

Innovative Communication Solutions

Norsat SigmaLink[™] AUTO

The new Norsat SigmaLink[™] AUTO is the latest in a series of transportable satellite terminals. The SigmaLink[™] AUTO is ideally suited to provide broadband connectivity for base camps or other prolonged missions where assignments are temporary but deployment is protracted. With simple setup and automatic acquisition, personnel with minimal training can have the Norsat SigmaLink[™] up and transmitting in minutes.



Flexible. Intelligent. Rugged.

The Norsat SigmaLink[™] AUTO was designed from the ground up to deliver broadband data connectivity in a transportable, rugged and easy-to-use package. The terminal can be easily configured to meet varying needs; it includes a 1.8m or 2.4m antenna, interchangeable Ku/X/C band capability, various power amplifiers options, positioner, controller, and motorization. Norsat is also the first in the industry to incorporate an easy-to-use graphical interface for antenna alignment, satellite acquisition, peaking and transmitter control, as well as access to the built-in spectrum analyzer, beacon detector, and DVB receiver.

The Norsat Advantage

Only the Norsat SigmaLink[™] AUTO provides a quick assembly platform that can be set up in less than 15 minutes without tools. It comes complete with pointing tools (compass, inclinometer, and GPS) to aid in satellite alignment. The sophisticated LinkControl[™] software together with automatic satellite acquisition, makes alignment and acquisition easy for even novice operators. To further simplify operation in the field, a full range of settings can be pre-configured in user selectable profiles before the Norsat SigmaLink[™] is sent out on assignment.

Flexible

Ku/X/C band capable 1.8 M or 2.4 M antenna for greater throughput

Available with pointing box (SAA) and/or baseband configuration

Configurable to operate on any commercial satellite at any time

Intelligent

Quick and simple assembly Assisted-acquire via easy-to-use SAA

Intuitive graphical software interface Built-in spectrum analyzer, beacon detector, DVB receiver Software control of transmitter

Rugged

Packaged in ruggedized industrial cases

Built tough and weatherized for harsh environments

Shock protected assemblies

Compliant with military environmental standards



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1.8M SigmaLink™ AUTO Baseband Variant

| System | C-Band | | | X-Band | | Ku-B | and | |
|---|---|---|-------------------------|--------------------------------------|--|---|--|---|
| | Rx | Тх | | Rx | Тх | Rx | | Tx |
| RP /T | N/A | 53.3 dBW | | | >61 dBW | N/A | K | 58.3 dBW |
| | 15.3 dB/K | N/A | | >19 dB/K | N/A | 23.7 dB/ | ix | N/A |
| ntenna | 0.4. 10.00 | | | 7.05 7.75 0 | | | 0.75.011 | 40.75 44.5 01/ |
| equency dband Gain | 3.4 - 4.2 GHz 35.4 dBi | 5.85 - 6.425 GH: 39.3 dBi | | 7.25 - 7.75 GHz 41 dBi | 7.9 - 8.4 GHz 41.7 dBi | 10.95 - 1 45.1 dBi | 2.75 GHz | 13.75 - 14.5 GHz 46.8 dBi |
| pol | 30 dB on axis, | 30 dB on axis, | | N/A | 41.7 UBI N/A | 35dB on | axis. | 35dB on axis, |
| | 23 dB within 1 dB co | | | | | | thin 1db contour | 23 dB within 1db contour |
| cial Ratio | N/A | N/A | | 1.5 dB | 1.5 dB | N/A | | N/A |
| delobe | Meets ITU : | 580 outside main lobe | | | Meets DSCS | | Meets ITU | J 580 |
| olation Tx - Rx | -60 dB | N/A | | -110 dB | N/A | -85 dB | | N/A |
| Rx - Tx | N/A | -50 dB | | N/A | -110 dB | N/A | | -30 dB |
| flector Size | 1.8m, 4 piece segme | ented reflector, offset feed | 1 | 1.8m, 4 piece seg | mented reflector, offset fe | ed 1.8m, 4 | piece segmented re | eflector, offset feed |
| itenna Travel Az | +/ 25 degrees fine a | diuot | | 1/ 25 dogroop fin | o odiuot | +/ 25 d | aroos fino adjust | |
| El | +/- 35 degrees fine a 0 - 90 degrees | aujust | | +/- 35 degrees fin 0 - 90 degrees | e aujust | 0 - 90 de | grees fine adjust | |
| Pol | +/- 90 degrees | | | +/- 90 degrees | | +/- 90 de | | |
| ed | 2-port linear | | : | 2-port circular | | 2-port lin | near | |
| ransmit | | | | | Ruggedized S | System Control | ler | |
| | C-Band | X-Band | Ku-Band | | | - | | |
| utput Frequency | с-вапо 5.85 - 6.425 GHz | х-вапо 7.9 - 8.4 GHz | ки-вало 13.75 - 14.5 | GHz | Operating System Screen | Microsoft(R) XP Tab 264mm Touchscree | | Inlight readable |
| eference | 10 MHz | 10 MHz | 10 MHz | | Keyboard | 87 Key Compact, Se | aled | • |
| eference Level | 0 +/- 5 dBm | 0 +/- 5 dBm | 0 +/- 5 dBm | | CPU | Intel® CoreTM Duo | | |
| utput Power | 40 W | 175 W | 25 W | | Physical | Low power, shock m | | 1 |
| P1dB ain (typical) | 77 dB | 84 dB | 50 dB | | Physical | Ruggedized MIL-Sp 1RU 254mm deep ra | | |
| pectral Regrowth | -26 dBc @ 44.7 dBm | -26 dBc @ 45.5 dBm | -26 dBc @4 | 14 dBm | | 482 x 44 x 254mm (| | |
| Receive | | | | | MIL-STD 810F | 514.5 I | (vibration) | |
| | | | | | | 516.5 IV 501.4 I & II | (freefall) (stabilized temp.) | |
| NB NF eference | 0.5 10 MHz | 0.8 10 MHz | 0.8 10 MHz | | | 501.4 T&II 503.4 I | (sudden changes |) |
| eference Level | -5 +/- 5 dBm | +2 +/- 5 dBm | +2 +/- 5 dBi | m | | 506.4 III | (falling or sprayed | |
| nase Noise | -73 dBc/Hz at 1 kHz | -75 dBc/Hz at 1 kHz | -65 dBc/Hz | | Indoor Power | Supply | | |
| | -83 dBc/Hz at 10 kHz | -85 dBc/Hz at 10 kHz | -75 dBc/Hz | | | | | |
| put VSWR | -93 dBc/Hz at 100 kHz 2.2 : 1 | -95 dBc/Hz at 100 kHz 2.0 : 1 | -85 dBc/Hz 2.2 : 1 | at 100 KHZ | Prime Power | 115 / 230 VAC 50 / 60 Hz | | |
| utput VSWR | 2.2:1 | 1.5 : 1 | 2.2:1 | | Output Voltage | 48V / 24V | | |
| onversion Gain | 65 dBm | 55 dBm | 65 dBm | | Consumption | < 500 VAAC | | |
| /pical | 0.15 | 5 10 | - 10 | | Interfacility L | ink Cable | | |
| output P1 dB ower Req | 9 dBm 15 - 24 V on IF cable | 5 dBm 15 - 24 V on IF cable | 7 dBm 15 - 24 V or | IE cable | | | | |
| urrent Drain | 550 mA | 300 mA | 200 mA | | Length | 10m (Standard) 30m (Optional) | | |
| Shock Protec | ted Baseband | | | | | longer lengths availa | ble on request | |
| Rack Unit | | | | | Environmenta | al | | |
| | December 1 11 - 11 - 11 - | IT for as to | h = 0000 | all a duelle of | Operating Temp | -30 to +50 °C (Anter | na/RF) | |
| st shelf (2RU): | ваseband distributes Tx Rx | IF from two modems to t | ne SSPA and | distributes | | 0 to +50 °C (Indoor Equipment) | | |
| RF Distribution | IF from LNB to modems | and SAA | | | Rainfall | 50mm/h Operationa 100mm/h Survival | 1 | |
| ssembly) | | | | | Wind Speed | 72km/h Operational | | |
| nd shelf (1RU): | SCPC modem (options | and features per custome | r spec) | | | 108km/h Survival | | |
| DM 625 modem) | SCPC modem (options and features per customer spec) | | | Humidity | 100% condensing (A 5 - 95% non-conden | | ment) | |
| | | | r spec) | | | | | |
| d shelf (1RU): | SCPC modem (options a | and features per custome | | | Packading | | | |
| , , | SCPC modem (options a (future use) | and features per custome | | | Packaging | | | |
| DM 625 modem) | (future use) | and features per custome tures per customer spec) | . 0000) | | 10 cases total | Pedestal Case | 43cm x 73cm x 84 | 4cm |
| DM 625 modem) h shelf (2RU): | (future use) | · | | | 10 cases total Case 1 | Pedestal Case | 43cm x 73cm x 8 29.5kg | |
| DM 625 modem) h shelf (2RU): iisco 2911 router) | (future use) Router (options and feat | · | . , | ed | 10 cases total | Pedestal Case Boom/Legs Case | | |
| DM 625 modem) h shelf (2RU): isco 2911 router) h shelf (1RU): | (future use) Router (options and feat SAA Module Contains a signal strength meter, ar | ures per customer spec) In integrated spectrum an Ind DVB receiver | alyzer, receiv | | 10 cases total Case 1 | | 29.5kg 26cm x 46cm x 1. 29.5kg 36cm x 99cm x 1. | 27cm |
| DM 625 modem) h shelf (2RU): isco 2911 router) h shelf (1RU): | (future use) Router (options and feat SAA Module Contains a signal strength meter, ar | tures per customer spec) in integrated spectrum an | alyzer, receiv | | 10 cases total Case 1 Case 2 | Boom/Legs Case | 29.5kg 26cm x 46cm x 1. 29.5kg | 27cm 04cm |
| DM 625 modem) h shelf (2RU): isco 2911 router) h shelf (1RU): AA/PS) | (future use) Router (options and feat SAA Module Contains a signal strength meter, ar PS supplies up to 100W power supply) | tures per customer spec) in integrated spectrum an nd DVB receiver @ 24V (for IDU), up to 40 | alyzer, receiv | | 10 cases total Case 1 Case 2 Case 3 Case 4 | Boom/Legs Case Reflector Case 1 Reflector Case 2 | 29.5kg 26cm x 46cm x 1. 29.5kg 36cm x 99cm x 1. 40.9kg 36cm x 99cm x 1. 40.9kg | 27cm 04cm 04cm |
| DM 625 modem) h shelf (2RU): isco 2911 router) h shelf (1RU): AA/PS) h shelf (1RU): | (future use) Router (options and feat SAA Module Contains a signal strength meter, ar PS supplies up to 100W | tures per customer spec) in integrated spectrum an nd DVB receiver @ 24V (for IDU), up to 40 | alyzer, receiv | | 10 cases total Case 1 Case 2 Case 3 | Boom/Legs Case Reflector Case 1 | 29.5kg 26cm x 46cm x 1. 29.5kg 36cm x 99cm x 1. 40.9kg 36cm x 99cm x 1. 40.9kg 68.6cm x61.6cm | 27cm 04cm 04cm |
| DM 625 modem) h shelf (2RU): isco 2911 router) h shelf (1RU): AA/PS) h shelf (1RU): C-Distribution) | (future use) Router (options and feat SAA Module Contains a signal strength meter, ar PS supplies up to 100W power supply) Distributes AC througho | tures per customer spec) in integrated spectrum an nd DVB receiver @ 24V (for IDU), up to 40 | alyzer, receiv | | 10 cases total Case 1 Case 2 Case 3 Case 4 | Boom/Legs Case Reflector Case 1 Reflector Case 2 | 29.5kg 26cm x 46cm x 1. 29.5kg 36cm x 99cm x 1. 40.9kg 68.6cm x61.6cm 68.8cg (est.) 68.6cm x 47.3cm | 27cm 04cm 04cm x 88. 6cm |
| DM 625 modem) h sheif (2RU): isco 2911 router) h sheif (1RU): AA/PS) h sheif (1RU): C-Distribution) Shock Protec | (future use) Router (options and feat SAA Module Contains a signal strength meter, ar PS supplies up to 100W power supply) Distributes AC througho | tures per customer spec) in integrated spectrum an nd DVB receiver @ 24V (for IDU), up to 40 | alyzer, receiv | | 10 cases total Case 1 Case 2 Case 3 Case 4 Case 5 | Boom/Legs Case Reflector Case 1 Reflector Case 2 Baseband Case | 29.5kg 26cm x 46cm x 1. 29.5kg 36cm x 99cm x 1. 40.9kg 68.6cm x 99cm x 1. 40.9kg 68.6cm x 47.3cm 71.3kg (est.) | 27cm 04cm 04cm x 88. 6cm x 88.6cm |
| DM 625 modem) h shelf (2RU): isco 2911 router) h shelf (1RU): AA/PS) h shelf (1RU): C-Distribution) Shock Protec: Rack Unit | (future use) Router (options and feat SAA Module Contains a signal strength meter, ar PS supplies up to 100W power supply) Distributes AC througho | tures per customer spec) in integrated spectrum an nd DVB receiver @ 24V (for IDU), up to 40 | alyzer, receiv | | 10 cases total Case 1 Case 2 Case 3 Case 4 Case 5 Case 6 Case 7 | Boom/Legs Case Reflector Case 1 Reflector Case 2 Baseband Case UPS Case X-Band 125W SSPA | 29.5kg 26cm x 46cm x 1. 29.5kg 36cm x 99cm x 1. 40.9kg 68.6cm x 61.6cm 66.8kg (est.) 68.6cm x 47.3cm 71.3kg (est.) 51.8cm x 39.3cm 35kg (est.) | 27cm 04cm 04cm x 88. 6cm x 88.6cm x 79.5cm |
| DM 625 modem) h shelf (2RU): isco 2911 router) h shelf (1RU): AA/PS) h shelf (1RU): C-Distribution) Shock Protec Rack Unit t shelf (3RU): | (future use) Router (options and feat SAA Module Contains a signal strength meter, ar PS supplies up to 100W power supply) Distributes AC througho ted UPS Electronics | tures per customer spec) in integrated spectrum an nd DVB receiver @ 24V (for IDU), up to 40 | alyzer, receiv | | 10 cases total Case 1 Case 2 Case 3 Case 4 Case 5 Case 6 | Boom/Legs Case Reflector Case 1 Reflector Case 2 Baseband Case UPS Case X-Band 125W SSPA X-Band Feed, | 29.5kg 26cm x 46cm x 1. 29.5kg 36cm x 99cm x 1. 40.9kg 68.6cm x 61.6cm 68.8cg (est.) 68.6cm x 47.3cm 71.3kg (est.) 51.8cm x 39.3cm 35kg (est.) 51.8cm x 31.0cm | 27cm 04cm 04cm x 88. 6cm x 88.6cm x 79.5cm |
| DM 625 modem) h shelf (2RU): isco 2911 router) h shelf (1RU): AA/PS) h shelf (1RU): C-Distribution) Shock Protec Rack Unit t shelf (3RU): | (future use) Router (options and feat SAA Module Contains a signal strength meter, ar PS supplies up to 100W power supply) Distributes AC througho | tures per customer spec) in integrated spectrum an nd DVB receiver @ 24V (for IDU), up to 40 | alyzer, receiv | | 10 cases total Case 1 Case 2 Case 3 Case 4 Case 5 Case 6 Case 7 | Boom/Legs Case Reflector Case 1 Reflector Case 2 Baseband Case UPS Case X-Band 125W SSPA | 29.5kg 26cm x 46cm x 1. 29.5kg 36cm x 99cm x 1. 40.9kg 68.6cm x 61.6cm 66.8kg (est.) 68.6cm x 47.3cm 71.3kg (est.) 51.8cm x 39.3cm 35kg (est.) | 27cm 04cm 04cm x 88. 6cm x 88.6cm x 79.5cm x 79.5cm |
| d shelf (1RU): DM 625 modem) h shelf (2RU): disco 2911 router) h shelf (1RU): AA/PS) h shelf (1RU): C-Distribution) Shock Protec: Rack Unit d shelf (3RU): apacity | (future use) Router (options and feat SAA Module Contains a signal strength meter, ar PS supplies up to 100W power supply) Distributes AC througho ted UPS Electronics | tures per customer spec) in integrated spectrum an nd DVB receiver @ 24V (for IDU), up to 40 | alyzer, receiv | | 10 cases total Case 1 Case 2 Case 3 Case 4 Case 5 Case 6 Case 7 Case 8 Case 9 | Boom/Legs Case Reflector Case 1 Reflector Case 2 Baseband Case UPS Case X-Band 125W SSPA X-Band Feed, LNB, cables Misc. Equipment | 29.5kg 26cm x 46cm x 1. 29.5kg 36cm x 99cm x 1. 40.9kg 68.6cm x61.6cm 66.8kg (est.) 68.6cm x47.3cm 71.3kg (est.) 51.8cm x 39.3cm 35kg (est.) 51.8cm x 31.0cm 24.5kg (est.) | 27cm 04cm 04cm x 88. 6cm x 88.6cm x 79.5cm x 79.5cm x 79.5cm |
| DM 625 modem) h shelf (2RU): isco 2911 router) h shelf (1RU): AA/PS) h shelf (1RU): C-Distribution) Shock Protec Rack Unit it shelf (3RU): id shelf (3RU): | (future use) Router (options and feat SAA Module Contains a signal strength meter, ar PS supplies up to 100W power supply) Distributes AC througho ted UPS Electronics Batteries | tures per customer spec) in integrated spectrum an nd DVB receiver @ 24V (for IDU), up to 40 | alyzer, receiv | | 10 cases total Case 1 Case 2 Case 3 Case 4 Case 5 Case 6 Case 7 Case 8 | Boom/Legs Case Reflector Case 1 Reflector Case 2 Baseband Case UPS Case X-Band 125W SSPA X-Band Feed, LNB, cables | 29.5kg 26cm x 46cm x 1. 29.5kg 36cm x 99cm x 1. 40.9kg 68.6cm x 99cm x 1. 40.9kg 68.6cm x 47.3cm 71.3kg (est.) 51.8cm x 39.3cm 35kg (est.) 51.8cm x 31.0cm | 27cm 04cm 04cm x 88. 6cm x 88.6cm x 79.5cm x 79.5cm x 79.5cm |

 Output Voltage
 120 V

 Reserve
 5 minutes @ full capacity

 Temperature
 0 - 40° C

n

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2.4M SigmaLink[™] AUTO Baseband Variant

| System | C-Band | | X-Band | | Ku-Band | |
|--|--|---|---|--|--|--|
| EIRP G/T | Rx N/A 18.5 dB/K | Tx 56.6 dBW N/A | Rx N/A 23.5 dB/K | Tx 58.7 dBW N/A | Rx N/A 27.2 dB/K | Tx 61.6 dBW N/A |
| Antenna | | | | | | |
| Frequency Midband Gain X-pol Axial Ratio Sidelobe Isolation | 3.625 - 4.2 GHz 38 dBi N/A 3.0 ITU 580 / IESS | 5.85 - 6.425 GHz 42.2 dBi N/A 2.3 207 | 7.25 - 7.75 GHz 43.7 dBi N/A 1.5 dB | 7.9 - 8.4 GHz 44.3 dBi N/A 1.5 dB Meets DSCS | 10.95 - 12.75 GHz 47.6 dBi -30dB on axis N/A | 13.75 - 14.5 GHz 49.2 dBi -30dB on axis N/A Meets IESS 208 |
| Tx - Rx Rx - Tx Reflector Size Antenna Travel Az | -60 dB 0 dBm input 2.4m, 4 piece segmen ± 35° fine adjust (360° | 0 dBm input -60 dB ted reflector, offset feed | -110 dB 0 dBm input 2.4m, 4 piece segmer ± 35° fine adjust (360° | 0 dBm input -110 dB ted reflector, offset feed | -110 dB 0 dBm input 2.4m, 4 piece segment ± 35° fine adjust (360° (| |
| El Pol Feed | 5 - 90° ± 90° 2-port circular | | $5 - 90^{\circ}$ $\pm 90^{\circ}$ 2-port circular | | 5 - 90° ± 90° 2-port linear | |

Transmit

| Output Frequency Reference Reference Level Output Power | C-Band 5.85 - 6.425 GHz 10 MHz 0 +/- 5 dBm 40 W | X-Band 7.9 - 8.4 GHz 10 MHz 0 +/- 5 dBm 40 W | Ku-Band 13.75 - 14.5 GHz 10 MHz 0 +/- 5 dBm 25 W |
|--|---|---|---|
| @ P1dB Gain (typical) Spectral Regrowth | 70 dB -26 dBc @ P1dB | 70 dB -26 dBc @ P1dB | 70 dB -26 dBc @ P1dB |
| Receive | | | |
| LNB NF Reference Reference Level Phase Noise | 0.5 10 MHz -5 +/- 5 dBm -73 dBc/Hz at 1 kHz -83 dBc/Hz at 10 kHz -93 dBc/Hz at 100 kHz | 0.8 10 MHz +2 +/- 5 dBm -75 dBc/Hz at 1 kHz -85 dBc/Hz at 10 kHz -95 dBc/Hz at 100 kHz | 0.8 10 MHz +2 +/- 5 dBm -65 dBc/Hz at 1 kHz -75 dBc/Hz at 10 kHz -85 dBc/Hz at 100 kHz |
| Input VSWR Output VSWR Conversion Gain Typical | 1.5 : 1 1.3 : 1 65 dBm | 1.3 : 1 1.3 : 1 55 dBm | 1.5 : 1 1.3 : 1 65 dBm |
| Output P1 dB Power Req Current Drain | 9 dBm 15 - 24 V on IF cable 550 mA | 5 dBm 15 - 24 V on IF cable 300 mA | 7 dBm 15 - 24 V on IF cable 200 mA |

| Indoor Powe | r Supply |
|--|--|
| Prime Power Output Voltage Consumption | 115 / 230 VAC 50 / 60 Hz 48V / 24V < 500 VAAC |
| Interfacility I | ∟ink Cable |
| Length | 10m (Standard) 30m (Optional) Ionger lengths available on request |
| Environment | al |
| Operating Temp | -40 to +60°C Operational (ODU) -50 to +70°C Survival (ODU) 0 - 50°C (IDU) |
| Rainfall | 50.8mm/h Operational 101.6mm/h Survival |
| Wind Speed | Up to 45 km/h Operational (no ballast or anchors) 30 Gusting to 45 km/h Operational (ballast or anchors) 96km/h Survival |
| Humidity | 0 - 100% condensing (Antenna / RF) 5 - 95% non-condensing (Indoor Equipment) |

Shock Protected Baseband

| Top Rack Unit: | System Controller, |
|-------------------|-----------------------------------|
| | Power Supply |
| Middle Rack Unit: | Pointing Tools |
| | (Spectrum Analyzer, DVB Receiver) |
| | SSPA Control and Management |
| | Ethernet Switch |
| Bottom Rack Unit: | Modem (user supplied) |



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