9-Series
A Path Forward

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As of May 1, 2021 ST Engineering iDirect's 8-Series product line will reach End-of-Support. When initially introduced, the 8-Series satellite modems dramatically changed satellite communications for our government and military customers. SCPC was no longer the communications standard. Instead, TDMA and DVB-S2/ACM became the norm. The 8-Series remotes brought increased levels of security and speed. But as our customers' needs have continued to evolve, so have our solutions.

The Time to Upgrade is NOW

ST Engineering iDirect's 9-Series modems, our most powerful, secure modems to date, deliver enhanced capabilities and features designed to make existing networks run with even greater performance, flexibility, efficiency, and improved Size, Weight, and Power (SWaP). The core 9-Series modems are available in three form factors: 950mp board satellite modem, 900 board satellite modem, and the 9350 satellite modem. Additionally, we have three airborne variants: the 980 board satellite modem, the 9800 AE satellite modem (based on the ARINC 600 enclosure) and the 9800 AR satellite modem.

EVOLUTION DEFENCE

powered by
Newtec iDirect

950mp

When the e850mp was first introduced it changed the man portable market by providing a compact SATCOM solution that could easily be transported in a service member's rucksack. Size, weight, and power are essential when outfitting the military. When developing the 950mp, reducing SWaP was essential. We now have a product with an overall 30% reduction in SWaP. The 950mp is 46 sq. inches and 1.45 lbs. compared to the 69 sq. inches and 2 lbs. of its predecessor the 850mp. The reduction of the 950mp directly led to an overall size and weight reduction for man portable terminals.

In addition to bringing down the size and weight, the 950mp uses Transmit Keyline, reducing the power consumption to 20 watts from 44 watts and prolonging the battery life during operation. Maintaining satellite communications is a critical requirement for the 950mp in which the only available power comes from batteries or from a small generator with limited fuel. The overall design of the 950mp makes it overall more energy efficient than its predecessor the e850mp.

900 and 9350

The 900 and the 9350 are the new "work horse" remotes for command and control communications replacing the e800 and e8350. Like their predecessors, the 900 is a board level satellite modem and the 9350 is a 1 RU, 19" rackmount with an integrated 900 board.

The 900 and 9350 both feature dual demodulators. The demodulators can be deployed using a single antenna that has the signal go to both demodulators (1 antenna, 2 carriers), or be configured with two antennas that go to two separate demodulators (2 antennas, 1 carrier each).

Dual-Mode

Dual-mode gives users the benefit of targeted connectivity combined with ubiquitous global coverage. ST Engineering iDirect's 9-Series modems can operate on both Evolution and Velocity networks, giving the user unparalleled flexibility.

Security

FIPS

While our 8-Series remotes were FIPS140-2 Level 2 certified, all remotes in the 9-series family are FIPS 140-2 Level 3 certified. This higher level of certification provides the user with confidence that not only are these remotes tamper-evident like the 8-Series, but tamper evidence has been taken a step further in that the modem will zeroize all plaintext critical security parameters when the cryptographic module is subject to unauthorized access. The 9350 also supports a zeroize button that the user can trigger for zeroization of the cryptographic module.

TRANSEC

With the release of the 9-Series satellite modems and Defense Line Cards (DLCs), ST Engineering iDirect has delivered a TRANSEC module designed to meet the stringent FIPS 140-2 Level 3 requirements as defined by the National Institute of Standards and Technology (NIST). Through hardware and software development, the embedded yet independent TRANSEC module operates through a separate and trusted path from all other interfaces on the product. The module features a robust physical security measure for tamper prevention and the capability to zeroize the security keys or critical security parameters (CSPs) stored on the module itself. If required, the revocation of keys or the zeroization of the remotes can be accomplished either over-the-air (OTA) by the hub operator or locally on the remote by authorized personnel.

ST Engineering iDirect has further enhanced its TRANSEC capabilities by securing one-way broadcast transmissions. Based on its encapsulation method, our platform can provide the same level of security for one-way networks as it provides for two-way networks mentioned above. The 900 and 9350

modems with dual-modulator support are capable of dual-domain TRANSEC – the ability to establish two independent chains of trust (sets of X.509) between two different Certificate Authorities (CAs).

An example of this feature is having one demodulator on a two-way TRANSEC network while the second demodulator receives a separate one-way TRANSEC secured broadcast. With one-way TRANSEC, Elliptical Curve Cryptography (ECC) is used for key generation along with X.509 certificates for authentication in each security domain.

ST Engineering iDirect's 9-Series Satellite Modems and DLCs have been designed to balance higher performance and data rates plus increased functionality and security with the solid reliability the ST Engineering iDirect brand represents.

Information Assurance

SHIELD is a service available to users operating 9-Series modems beginning with major Evolution Defense release 4.2.2.0. ST Engineering iDirect identifies potential vulnerabilities in modems using an U.S. DoD-approved scanning tool called Nessus developed by Tenable. The Nessus scanner identifies vulnerabilities that could allow unauthorized control or access to sensitive data, misconfiguration, default passwords and service vulnerabilities.

SHIELD scans are conducted to evaluate the 9-Series modems for vulnerabilities that hackers could use to access a system or network. The data is then used to design a Remote Security Bulletin (RSB) that is posted to the ST Engineering iDirect TAC website for SHIELD subscribers to load to their modem hardware. These security update packages for modems are targeted for a semi-annual cadence and cover all 9-Series modems including airborne variants.

Signal Excision

Available via license on 9-Series modems, ST Engineering iDirect addresses the concern of interference through signal excision technology. Owned by our U.S. proxy, iDirect Government, iDirectGov's Communications Signal Interference Removal (CSIR) eliminates an interfering signal from the authorized signal of interest (SOI). With only the SOI's center frequency, bandwidth and symbol rate information, iDirectGov's CSIR will monitor and remove an interfering signal in real time. iDirectGov's CSIR can remove a variety of unwanted signals, whether they are modulated carriers,

unmodulated tones or interference that changes characteristics (such as burst or frequency hopping).

iDirectGov CSIR is a mature digital signal processing solution designed to excise an interfering signal before it reaches the receiver's demodulator and decoder. Based on the SOI's information noted above, iDirectGov CSIR can monitor and remove an interfering signal with as little as 1dB of power separation from the SOI. Additionally, iDirect CSIR has little to no effect on the signal quality of the SOI.

Why Wait?

So, what are you waiting for? The time to upgrade is NOW! The 8-Series remotes are approaching End of Support on May 1, 2021. Contact your ST Engineering iDirect account team today to take advantage of all the features and functionalities of our 9-Series and have the most powerful and secure SATCOM network available.

9-Series Advantages over 8-Series

Features	8-Series (e850mp, e800)	9-Series (900, 950mp)
Max Single Channel TDMA Symbol Rate	7.5 Msps	29 Msps
Packet Per Second (PPS)	Up to 5,000	Up to 80,000
Multi-Image Support	1	4
Status Interface	Systray	Web API
Power Required	44 watts (e850mp)	20 watts (950mp)
Footprint	69 Square Inches (e850mp)	46.2 Square Inches (950mp)
DVB-S2 Demodulator Support	1	2 (900)
Velocity HTS Support	No	Yes
FIPS Certification	FIPS 140-2 Level 2	FIPS 140-2 Level 3
WGS Certification	Yes (limited to iDX 3.4.3.8)	Yes
Transport Layer Security (TLS) Support	1.1	1.2
SHIELD (IA)*	No	Yes
CSIR	No	Yes