

S | L I C E | E 2100TM

POWERED BY
TRANSip

Converged capabilities in a single 1U platform
for Government & Defense Communicators



REDCOM IS INTEROPERABILITY

- ✓ Certified as a Local Session Controller and listed on DISA's Approved Products List
- ✓ Priority and Preemption Capabilities
- ✓ Interoperable with VoIP, TDM, SATCOM, Cellular, GSM, Radios, WiFi, WiMax, & Magneto
- ✓ SIP-Based Industry-Standard Architecture
- ✓ Extreme Conferencing Capabilities
- ✓ Secure Tactical and Strategic Communications

REDCOM: Proven and Battle-Tested

For more than 30 years, REDCOM has provided rugged and reliable communications systems for the U.S. military and its allies. REDCOM has a long history of successful deployments in leading Department of Defense communications programs such as DTC, JECCS, JNN, TDC-ICAP and TSM as well as the Virginia Class submarine and British Navy's Astute Class Submarine.



Certified as a Local Session Controller (LSC)

The SLICE 2100 Version 4.0 is certified as a Local Session Controller (LSC) by the Defense Information Systems Agency (DISA) Unified Capabilities Certification Office (UCCO) and is listed on the Unified Capabilities (UC) Approved Products List (APL). Warfighters on today's battlefields can be confident their calls will get through when backed by the extensive interoperability of the SLICE 2100.

Interoperability & IP Convergence

Interoperability and the need for a low risk migration to IP, necessitates that legacy devices/networks continue to be supported to retain communications integrity. REDCOM's SLICE 2100 is designed as a fully integrated TDM/VoIP platform that converges tactical and strategic networks for maximum interoperability including: SIP, AS-SIP/UC-SIP, SCIP, V.150.1, GSM, Radio, SATCOM, ISDN PRI, Euro PRI, IPv4, IPv6, and Magneto. Warfighters can leverage existing communications functionality while migrating to current and next generation communications.

Precedence & Preemption

The SLICE 2100 provides Multi-Level Precedence and Preemption (MLPP), including industry standard ANSI 619a, for comprehensive end-to-end war-fighter communications. This essential element of Command and Control ensures that the most important calls get through during critical situations.

TRANSip® IP Technology Suite

TRANSip is REDCOM's IP telephony technology suite that integrates the benefits of IP and TDM technologies, providing Call Management, Media Gateway Services, Media Gateway Controller, IP Subscriber Database, and Call Detail Records. REDCOM's Media Gateway provides warfighters with reliable five nines connectivity between multiple legacy interfaces and current generation communications platforms.

Secure Communications

REDCOM's SLICE 2100 connects multi-technology networks and supports secure communication via SCIP and V.150.1. In addition, Secure Real-time Transport Protocol (SRTP) and Transport Layer Security (TLS) are available to provide media and SIP signaling encryption as well as client authentication. REDCOM's Secure Device Module ensures SLICE 2100 interoperability with commercially available voice encryption devices. SLICE 2100 allows a Type 1 secure IP phone to directly and securely call a secure analog device.

Extensive Conferencing

REDCOM's SLICE 2100 supports several conferencing styles, including *progressive* (participants added one at a time), *meet-me* (participants meet at a specified time), *preset* (conference controller initiates the event, adding participants as they answer) or any combination of these methods.

Advanced Secure Gateway

With REDCOM's Advanced Secure Gateway Application, a warfighter on the DSN network using a SCIP device can simply dial the published station number of a user on a classified network. The published number is translated and delivered to the classified user without requiring a secondary dial tone or over-dialing. When SCIP devices on the DSN and REDCOM Gateway go secure, a classified conversation can be held between the two users. Additionally, REDCOM's Advanced Secure Gateway provides secure conferencing between users on multi-technology networks, facilitating secure conferencing between Joint, NATO and Coalition Forces. This was successfully demonstrated at the 2012 Joint Users Interoperability Communications Exercise (JUICE).

Proven Interoperability



Military and Commercial Radio Interface

The SLICE 2100's Radio Interface Module allows any REDCOM system phone to dial out to a remote radio, and allows a radio to dial directly into the system and ring a phone, make an outside call, or call another remote radio system. Full two-way calling with Push to Talk (PTT), Voice Operated Transmission (VOX) or Carrier Operated Relay (COR) is supported. REDCOM technology also removes the repeater squelch found in commonly used analog radios. REDCOM's Radio Interface is interoperable with encrypted military radios and verifies the radio is secure before the voice transmission is enabled.

Administration & Control

REDCOM offers products to facilitate a single point of OA&M at your Network Management Operations Center.

- **Link Command System (LCS)** is a PC-based GUI call management system that delivers extensive call control, call handling, directory assistance requests, and call queue management.
- **MAUI (Maintenance Administration and User Interface)** is a PC-based GUI which provides a single point for OA&M, simplifying the task of administering your REDCOM SLICE 2100.



REDCOM SLICE 2100 TCP

RUGGED.

REDCOM's Tactical Communications Package (TCP), equipped with the REDCOM SLICE 2100, is interoperable, battle-tested, and portable. The case-mounted switches meet stringent government and defense specifications for impact and vibration, able to endure the harsh conditions of airlift, seaborne and off-road transport.

RELIABLE.

Military, emergency responders, carriers and utilities rely on REDCOM's 99.999% ("five nines") Carrier-Class reliability for dependable performance. The most challenging conditions on earth: Alaskan cold, South Pacific heat/humidity and Middle East desert heat/sand are all home to REDCOM systems.

READY.

The SLICE 2100 TCP is completely customizable, enabling integration of specific communication equipment, including encryption devices, for unique operational requirements. REDCOM's SLICE 2100 TCP can be prewired and configured to be set-up and operational within minutes of deployment and a flip of the power switch.

Interchangeable Plug-in Modules

The SLICE 2100 has two rear-accessible positions for your choice of interface modules. These modules allow communicators to configure each SLICE 2100 to meet specific mission requirements.



Line Module

- Available in two configurations:
 - 12 Loop Lines, 1 test access jack and 2 ISDN BRI-S (2B+D) Lines (shown above)
 - 24 Loop Lines and 1 test access jack



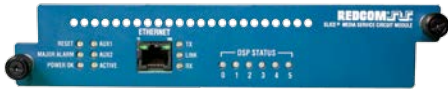
Line/Trunk Module

- 10 Loop/Magneto Lines
- 2 ISDN BRI-S (2B+D) Lines
- 2 E&M/SF Trunks
- 2 GSRD/LSRD Trunks



Multi-E1/T1 Module

- 4 E1/T1 Spans
- 4 general-purpose DSPs: DTMF, MF/R1, MFC R2, Echo Cancellation
- Support for Primary Rate ISDN
- Integrated SS7 support (8 links per module)



Media Services Circuit Module

- Provides the SLICE 2100 with an additional 128 timeslots per module:
 - Allows more simultaneous TDM-IP calls
 - Provides extra bandwidth for gateway applications
- 1 10/100 Ethernet Port



Radio Interface Module

- An interface to two-way radios allowing a radio user to access most of the SLICE 2100's features normally accessible to a standard station user
- Allows any phone in the REDCOM system to dial out to a radio net
- Allows a remote radio to dial directly into the system or call another radio network



Secure Device Module

- 4 interface ports for Sectera® Wireline Terminal (Type 1) or TalkSECURE™ (non-Type 1) devices
- Each port consists of an RS-232 interface and a two-wire audio interface that can be configured as ground or loop start
- Separate audio and call control data to each secure device

SLICE 2100 Specifications

Physical Specifications

- Width:** 19 in rack mount; 17.5 in / 44.5 cm
- Height:** 1U 1.75 in / 4.4 cm
- Depth:** 17.5 in / 44.5 cm
- Weight:** 16 lbs. / 7.3 kg*
- Power:** 2.3 amps @ -48 VDC
- Communication Ports:**
 - Two RS-232 Ports
 - Two 10/100 Ethernet ports
- Environment:**
 - Operating temperatures: 32–122 °F / 0–50 °C ambient
 - Operating humidity: 5%–90% (non-condensing)
- Dual PCMCIA slots for program update & database backup
- Hot-swappable Cooling Module
- Two software-selectable T1/E1 digital spans

Optional Interfaces

- Test Access Jack¹
- Up to 48 analog line circuits²
- Up to 4 ISDN BRI-S Lines³
- Up to 4 E&M/SF Trunks⁴
- Up to 4 GSRD/LSRD Trunks⁴
- Up to 6 T1/E1 digital spans⁵
- Radio Interface (Military and Civilian Radios)⁶

Signaling & Protocols

- DTMF & RFC 2833
- MF/R1, FG-C&D
- MFC R2
- ISDN PRI (4ESS, 5ESS, NI1, DMS100, DSN & Euro)
- ISDN BRI (5ESS, NI1 & Euro)
- ANSI SS7 & ITU C7 (up to 3 SS7 links)
- SIP RFC 3261
- E&M
- GSRD/LSRD

Access Solutions

- AS-SIP/UC-SIP
- SIP
- GR-303 (up to 4 GR-303 Interface Groups)
- V5.2
- FXO/FXS
- ISDN BRI
- Direct wire 2-wire subscribers
- Broadband Loop Carrier (BLC)

Telephony Features

- ClusterNet™ Network Technology
- CLASS™ Features
- LNP
- Emergency Services (911)
- Centrex
- Percentage Trunking

Network Interfaces

- IP: Auto-detect 10/100 Ethernet
- TDM: T1/E1
- Management: Ethernet and serial console access

Network Management

- SNMP support for alarms and system monitoring
- Management of multiple systems via REDCOM MAUI

Compliance

- CALEA: TIA J-STD-025A and J-STD-025B
- Electromagnetic compatibility: FCC Part 15 Class A
- Industry Canada CS-03
- FCC Part 68/ACTA TIA-968-A

Government & Defense Interoperability

- Networks:** DSN (ANSI 619a), PSTN, ISDN, SS7, R2, E1, E1 Priority
- Wireless:** Federal & Civil Radios, GSM
- Secure Interoperability:** SWT, SCIP, Iridium Type I, GSM Type I, STE, NBS, LTU-TED, Secure Tactical Radios
- TRI-TAC Networks:** Secure Dial, Secure Access, KY-68 2nd Dial, Red T1

IP Capabilities

- Up to 2,000 registered IP subscribers per unit
- SIP Trunking
- QoS: IP Differentiated Services (DiffServ) marking
- Echo cancellation: G.165, G.168 (up to 128ms)
- Silence Suppression: VAD
- Comfort Noise Generation
- Tone generation / detection (DTMF, MF, FSK)
- Onboard Conferencing: Preset, Meet-me, Progressive
- Integrated system announcements
- Custom User Recorded Announcements
- Dual Stack IP (IPv4, IPv6)
- Dynamic Host Configuration Protocol (DHCP)
- Domain Name System (DNS)
- Network Time Protocol (NTP)
- SIP Call Controller
- Media Gateway
- Media Gateway Controller
- Bandwidth Management (IP Subscribers & IP Trunks)
- RFC 3261, 3326, 4028
- Call Data Records (CDR)
- Audio Streaming RTP (RFCs 3550, 3551, 3389)

Codecs

- S RTP
- Adaptive Jitter Buffer
- Packet Loss Concealment
- Telephony Tones: RFC 2833
- Flexible tone generation for international call progress tones
- CLASS and Intercept Announcements
- SIP-based lineside features
- Bandwidth Management Capability
- G.711A&μ (64kbps PCM)
- G.723.1H&L
- iLBC
- G.726 (16, 24, 32, 40kbps ADPCM)
- G.729A&B (8kbps CS-ACELP)
- RFC 4040 (64 kbps)
- Fax over IP: T.38, Media Gateway Conversion (MGC) & Auto
- Modem over IP: V.150.1

¹ Requires Line Module • ² Requires 2 24-Port Line Modules • ³ Requires 12-Port Line Module or Line/Trunk Module • ⁴ Requires Line/Trunk Module • ⁵ Requires MET Module • ⁶ Requires Radio Interface Module
 Note: Some features are optional. Please contact REDCOM for a more detailed description of product features and capabilities. *Weight is dependent on module configuration. ©2012 REDCOM Laboratories, Inc. REDCOM, the REDCOM logo, SLICE and TRANSip are registered trademarks of REDCOM Laboratories, Inc. CLASS is a service mark of Telcordia. Sectera is a registered trademark and TalkSECURE is a trademark of General Dynamics. Subject to change without notice or obligation.