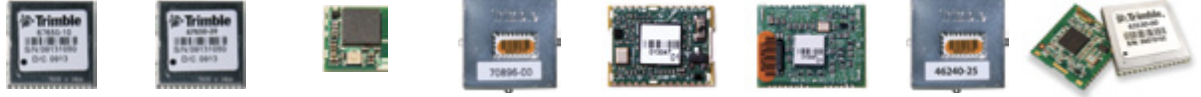


## Product Comparison



| TRIMBLE EMBEDDED<br>PRODUCT FEATURES<br>AND REQUIREMENTS | CONDOR<br>C1919A<br>67650-10 | CONDOR<br>C1919C<br>67650-20 | CONDOR<br>C1011<br>68674-00, 68674-05 | CONDOR<br>C2626<br>70896-00 | CONDOR<br>C1216<br>68676-10, 68676-20,<br>68676-30 | CONDOR<br>C1722<br>68675-00 | LASSEN<br>IQ<br>46240-25 | COPERNICUS II<br>63530-00, 63530-10,<br>67415-00 |
|--|------------------------------|------------------------------|---------------------------------------|-----------------------------|--|-----------------------------|--------------------------|--|
|--|------------------------------|------------------------------|---------------------------------------|-----------------------------|--|-----------------------------|--------------------------|--|

### POWER REQUIREMENTS

|  |                 |                 |                 |                 |                 |                 |                       |       |
|--|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------------|-------|
| V <sub>CC</sub> min  | 3 V             | 3 V             | 3 V             | 3 V             | 3 V             | 3 V             | 3 V                   | 2.7 V |
| V <sub>CC</sub> max  | 3.6 V           | 3.6 V           | 3.6 V           | 3.6 V           | 3.6 V           | 3.6 V           | 3.6 V                 | 3.3 V |
| V <sub>CC</sub> typ  | 3.3 V           | 3.3 V           | 3.3 V           | 3.3 V           | 3.3 V           | 3.3 V           | 3.3 V                 | 3 V   |
| V <sub>BAT</sub> min   | 2 V             | 2 V             | 2 V             | 2 V             | 2 V             | 2 V             | 2.5 V                 | 2.7 V |
| V <sub>BAT</sub> max   | V <sub>CC</sub> | V <sub>CC</sub> | V <sub>CC</sub> | V <sub>CC</sub> | V <sub>CC</sub> | V <sub>CC</sub> | V <sub>CC</sub> - 10% | 3.3 V |
| Typical supply current: (Excludes antenna current, except for C1011) | 37 mA           | 37 mA           | 33 mA           | <35 mA          | <35 mA          | <35 mA          | 27 mA                 | 44 mA |
| Typical RTC current  | 5 µA            | 5 µA            | 5 µA            | 5 µA            | 6 µA            | 5 µA            | 20 µA                 | 7 µA  |

### START UP TIMES

|               |       |       |       |       |       |       |       |      |
|---------------|-------|-------|-------|-------|-------|-------|-------|------|
| Reacquisition | 2 s   | 2 s   | 2 s   | 2 s   | 2 s   | 2 s   | <3 s  | 2 s  |
| Hot start     | 2 s   | 2 s   | 2 s   | 2 s   | 2 s   | 2 s   | <12 s | 3 s  |
| Warm Start    | <35 s | <35 s | <35 s | <35 s | <35 s | <35 s | <38 s | 35 s |
| Cold Start    | <38 s | <38 s | <38 s | <38 s | <38 s | <38 s | <55 s | 38 s |

### ACCURACY

|                               |          |          |          |          |          |          |          |          |
|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|
| Autonomous position @ 50% CEP | <2.5 m   | <2.5 m   | <2.5 m   | <2.5 m   | <2.5 m   | <2.5 m   | <5 m     | <2.5 m   |
| Autonomous position @ 90% CEP | <5.0 m   | <5.0 m   | <5.0 m   | <5.0 m   | <5.0 m   | <5.0 m   | <8 m     | <5.0 m   |
| Autonomous altitude @ 50% CEP | <5 m     | <5 m     | <5 m     | <5 m     | <5 m     | <5 m     | <10 m    | <5 m     |
| Autonomous altitude @ 90% CEP | <8 m     | <8 m     | <8 m     | <8 m     | <8 m     | <8 m     | <16 m    | <8 m     |
| SBAS position @ 50% CEP       | <2 m     | <2 m     | <2 m     | <2 m     | <2 m     | <2 m     | NA       | <2 m     |
| SBAS position @ 90% CEP       | <4 m     | <4 m     | <4 m     | <4 m     | <4 m     | <4 m     | NA       | <4 m     |
| SBAS altitude @ 50% CEP       | <3 m     | <3 m     | <3 m     | <3 m     | <3 m     | <3 m     | NA       | <3 m     |
| SBAS altitude @ 90% CEP       | <5 m     | <5 m     | <5 m     | <5 m     | <5 m     | <5 m     | NA       | <5 m     |
| Velocity                      | 0.06 m/s | 0.06 m/s | 0.06 m/s | 0.06 m/s | 0.06 m/s | 0.06 m/s | 0.06 m/s | 0.06 m/s |

### TIMING OUTPUT

|                               |           |           |           |           |           |           |           |           |
|-------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| PPS                           | 2.8 V TTL | 2.8 V TTL | 2.8 V TTL | 2.8 V TTL | 2.8 V TTL | 2.8 V TTL | 3.3 V TTL | 3.0 V TTL |
| PPS accuracy to UTC (1 sigma) | ±25 ns    | ±25 ns    | ±25 ns    | ±25 ns    | ±25 ns    | ±25 ns    | ±50 ns    | ±60 ns    |
| PPS pulse width               | 4.2 µs    | 4.2 µs    | 4.2 µs    | 4.2 µs    | 4.2 µs    | 4.2 µs    | 80 µs     | 4.2 µs    |

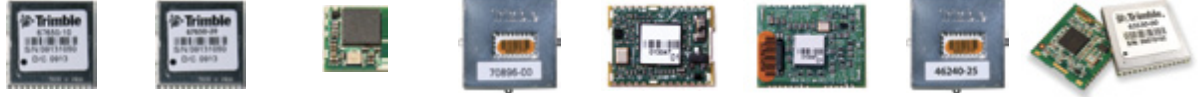
### SENSITIVITY

|                      |          |          |          |          |          |          |          |  |
|----------------------|----------|----------|----------|----------|----------|----------|----------|--|
| Standard acquisition | -146 dBm | -146 dBm | -146 dBm | -146 dBm | -146 dBm | -146 dBm | -130 dBm | -142 dB                                    |
| Enhanced acquisition | NA       | NA       | NA       | NA       | NA       | NA       | -136 dBm | -144 dBm (-148 dBm with current ephemeris) |
| Tracking             | -160 dBm | -160 dBm | -160 dBm | -160 dBm | -160 dBm | -160 dBm | -142 dBm | -160 dBm                                   |

### GPS OUTPUT

|            |     |     |     |     |     |     |     |     |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|
| 1 Hz       | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| up to 5 Hz | Yes | Yes | Yes | Yes | Yes | Yes | No  | No  |

# Product Comparison



| TRIMBLE EMBEDDED PRODUCT FEATURES AND REQUIREMENTS | CONDOR C1919A<br>67650-10 | CONDOR C1919C<br>67650-20 | CONDOR C1011<br>68674-00, 68674-05 | CONDOR C2626<br>70896-00 | CONDOR C1216<br>68676-10, 68676-20, 68676-30 | CONDOR C1722<br>68675-00 | LASSEN IQ<br>46240-25 | COPERNICUS II<br>63530-00, 63530-10, 67415-00 |
|--|---------------------------|---------------------------|------------------------------------|--------------------------|--|--------------------------|-----------------------|---|
|--|---------------------------|---------------------------|------------------------------------|--------------------------|--|--------------------------|-----------------------|---|

## PROTOCOLS

|      |     |     |     |     |     |     |     |     |
|------|-----|-----|-----|-----|-----|-----|-----|-----|
| TSIP | No  | No  | No  | No  | No  | No  | Yes | Yes |
| NMEA | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| TAIP | No  | No  | No  | No  | No  | No  | Yes | Yes |
| RTCM | No  | No  | No  | No  | Yes | No  | Yes | No  |

## GENERAL

|                           |          |          |          |          |          |          |          |          |
|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|
| SBAS                      | Yes      | Yes      | Yes      | Yes      | Yes      | Yes      | No       | Yes      |
| AGPS                      | Yes      | Yes      | Yes      | Yes      | Yes      | Yes      | No       | Yes      |
| DGPS                      | No       | No       | No       | No       | Yes      | No       | Yes      | No       |
| COCOM Velocity            | <515 m/s | <515 m/s | <515 m/s | <515 m/s | <515 m/s | <515 m/s | <515 m/s | <515 m/s |
| Acceleration              | 2 G      | 2 G      | 2 G      | 2 G      | 2 G      | 2 G      |          | 2 G      |
| On board reset controller | Yes      | Yes      | Yes      | Yes      | Yes      | Yes      | Yes      | Yes      |
| Flash programmable        | Yes      | Yes      | Yes      | Yes      | Yes      | Yes      | Yes      | Yes      |

## ANTENNAS

|                                   |       |       |     |       |       |       |     |       |
|-----------------------------------|-------|-------|-----|-------|-------|-------|-----|-------|
| Supports external active antenna  | Yes   | Yes   | Yes | Yes   | Yes   | Yes   | Yes | Yes   |
| Supports passive antenna          | Yes   | Yes   | Yes | Yes   | Yes   | Yes   | No  | Yes   |
| External LNA for passive required | No    | No    | Yes | No    | No    | No    | NA  | No    |
| Open/Short Detection built in     | No    | Yes   | No  | Yes   | Yes   | Yes   | Yes | Yes   |
| Internal LNA gain                 | 19 dB | 19 dB | NA  | 19 dB | 19 dB | 19 dB |     | 20 dB |

## LOAD OPTIONS

|                     |     |     |    |     |     |     |     |     |
|---------------------|-----|-----|----|-----|-----|-----|-----|-----|
| 32kHz Clock onboard | Yes | Yes | No | Yes | Yes | Yes | Yes | Yes |
|---------------------|-----|-----|----|-----|-----|-----|-----|-----|

## INTERFACES

|        |    |    |    |                    |   |   |    |    |
|--------|----|----|----|--------------------|---|---|----|----|
| Serial | 1  | 1  | 1  | 1 (2 ports joined) | 1 | 1 | 2  | 2  |
| USB    | No | No | No | No                 | 1 | 1 | No | No |

## MECHANICAL

|  |                       |                       |                       |                      |                       |                       |                      |                       |
|--|-----------------------|-----------------------|-----------------------|----------------------|-----------------------|-----------------------|----------------------|-----------------------|
|  | 19.0 x 19.0 x 2.54 mm | 19.0 x 19.0 x 2.54 mm | 10.0 x 11.0 x 2.01 mm | 26.0 x 26.0 x 6.0 mm | 16.0 x 12.2 x 2.13 mm | 17.0 x 22.4 x 2.13 mm | 26.0 x 26.0 x 6.0 mm | 19.0 x 19.0 x 2.54 mm |
|--|-----------------------|-----------------------|-----------------------|----------------------|-----------------------|-----------------------|----------------------|-----------------------|

## SHIELD

|  |     |     |          |     |          |    |     |     |
|--|-----|-----|----------|-----|----------|----|-----|-----|
|  | Yes | Yes | -05 only | Yes | -20 only | No | Yes | Yes |
|--|-----|-----|----------|-----|----------|----|-----|-----|

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