Norsat
International Inc.

30

SecureLink™

The Norsat SecureLink™ is the latest in a series of portable satellite terminals. The Norsat SecureLink™ is a complete Ku-band portable satellite terminal integrating a Paradise modem for broadband IP data transmission (from 64 Kbps - 9 Mbps). The new portable terminal is conveniently packaged into industrial cases. With its simple setup and alignment procedure, staff with minimal training can have the Norsat SecureLink™ up and transmitting in just a matter of minutes.

Buy Now!

The Norsat Advantage

The Norsat SecureLink™ is the first complete system to be designed from the groundup to deliver secure broadband data connectivity in a portable, rugged, and easy-to-use package. Only Norsat offers a complete solution including a carbon fiber segmented antenna, aluminum tripod, Paradise modem, laptop controller, system power supply, and full Ku-band RF chain with SSPA that packs into just three airline checkable cases. Norsat is also the first in the industry to incorporate an easy-to-use graphical user interface for antenna alignment, spectrum analyzer, and transmitter and modem control.

Portable. Intelligent. Tough.

Only the Norsat SecureLink™ provides a quick assembly antenna platform that can be setup in 5 minutes without tools. It comes complete with a compass, inclinometer, and GPS to aid in alignment. The sophisticated Norsat SecureLink™ software makes antenna alignment easy for even novice users through its alignment wizard, beacon detector, and built-in spectrum analyzer. To further simplify operation in the field, a full range of settings can be pre-configured in user selectable profiles before the Norsat SecureLink™ is sent out on an assignment. The Norsat SecureLink™ is truly changing portable satellite communications by eliminating the need to include an RF engineer on every assignment.

Portable

Man Portable
Fits in Small Vehicles
Helicopter Friendly
Quick Assembly without Tools

Intelligent

Auto-Acquire
Intuitive Interface
Remote Operation
All-inclusive

Tough

Built Rugged
Shock Protected
Environmental Controls
Hermetically Sealed Electronics

SecureLink iDirect™

Antenna

Transmit Frequency	13.75 -14.5 GHz
Receive Frequency	10.95-12.75 Ghz
EIRP	53 dBW (20W) other power amplifiers available
G/T	21 dB/K
Antenna	1m diamond, carbon fiber, segmented (4 pieces)
Antenna Tx Gain	42 dBi
Antenna Rx Gain	40.5 dBi
Antenna Platform	Aluminum Tripod
Polarization	Cross-Pol (Standard) / Co-Pol (Optional)
Elevation Adj.	10° - 90°
Azimuth Adj	360°

Pointing Tools

Onboard Spectrum Analyzer, Received Signal Strength Indicator, DVB Receiver, Compass, Inclinometer, GPS, Norsat proprietary LinkControl with Satellite Almanac, Antenna Alignment Wizard

Transmit

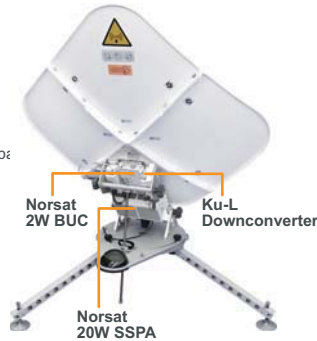|	
Frequency Range	
Output	
3210-20W-R-iDxx	14.0 - 14.5 GHz
3210-20W-E-iDxx	13.75 - 14.5 GHz
Input	
3210-20W-R-iDxx	950 - 1450 MHz
3210-20W-E-iDxx	950 - 1700 MHz
LO Frequency	
3210-20W-R-iDxx	13050 MHz
3210-20W-E-iDxx	12800 MHz
Reference Signal Frequency	external 10 MHz (supplied by Baseband)
10 MHz power level	-5 to +5 dB
Reference Input Impedance	50 Ω
Output Power	
Saturated Power (typical)	25W
Rated Power (P1dB) @ Amplifier Flange (minimum)	20W
Gain	
Small Signal, typical	75dB
Maximum SSG Variation Over Any Narrow Band	± 1 dB per 54MHz
Spectral Regrowth at Rated Power	-26 dBc

Norsat 2W BUC
Ku-L Downconverter
Norsat 20W SSPA

Receive

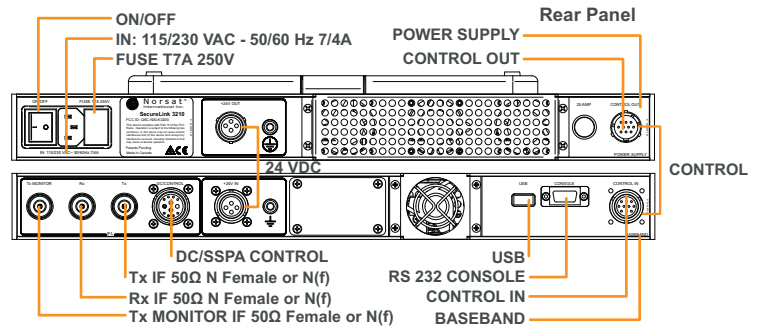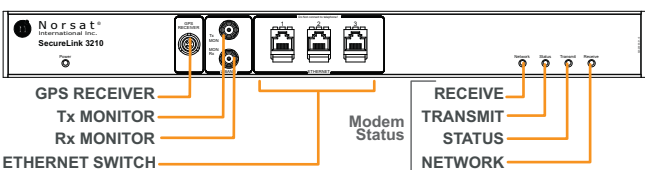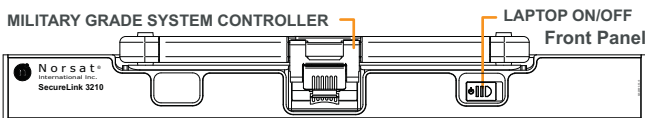|	
LNB Noise Figure (typical)	0.8 dB
L.O. stability maximum (over temperature)	±15 kHz
Phase noise (SSB) maximum	-65 dBc/Hz at 1kHz -75 dBc/Hz at 10kHz -85 dBc/Hz at 100kHz
Input/Output VSWR maximum	2.2 : 1
Conversion gain	55 dB min, 70 dB max
Output P1dB maximum	7 dBm
Power requirements	+15 to +24 V supplied through center conductor of IF cable
Current drain maximum	200 mA

Norsat LNB

Interfacility Link Cable

Length	10m (Standard) 30m (Optional) longer lengths available on request

Shock Protected Baseband

Top Rack Unit:	System Controller, Single Point Power Supply
Middle Rack Unit:	Modem, Pointing Tools (Spectrum Analyzer, DVB Receiver) SSPA Control and Management Ethernet Switch
Bottom Rack Unit:	Available for Customer Equipment

3 RU Custom Case

MILITARY GRADE SYSTEM CONTROLLER
LAPTOP ON/OFF
Front Panel

Norsat® International Inc. SecureLink 3210

Norsat® International Inc. SecureLink 3210

GPS RECEIVER
Tx MONITOR
Rx MONITOR
ETHERNET SWITCH
Modem Status
RECEIVE
TRANSMIT
STATUS
NETWORK

ON/OFF
IN: 115/230 VAC - 50/60 Hz 7/4A
FUSE T7A 250V
POWER SUPPLY
CONTROL OUT
Rear Panel

Norsat SecureLink 3210

24 VDC
CONTROL

DC/SSPA CONTROL
Tx IF 50Ω N Female or N(f)
Rx IF 50Ω N Female or N(f)
Tx MONITOR IF 50Ω Female or N(f)
USB
RS 232 CONSOLE
CONTROL IN
BASEBAND

Built-in iDirect Modem

	NetModem II+ (iD II+)	Series 3000 (iD 3k)	Series 7000 (iD 7k)
Network Topology			
Star	●	●	●
Star/Mesh			●
SCPC	●		●
Channel Rates			
Receive	64 ksps to 5.75 Msps	to 11.5 Msps	to 11.5 Msps
Transmit	64 ksps to 2.875 Msps	to 2.875 Msps	to 2.875 Msps
Modulation			
QPSK	●	●	●
BPSK		●	●
8PSK	Downstream Only		●
IP Data Rates			
Downstream	128 kbps - 18Mbps	128 kbps - 18Mbp	128 kbps - 18Mbps
Upstream	64 kbps - 4.2Mbps	64 kbps - 4.2Mbps	64 kbps - 4.2Mbps
FEC			
Downstream	0.793, 0.495	0.879, 0.793, 0.533,0.495,0.431	
Upstream	0.793, 0.66	0.793,0.66,0.533,0.431	
Protocols Supported	TCP; UDP; ICMP; IGMP; RIP ver 2; Static Routes; NAT; DHCP; DHCP Helper; Local DNS Caching; CRTP (series 3000/7000)		
Security	3DES (optional)	AES or 3DES (optional)	

Built-in Military Grade System Controller

Operating System	Microsoft(R) XP Tablet Edition
Screen	264mm Touchscreen XGA LCD, TFT sunlight readable
Keyboard	87 Key Compact, Sealed
CPU	Intel® CoreTM Duo Processor L2400 (1.06 GHz) Low power, shock mounted, fully sealed
Physical	Ruggedized MIL-Spec Laptop 1RU 254mm deep rack enclosure 482 x 44 x 254mm (WxHxD)
MIL-STD 810F	514.5 I (vibration) 516.5 IV (freefall) 501.4 I & II (stabilized temp.) 503.4 I (sudden changes) 506.4 III (falling or sprayed liquids)

Built-in Power Supply

Prime Power	110/220 VAC 50/60Hz
Optional DC	12 or 24VDC Inverter (Optional)
Consumption	Physical 1RU 152mm deep rack enclosure 650 vA AC 482 x 44 x 152mm (WxHxD)
Physical	1RU 152mm deep rack enclosure

Mobile Wireless Display (Optional)

Resolution	1024 x 768 (XGA transmissive)
Brightness	460 nit LCD (user adjustable from 5 nit)
DC Input Range	10 - 36 VDC
Weight	1.2kg
Dimensions	267mm x 208mm x 36mm
MIL-STD 810F	Vibration and Shock Resistant Water and Dust Resistant

Environmental

Operating Temp	-30 to +50 °C (Antenna/RF) 0 to +50 °C (Baseband)
Rainfall	15mm/h Operational 30mm/h Survival
Wind Speed	60km/h Operational 100km/h Survival
Humidity	95% non-condensing

Packaging

3 Cases (incl. power supply) 711 x 406 x 660mm (WxHxD) each 32 Kg each

SecureLink™ Paradise

Antenna

Transmit Frequency	13.75 GHz -14.5 GHz / 14.0 GHz - 14.5 GHz
Receive Frequency	10.95GHz -12.75 Ghz
EIRP	53 dBW (20W)
	54 dBW (25W)
G/T	21 dB/K
Antenna	1m diamond, carbon fiber, segmented (4 pieces)
Antenna Tx Gain	42 dBi
Antenna Rx Gain	40.5 dBi
Antenna Platform	Aluminum Tripod
Polarization	Cross-Pol (Standard) / Co-Pol (Optional)
Elevation Adj.	10° - 90°
Azimuth Adj	360°

Pointing Tools

Onboard Spectrum Analyzer, Received Signal Strength Indicator, DVB Receiver, Compass, Inclinometer, GPS, Norsat proprietary LinkControl with Satellite Almanac, Antenna Alignment Wizard

Transmit

Frequency Range
Output
3210-20W-R-PD25	14.0 GHz - 14.5 GHz
3210-20W-E-PD25	13.75 GHz - 14.5 GHz

Input
3210-20W-R-PD25	950 - 1450 MHz
3210-20W-E-PD25	950 - 1700 MHz

LO Frequency
3210-20W-R-PD25	13050 MHz
3210-20W-E-PD25	12800 MHz

Reference Signal Frequency	external 10 MHz (supplied by Baseband)
10 MHz power level	-5 to +5 dB
Reference Input Impedance	50 Ω

Output Power
Saturated Power (typical)	25W	32W
Rated Power (P1dB) @ Amplifier Flange (minimum)	20W	25W

Gain
Small Signal, typical	75dB
Maximum SSG Variation Over Any Narrow Band	± 1 dB per 54MHz
Spectral Regrowth at Rated Power	-26 dBc

Receive

LNB Noise Figure (typical)	0.8 dB
L.O. stability maximum (over temperature)	±15 kHz
Phase noise (SSB) maximum	-65 dBc/Hz at 1kHz -75 dBc/Hz at 10kHz -85 dBc/Hz at 100kHz
Input/Output VSWR maximum	2.2 : 1
Conversion gain	55 dB min, 70 dB max
Output P1dB maximum	7 dBm
Power requirements	+15 to +24 V supplied through center conductor of IF cable
Current drain maximum	200 mA

Interfacility Link Cable

Length	10m (Standard) 30m (Optional) longer lengths available on request

Shock Protected Baseband

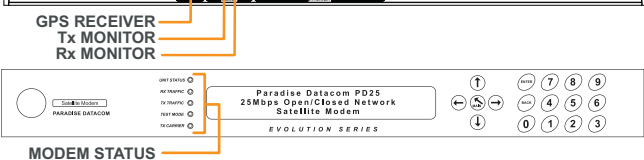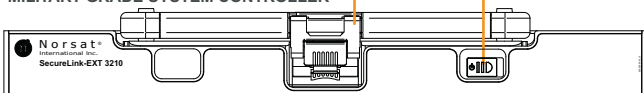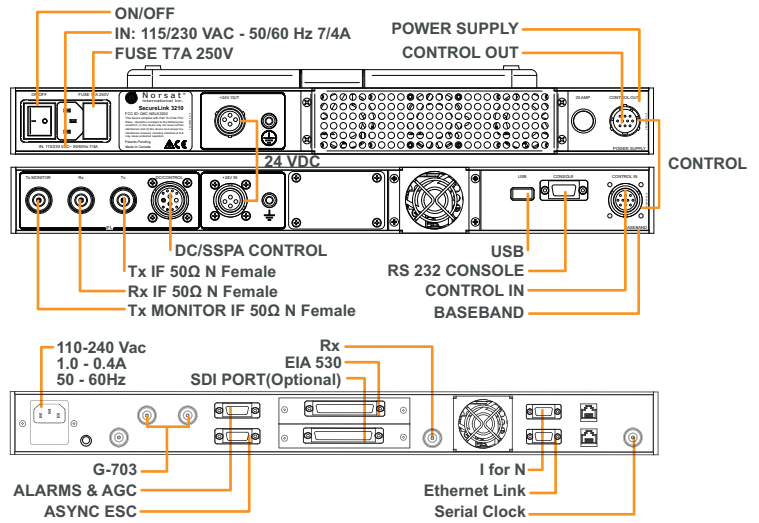|	
Top Rack Unit:	System Controller, Single Point Power Supply
Middle Rack Unit:	Pointing Tools (Spectrum Analyzer, DVB Receiver) SSPA Control and Management Ethernet Switch
Bottom Rack Unit:	Paradise Modem

3 RU
Custom Case

Front Panel
MILITARY GRADE SYSTEM CONTROLLER   LAPTOP ON/OFF

Norsat International Inc.
SecureLink-EXT 3210

Norsat International Inc.
SecureLink-EXT 3210

GPS RECEIVER
Tx MONITOR
Rx MONITOR

Paradise Datacom PD25
25Mbps Open/Closed Network
Satellite Modem
EVOLUTION SERIES
PARADISE DATACOM

MODEM STATUS

Rear Panel

ON/OFF
IN: 115/230 VAC - 50/60 Hz 7/4A
FUSE T7A 250V
POWER SUPPLY
CONTROL OUT
24 VDC
CONTROL

DC/SSPA CONTROL
Tx IF 50Ω N Female
Rx IF 50Ω N Female
Tx MONITOR IF 50Ω N Female
USB
RS 232 CONSOLE
CONTROL IN
BASEBAND

110-240 Vac
1.0 - 0.4A
50 - 60Hz
Rx
EIA 530
SDI PORT(Optional)

G-703
ALARMS & AGC
ASYNC ESC
I for N
Ethernet Link
Serial Clock

Ethernet Data Interfaces	10/100 Base-T on RJ-45 TCP acceleration to 5 Mbps IEEE 802.1p QoS, supporting choice of strict priority queuing or fair weighting queuing IEEE 802.1q VLAN DHCP, allowing dynamic IP address allocation via external DHCP server UDP and IP packet header compression up to 2 Mbps
Serial Data Interface	EIA 530 DCE, with selectable RS-422 / X.21 / V.35 / RS-232
Modulator	Data rates from 4.8 kbps to 2 Mbps (optional to 25 Mbps) in 1 bps steps BPSK, QPSK, OQPSK modulation Viterbi FEC rates 1/2, 3/4, 7/8 Intelsat Reed-Solomon outer codec Automatic Uplink Power Control (AUPC) operating through ESC L-band 950MHz - 1950MHz in 100Hz steps

Built-in Military Grade System Controller

Operating System	Microsoft(R) XP Tablet Edition		
Screen	264mm Touchscreen XGA LCD, TFT sunlight readable		
Keyboard	87 Key Compact, Sealed		
CPU	Intel® CoreTM Duo Processor L2400 (1.06 GHz) Low power, shock mounted, fully sealed		
Physical	Ruggedized MIL-Spec Laptop 1RU 254mm deep rack enclosure 482 x 44 x 254mm (WxHxD)		
MIL-STD 810F	514.5		(vibration)
	516.5	IV	(freefall)
	501.4	I & II	(stabilized temp.)
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Built-in Power Supply

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Physical	1RU 152mm deep rack enclosure

Mobile Wireless Display (Optional)

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Brightness	460 nit LCD (user adjustable from 5 nit)
DC Input Range	10 - 36 VDC
Weight	1.2kg
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Rainfall	15mm/h Operational 30mm/h Survival
Wind Speed	60km/h Operational 100km/h Survival
Humidity	95% non-condensing

Packaging

x 406 x 660mm (WxHxD) each
kg each

v.9829425SNT-PD