The I•CODE HSL (High frequency Smart Label) IC is a dedicated chip for passive, intelligent tags and labels. It is especially suited for supply chain management and logistics applications in the US, where operating distances of several meters can be realized.

Features
- Long range solutions (up to 7m in the US)
- Suitable for UHF and 2.45 GHz RFID, allowing one tag to be used world-wide (except UHF in Japan)
- Fast data rate
  - forward link: 10 - 40 kbits/s
  - return link: 40 - 160 kbits/s
- 10% and 100% modulation for best fit into regulation requirements
- Can be used to build Intellitag™ products
- 2048 bit R/W Memory
  - 64 bits UID
  - 216 bytes with user-definable access conditions

Advantages
- New and most innovative UHF / GHz technology
- Tags / labels and readers will be available from various suppliers
- Backwards compatible to ANSI256 / Intellitag™
- First UHF products fitting to European regulations
- Highly advanced anti-collision and highest speed
- Broadest industry backup - EAN•UCC GTAG™ refers to ISO 18000-6
- Open product platform targeted to be compliant with ISO 18000-4 and ISO 18000-6

Applications
- Supply Chain Management
- Asset Management
- Container Identification
- Pallet Tracking
The I•CODE HSL is targeted to be compliant with the following Air Interface standards:
- ISO 18000-4 Mode 1 (2.45 GHz)
- ISO 18000-6 Type B (UHF)
- ANSI NCITS 256:1999 (R2001) Part 3 - 2.45 GHz
- ANSI NCITS 256:1999 (R2001) Part 4 - UHF

The I•CODE HSL is targeted to be compliant with the following Application Standards:
- ISO 18185 - Electronic Seal Tags (ISO TC 104)
- EAN•UCC GTAG™
- MH10.8.4 - Reusable Containers
- AIAG B-11 - Automotive Tire and Wheel Identification

Operating distances for I•CODE HSL based tags and labels in released frequency bands

<table>
<thead>
<tr>
<th>Frequency Range</th>
<th>Region</th>
<th>Available Power</th>
<th>Read Distance Single Antenna</th>
<th>Read Distance Gate</th>
</tr>
</thead>
<tbody>
<tr>
<td>869.4 - 869.65 MHz (UHF)</td>
<td>Europe</td>
<td>0.5 W ERP</td>
<td>1.6 m</td>
<td>3.2 m</td>
</tr>
<tr>
<td>865.5 - 867.6 MHz (UHF)</td>
<td>Europe</td>
<td>2.0 W ERP</td>
<td>3.2 m</td>
<td>6.4 m</td>
</tr>
<tr>
<td>902.0 - 928.0 MHz (UHF)</td>
<td>Europe</td>
<td>4.0 W EIRP</td>
<td>3.5 m</td>
<td>7.0 m</td>
</tr>
<tr>
<td>860.0 - 930.0 MHz (UHF)</td>
<td>Others</td>
<td>0.5 W ERP</td>
<td>0 - 3.5 m</td>
<td>0 - 7.0 m</td>
</tr>
<tr>
<td>2.400 GHz - 2.4835 GHz</td>
<td>Europe</td>
<td>4.0 W EIRP</td>
<td>0.35 m</td>
<td>0.7 m</td>
</tr>
<tr>
<td>2.400 GHz - 2.4835 GHz</td>
<td>Europe</td>
<td>4.0 W EIRP</td>
<td>1.0 m</td>
<td>2.0 m</td>
</tr>
<tr>
<td>2.400 GHz - 2.4835 GHz</td>
<td>America</td>
<td>4.0 W EIRP</td>
<td>0 - 1.0 m</td>
<td>0 - 2.0 m</td>
</tr>
<tr>
<td>2.400 GHz - 2.4835 GHz</td>
<td>Others</td>
<td>4.0 W EIRP</td>
<td>0 - 1.0 m</td>
<td>0 - 2.0 m</td>
</tr>
</tbody>
</table>

Notes:
1) Current CEPT/ETSI regulations: CEPT REC 70-03 Annex 1, ETSI EN 330 220-1
2) Proposal for future CEPT/ETSI regulations
3) FCC regulations, Part 15 Section 247
4) In many other countries regulations either similar to FCC or CEPT/ETSI apply. However, Japan does not allow RFID to be used in an UHF band around 860 MHz to 930 MHz.
5) Current CEPT/ETSI regulations: CEPT REC 70-03 Annex 11, ETSI EN 330 440-1
6) FCC regulations Part 15 Section 247
7) In many other countries regulations either similar to FCC or CEPT/ETSI apply.
8) These distances are typical values for general tags and labels. A special tag antenna design could achieve higher values.
9) Indoors only

Ordering Information

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Delivery Type Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SL3ICS30 01FW/V4</td>
<td>Bumped, sawn wafer on ffc, 150 µm, inked and mapped</td>
</tr>
<tr>
<td>SL3S30 01FT</td>
<td>TSSOP8</td>
</tr>
</tbody>
</table>

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