CELLDEFENDER™
Contraband cellular mitigation solution
## CONTRABAND PROTECTION TECHNOLOGY OPTIONS

<table>
<thead>
<tr>
<th>Manual search tools</th>
<th>Portable cellular base station simulators</th>
<th>Jammers</th>
<th>Cellular managed access</th>
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<td>Simple cellular localization</td>
<td>Smart radio frequency (RF) localization sensor</td>
<td>Potential capability Limited functionality</td>
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- **Wrong tool for the job**
- **Potential capability Limited functionality**
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**CONTRABAND PROTECTION TECHNOLOGY OPTIONS**

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- **Simple cellular localization**
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- **Portable cellular base station simulators**
- **Jammers**
- **Cellular managed access**

**L3HARRIS™ FAST. FORWARD.**
More than a simple managed access system, CellDefender is a comprehensive electronic threat detection and mitigation system.
Perimeter-based solution

- Controls phones fence to fence
- Coexists with the macro-network using a tightly controlled signal footprint

Manages all cell phone activity

- Authorized users have full access on any carrier
- Manages access for all others

Works with all cell phones

- Any provider, any cellular technology, any band
- Domestic or foreign
25+ year heritage

Cellular technology experience:

> GSM, CDMA 1xRTT, CDMA EVDO, iDEN, UMTS/HSPA, FDD-LTE, TDD-LTE, 5G ready

Wireless LAN

Communications, electronic warfare (EW) and signals intelligence (SIGINT) solutions

Products with lifecycle support
24x7 tech support
Classroom and on-site training
CELL PHONES ARE COMPLEX AND EACH ONE IS UNIQUE.

Understanding phone behavior is critical to managing them.

Every aspect of a cell phone gives it a unique "personality"
TECHNOLOGY IS EVER-EVOLVING

Questions still exist for 5G:

> When will it happen? → Timeline for 5G systems
> What will it do? → Driving requirements & use cases
> How will it work? → Potential technologies in 5G

L3Harris monitors cellular trends and proactively develops our solutions for 5G and beyond.
L3HARRIS DESIGN PROCESS

Successful cellular solutions do not “just happen”. Each CellDefender site is uniquely designed for success.
L3HARRIS DESIGN APPROACHES

Radio waves travel from transmitters to receivers via multiple paths. We utilize coverage prediction models to estimate design conditions. We extensively measure every site to validate the unique RF environment. Validation testing ensures ongoing success.

L3Harris uses comprehensive design approaches to ensure proper RF coverage.
CELLDEFENDER SYSTEM COMPONENTS

Main rack

- Ethernet
- Cellular surveyor
- Distributed antenna system (DAS) rack
- Fiber

Distributed antenna system (DAS) rack

- RF

Cellular base stations

- LTE
- UMTS
- GSM
- CDMA

Software licenses
- Controller applications
- Configuration files
- User interfaces

Ethernet

Network connectivity

- RF

DAS antennas

L3HARRIS™
FAST. FORWARD.
WEB-BASED INTERFACE ENABLES REMOTE OPERATIONS AND MANAGEMENT

System can be managed locally or at a centralized site.
<table>
<thead>
<tr>
<th>CELLULAR MANAGEMENT FEATURES</th>
</tr>
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<tbody>
<tr>
<td><strong>CELLULAR MANAGEMENT</strong></td>
</tr>
<tr>
<td>&gt; Cellular user activity detection and management</td>
</tr>
<tr>
<td>&gt; Voice, data, SMS (short message services)</td>
</tr>
<tr>
<td>&gt; All technologies, all bands</td>
</tr>
<tr>
<td>- GSM</td>
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<td>- CDMA 1xRTT/EVDO</td>
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<tr>
<td>- LTE</td>
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<tr>
<td>- 5G ready</td>
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<tr>
<td>&gt; Technology roadmaps to stay ahead of the providers</td>
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<tr>
<td><strong>AUTHORIZED USER ACCESS</strong></td>
</tr>
<tr>
<td>&gt; Whitelisting</td>
</tr>
<tr>
<td>&gt; Locally provided service (voice-over-IP)</td>
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<tr>
<td>&gt; Private roaming to commercial cellular networks</td>
</tr>
<tr>
<td><strong>LOGGING</strong></td>
</tr>
<tr>
<td>&gt; Registration events</td>
</tr>
<tr>
<td>&gt; Access attempts (call, data, SMS)</td>
</tr>
<tr>
<td>&gt; Power down events</td>
</tr>
<tr>
<td>&gt; Device ID (SIM, phone)</td>
</tr>
<tr>
<td>&gt; SOH, alarms</td>
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<tr>
<td><strong>CELLULAR ENVIRONMENT MONITORING</strong></td>
</tr>
<tr>
<td>&gt; Automated commercial network change detection</td>
</tr>
<tr>
<td>&gt; Operational self verification</td>
</tr>
<tr>
<td><strong>EMERGENCY CALL SUPPORT</strong></td>
</tr>
<tr>
<td>&gt; All 911 calls responded to (authorized &amp; unauthorized)</td>
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</table>
# Cellular Management Features

## Architected for Enterprise
- Integrated software security
- Networked security elements
- Controllable routing of authorized voice and data
- Site, regional or system-wide command and control

## State of Health (SOH)
- Local, remote SOH access
- Performance monitoring
- Fault alarms
- Status reporting

## Physical Security Features
- Integrated rack security
- Physical access mitigation
- System damage identification and reporting

## Optional Features
- Sensor types
  - WiFi/cellular user activity detection/localization
  - Drone detection
- Integrate data analytics & investigative tools
## CELLDEFENDER BENEFITS SUMMARY

1. Survey approaches drive system design

2. Connectivity approaches make a difference

3. Formalized test processes validate operational requirements

4. Continuous cellular environmental monitoring ensures ongoing success

5. Future-proof designs through technology monitoring and awareness
FREQUENTLY ASKED QUESTIONS

Is this a Jammer?
No, we provide preferred cellular service to ensure that devices which connect to our system do not look for service outside the network.

How is L3Harris footprint control better?
CellDefender’s design process was developed based upon extensive experience with radio network deployments and specifically with cellular systems. It is a thorough process that includes sophisticated signal modeling, RF design, radio selection, and design validation and verification processes that ensure the coverage is complete within the facility, while not extending outside.

How do you know it keeps working?
We are able to validate operation by monitoring system performance, equipment operational status and both internal and external network parameters.

How does an authorized user connect?
Authorized users can be connected in one of four ways. The least reliable or secure is to reject the phone to the outside network. The most secure method is to establish a roaming connection with the commercial network and is best suited for larger government agencies. Correctional facilities will likely use connections that are made using an in-house phone system or internet phone service (SIP/VoIP).

What happens with 911 calls?
All 911 calls are routed to a designated location for response. This can be either the local public safety answering point (PSAP), facility security office or any other number configured by the administrator.
FREQUENTLY ASKED QUESTIONS

What happens when the commercial network upgrades?
Once identified, a report will be generated for evaluation and recommendation. Many changes can be fixed with a software update, while others may require new modules.

Can you locate devices?
CellDefender is built with a modular approach to allow the addition of optional sensors to locate phones and non-cellular transmitters. These sensors are intended to be leveraged once the baseline cellular system is installed.

What happens when 5G is available?
When 5G is defined and implemented by industry, CellDefender will be ready to support that technology.

Is the system secure?
Yes. As a systems integrator for many national networks, L3Harris has designed the network, RF signals, software applications and physical equipment with the proper safeguards to prevent unauthorized access.

Do you record content?
No. CellDefender does not record content from cell phone communications.
CONTACTS

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CellDefender: A proven solution from a trusted provider.
L3Harris Technologies is an agile global aerospace and defense technology innovator, delivering end-to-end solutions that meet customers’ mission-critical needs. The company provides advanced defense and commercial technologies across air, land, sea, space and cyber domains.