |
|--------|-------------------|
| Weight | 1.7 kg (3.75 lbs) |
|--------|-------------------|

|              |                                |
|--------------|--------------------------------|
| Temperature: |                                |
| Operating    | 0° to +55°C (32° to +131°F)    |
| Storage      | -30° to +60°C (-22° to +140°F) |

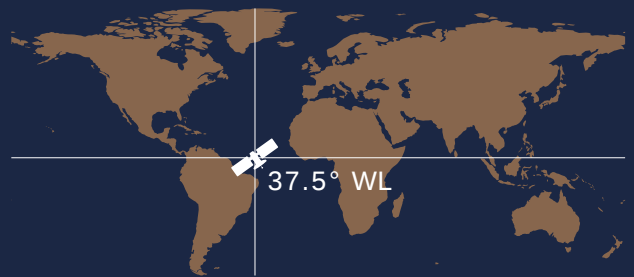
|                     |                        |
|---------------------|------------------------|
| Humidity: Operating | 5 - 95% non-condensing |
|---------------------|------------------------|

## Power Supply

|                   |                                               |
|-------------------|-----------------------------------------------|
| Input Voltage     | 48 VDC, 4 Amps input                          |
| Adapter           | AC, 50Hz\220-260V and 60Hz\100-130V<br>-48VDC |
| Power Consumption | 60W maximum                                   |

# Telstar 11N

High powered Ku-band connecting Europe, Africa, the Americas and the Atlantic Ocean Region



## Key Facts

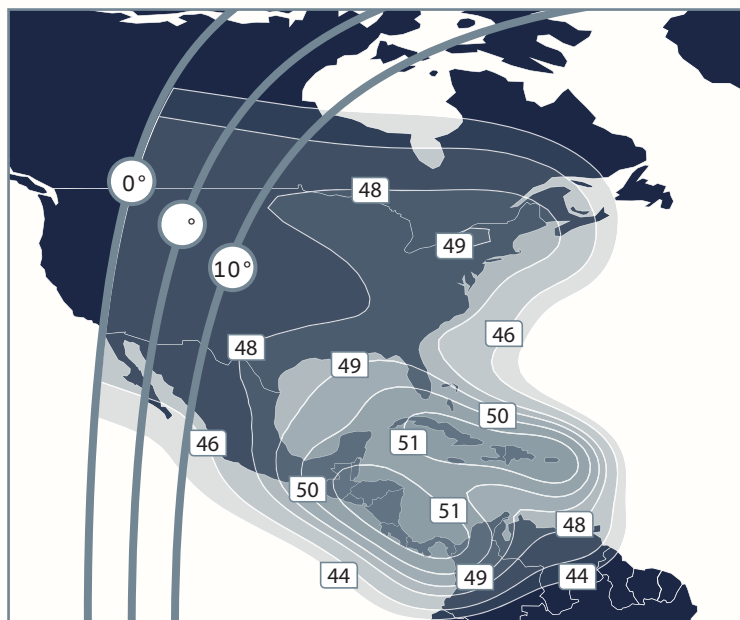
- Preferred choice for VSAT and IP solutions within Europe, Africa, the US & Central America and for connectivity between these regions
- Leading satellite for maritime and aero broadband services
- Wide Atlantic Ocean beam extends from the Americas to Europe & Africa and from the Arctic Circle to the Equator
- Ideal for video contribution and distribution services – intra and inter-region

SATELLITE MANUFACTURER  
SSL

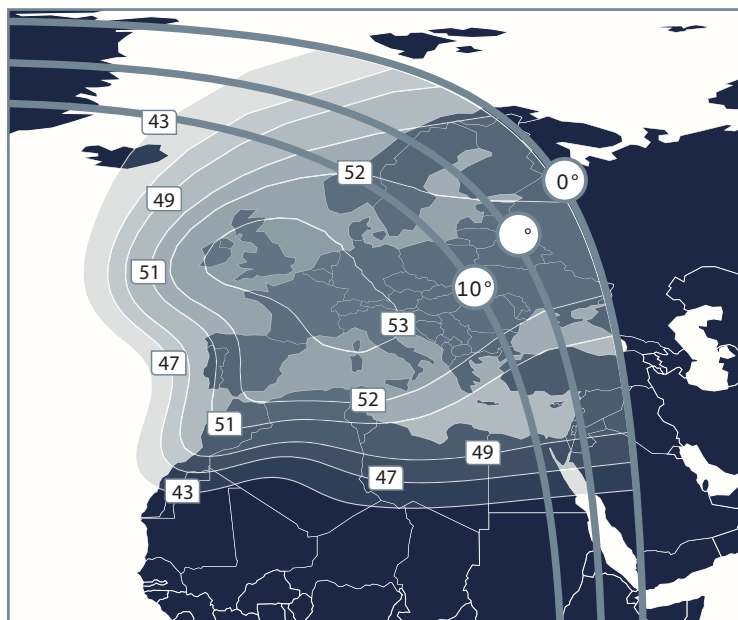
TRANSPONDERS  
6 Ku-band @ 27MHz  
33 Ku-band @ 54MHz

IN SERVICE DATE  
March 2009

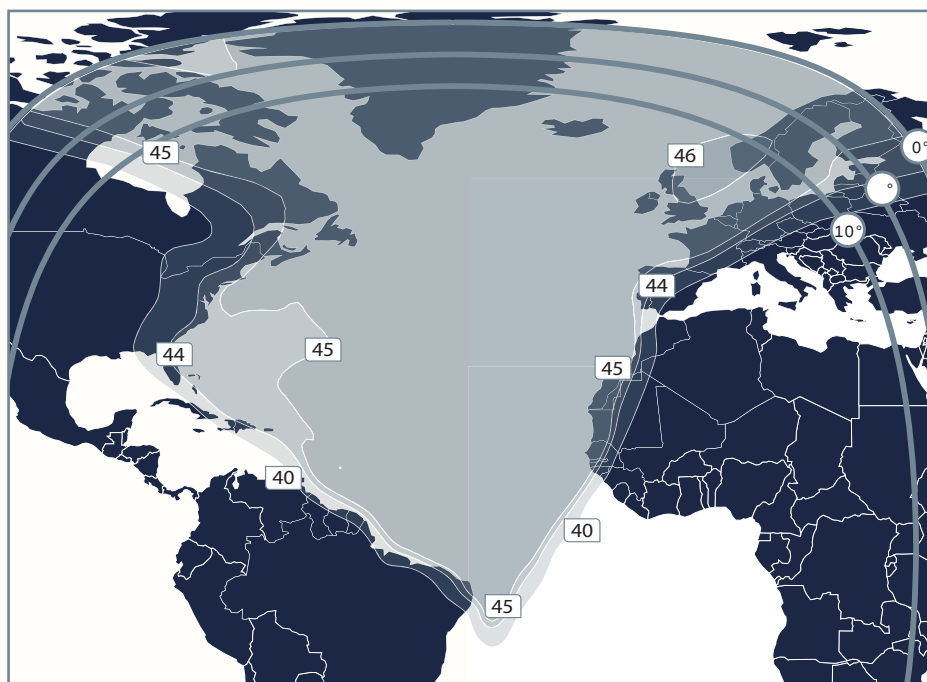
**TELESAT**<sup>TM</sup>



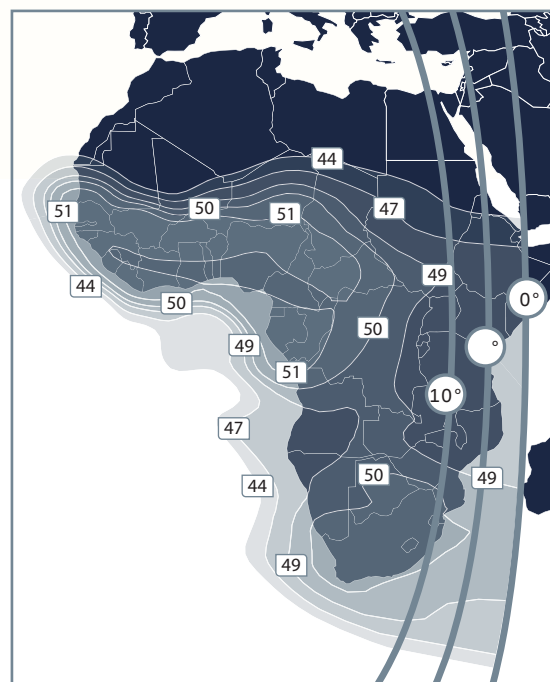
Ku-band | North and Central America



Ku-band | Europe and North Africa



Ku-band | Atlantic Ocean



Ku-band | Sub-Saharan Africa

