

I-Burst Technology Experimental License Authorization Request

Purpose of Operation

Eagle Project Corp. has been contracted by DARPA demonstrate a pilot network to conduct research and development for potential military purposes. The pilot will be used to validate the use of this technology for Department of Defense applications.

- File Number: 0561-EX-PL-2011
- Class of Station: FX
- Station Location: Mclean, VA
- Effective: 01/16/2012
- Expiration: 01/15/2013

Experimental Explanation

To provide systems that combine innovative features such as Kyocera's I-Burst Technology networking. This combination yields unmatched capability, performance, and long term reliability to exceed warfighter expectations for battlefield connectivity.

Additional Information: General Radio Specifications

The following table shows the general radio specifications for *iBurst* Base Station.

Item Specification Comments

Maximum input power 0 dBm Max. No damage
Frequency Range 1,790 to 1,795 MHz
Instantaneous Bandwidth 5 MHz
Carrier Spacing 625 kHz
Simultaneous Carrier 1 to 8 Any channel frequency within a
5 MHz bandwidth.

Transmitter Specifications:

Item Specification Comments

Composite Output Power 44.6 dBm
Maximum Stream Power per Antenna 30.0 dBm/stream/antenna
Rated Stream Power 33.8 dBm/stream
Minimum Stream Power 13.8 dBm/stream
Avg. power over an active time slot
Transmit Power
Composite Output Power ± 2.0 dB
Rated Stream Power ± 3.0 dB
Transmit Power Control Step Size 1.0 dB Max.
Transmit Power Control Non-Linearity 1.0 dB_{p-p}
Adjacent Carrier Power
625 kHz offset -9.2 dBm/ch Max.
1,250 kHz offset or more -16.2 dBm/ch Max.
With a single signal of 33.8 dBm
transmitted power
In-Band Multicarrier Intermodulation
Products
 -6.2 dBm/ch Max. With 8 carriers of 44.6 dBm
composite transmitted power
Out-of-Band Spurious Emission
 $9 \text{ kHz} < f \leq 150 \text{ kHz}$ -46.8 dBm/1 kHz Max.
 $150 \text{ kHz} < f \leq 30 \text{ MHz}$ -46.8 dBm/10 kHz Max.
 $30 \text{ MHz} < f \leq 1.71 \text{ GHz}$ -36.8 dBm/1 MHz Max.
 $1.71 \text{ GHz} < f \leq 1.89 \text{ GHz}$ -24.8 dBm/1 MHz Max.
 $1.89 \text{ GHz} < f \leq 3.50 \text{ GHz}$ -36.8 dBm/1 MHz Max.
 $3.50 \text{ GHz} < f \leq 12.75 \text{ GHz}$ -30.8 dBm/1 MHz Max.
Emission power of spurious
components at an antenna port
with a single signal of 30.0 dBm
or 8 carriers of 33.8 dBm
transmitted power
Out-of-Band Non-Spurious Emission
 $\leq 10 \text{ MHz}$ $f_{\text{off}} < \leq 5 \text{ MHz}$ -20.8 dBm/1 MHz Max.
 $\leq 5 \text{ MHz}$ $f_{\text{off}} < \leq 0.5 \text{ MHz}$ -16.8 dBm/1 MHz Max.
 $\leq 0.5 \text{ MHz}$ $f_{\text{off}} < 0 \text{ Hz}$ -13.8 dBm/100 kHz Max.
 $0 \text{ Hz} < f_{\text{off}} \leq 0.5 \text{ MHz}$ -13.8 dBm/100 kHz Max.
 $0.5 \text{ MHz} < f_{\text{off}} \leq 5 \text{ MHz}$ -16.8 dBm/1 MHz Max.
 $5 \text{ MHz} < f_{\text{off}} \leq 10 \text{ MHz}$ -20.8 dBm/1 MHz Max.
Emission power of non-spurious
components at an antenna port
with a single signal of 30.0 dBm
or 8 carriers of 33.8 dBm
transmitted power.
Transmit OFF Power
In-Band -60.0 dBm/1 MHz Max. With receive mode
Frequency error $\pm 5 \pm 10 \pm 8$ With GPS locking
Modulation accuracy 3.5 %_{rms}
Occupied bandwidth 625 kHz Max.
Transmit burst timing error $\pm 2 \pm \text{sec}$
Ramp Up/Down transmit power $+6.0$ dB/10 $\pm \text{sec}$

Guard time transmit power –6.0 dBm/1 MHz Max

Receiver Specifications:

Item Specification Comments

Nominal quality FER 10⁻²

Receive sensitivity

Mod Class = 0 –108.6 dBmMax.

Mod Class = 1 –107.0 dBmMax.

Mod Class = 2 –105.3 dBmMax.

Mod Class = 3 –102.4 dBmMax.

Mod Class = 4 –100.2 dBmMax.

Mod Class = 5 –97.9 dBmMax.

Mod Class = 6 –95.9 dBmMax.

Mod Class = 7 –94.6 dBmMax.

Maximum Input Power –45.0 dBmMin.

Adjacent Channel Selectivity

625 kHz offset 30.0 dB Max.

1,250 kHz offset or more 46.0 dB Max.

Spurious Response

In-Band 46.0 dB Min.

1 MHz > f_{off} > 0 Hz 46.0 dB Min.

15 MHz > f_{off} > 1 MHz 56.0 dB Min.

Out-of-Band 56.0 dB Min.

Intermodulation Response

In-Band 41.0 dB Min.

1 MHz > f_{off} > 0 Hz 41.0 dB Min.

15 MHz > f_{off} > 1 MHz 41.0 dB Min.

Out-of-Band 45.0 dB Min.

DSSI Estimator Accuracy

–105.0 dBm to –45.0 dBm $\pm$ 4.0 dB

–110.0 dBm to –105.0 dBm $\pm$ 6.0 dB.

SINR Estimator Accuracy $\pm$ 3.0 dB SINR Range : –5 to 25 dB