Appendix A
Results of Maximum Allowable EIRP Scenario Based Analysis

Operational Scenario: Terrestrial GPS Receiver and Single UWB Device

GPS Receiver Architecture: Narrowly Spaced Correlator

			Imax (dBW/MHz)	Hgps (m)	Huwb (m)	Hsep (m)	Theta (deg)	Gr (dBic)	Dmin (m)	Lp (dB)	Lmult (dB)	Lallot (dB)	Lman (dB)	Laf (dB)	Lba (dB)	Lsm (dB)	UWB EIRP (dBW/MHz)	GPS Receiver Criteria
Broadband Noise			-132.2	3	3	2	0	0	2	42.4	0	0	3	0	0	0	-92.8	BL
UWB PRF	UWB Gating	UWB Modulation	Imax (dBW)	Hgps (m)	Huwb (m)	Hsep (m)	Theta (deg)	Gr (dBic)	Dmin (m)	Lp (dB)	Lmult (dB)	Lallot (dB)	Lman (dB)	Laf (dB)	Lba (dB)	Lsm (dB)	UWB EIRP (dBW)	
1 MHz	100%	None	-144.1	3	3	2	0	0	2	42.4	0	0	3	0	0	0	-104.7	BL
5 MHz	100%	None	-145.7	3	3	2	0	0	2	42.4	0	0	3	0	0	0	-106.3	BL
20 MHz	100%	None	-146.1	3	3	2	0	0	2	42.4	0	0	3	0	0	0	-106.7	BL
5 MHz	20%	None	-146.6	3	3	2	0	0	2	42.4	0	0	3	0	0	0	-107.2	BL
20 MHz	20%	None	-146.9	3	3	2	0	0	2	42.4	0	0	3	0	0	0	-107.5	BL
1 MHz	100%	OOK	-139.9	3	3	2	0	0	2	42.4	0	0	3	0	0	0	-100.5	BL
5 MHz	100%	OOK	-146.7	3	3	2	0	0	2	42.4	0	0	3	0	0	0	-107.3	BL
20 MHz	100%	OOK	-146.5	3	3	2	0	0	2	42.4	0	0	3	0	0	0	-107.1	BL
5 MHz	20%	OOK	-142.6	3	3	2	0	0	2	42.4	0	0	3	0	0	0	-103.2	BL
20 MHz	20%	OOK	-145.4	3	3	2	0	0	2	42.4	0	0	3	0	0	0	-106.0	BL
UWB PRF	UWB Gating	UWB Modulation	Imax (dBW/MHz)	Hgps (m)	Huwb (m)	Hsep (m)	Theta (deg)	Gr (dBic)	Dmin (m)	Lp (dB)	Lmult (dB)	Lallot (dB)	Lman (dB)	Laf (dB)	Lba (dB)	Lsm (dB)	UWB EIRP (dBW/MHz)	GPS Receiver Criteria
100 kHz	100%	None	-100.2	3	3	2	0	0	2	42.4	0	0	3	0	0	0	-60.8	DNBL
100 kHz	20%	None	-107.1	3	3	2	0	0	2	42.4	0	0	3	0	0	0	-67.7	DNBL
1 MHz	20%	None	-94.8	3	3	2	0	0	2	42.4	0	0	3	0	0	0	-55.4	DNBL
100 kHz	100%	OOK	-103.2	3	3	2	0	0	2	42.4	0	0	3	0	0	0	-63.8	DNBL
100 kHz	20%	OOK	-110.2	3	3	2	0	0	2	42.4	0	0	3	0	0	0	-70.8	DNBL
1 MHz	20%	OOK	-97.8	3	3	2	0	0	2	42.4	0	0	3	0	0	0	-58.4	DNBL
100 kHz	100%	50% Abs.	-100.1	3	3	2	0	0	2	42.4	0	0	3	0	0	0	-60.7	DNBL
1 MHz	100%	50% Abs.	-105.9	3	3	2	0	0	2	42.4	0	0	3	0	0	0	-66.5	BL
5 MHz	100%	50% Abs.	-127.7	3	3	2	0	0	2	42.4	0	0	3	0	0	0	-88.3	BL
20 MHz	100%	50% Abs.	-133.6	3	3	2	0	0	2	42.4	0	0	3	0	0	0	-94.2	BL
100 kHz	100%	2% Rel.	-100.1	3	3	2	0	0	2	42.4	0	0	3	0	0	0	-60.7	DNBL
1 MHz	100%	2% Rel.	-87.8	3	3	2	0	0	2	42.4	0	0	3	0	0	0	-48.4	DNBL
5 MHz	100%	2% Rel.	-127.6	3	3	2	0	0	2	42.4	0	0	3	0	0	0	-88.2	BL
20 MHz	100%	2% Rel.	-135.5	3	3	2	0	0	2	42.4	0	0	3	0	0	0	-96.1	BL
100 kHz	20%	50% Abs.	-107.1	3	3	2	0	0	2	42.4	0	0	3	0	0	0	-67.7	DNBL
1 MHz	20%	50% Abs.	-94.8	3	3	2	0	0	2	42.4	0	0	3	0	0	0	-55.4	DNBL
5 MHz	20%	50% Abs.	-88.5	3	3	2	0	0	2	42.4	0	0	3	0	0	0	-49.1	DNBL
20 MHz	20%	50% Abs.	-100.5	3	3	2	0	0	2	42.4	0	0	3	0	0	0	-61.1	BL
100 kHz	20%	2% Rel.	-107.1	3	3	2	0	0	2	42.4	0	0	3	0	0	0	-67.7	DNBL
1 MHz	20%	2% Rel.	-94.7	3	3	2	0	0	2	42.4	0	0	3	0	0	0	-55.3	DNBL
5 MHz	20%	2% Rel.	-88.5	3	3	2	0	0	2	42.4	0	0	3	0	0	0	-49.1	DNBL
20 MHz	20%	2% Rel.	-122.2	3	3	2	0	0	2	42.4	0	0	3	0	0	0	-82.8	BL

BL - Break Lock

DNBL - Did not break-lock at the maximum UWB generator signal power

Operational Scenario: Terrestrial GPS Receiver and Multiple UWB Device (Outdoor Operation)
GPS Receiver Architecture: Narrowly Spaced Correlator

			Imax (dBW/MHz)	Hgps (m)	Huwb (m)	Hsep (m)	Theta (deg)	Gr (dBic)	Dmin (m)	Lp (dB)	Lmult (dB)	Lallot (dB)	Lman (dB)	Laf (dB)	Lba (dB)	Lsm (dB)	UWB EIRP (dBW/MHz)	GPS Receiver Criteria
Broadband Noise			-132.2	3	3	10	0	0	10	56.4	6	3	3	0	0	0	-87.9	BL
UWB PRF	UWB Gating	UWB Modulation	Imax (dBW)	Hgps (m)	Huwb (m)	Hsep (m)	Theta (deg)	Gr (dBic)	Dmin (m)	Lp (dB)	Lmult (dB)	Lallot (dB)	Lman (dB)	Laf (dB)	Lba (dB)	Lsm (dB)	UWB EIRP (dBW)	
1 MHz	100%	None	-144.1	3	3	10	0	0	10	56.4	0	3	3	0	0	0	-93.8	BL
5 MHz	100%	None	-145.7	3	3	10	0	0	10	56.4	0	3	3	0	0	0	-95.4	BL
20 MHz	100%	None	-146.1	3	3	10	0	0	10	56.4	0	3	3	0	0	0	-95.8	BL
5 MHz	20%	None	-146.6	3	3	10	0	0	10	56.4	0	3	3	0	0	0	-96.3	BL
20 MHz	20%	None	-146.9	3	3	10	0	0	10	56.4	0	3	3	0	0	0	-96.6	BL
1 MHz	100%	OOK	-139.9	3	3	10	0	0	10	56.4	0	3	3	0	0	0	-89.6	BL
5 MHz	100%	OOK	-146.7	3	3	10	0	0	10	56.4	0	3	3	0	0	0	-96.4	BL
20 MHz	100%	OOK	-146.5	3	3	10	0	0	10	56.4	0	3	3	0	0	0	-96.2	BL
5 MHz	20%	OOK	-142.6	3	3	10	0	0	10	56.4	0	3	3	0	0	0	-92.3	BL
20 MHz	20%	OOK	-145.4	3	3	10	0	0	10	56.4	0	3	3	0	0	0	-95.1	BL
UWB PRF	UWB Gating	UWB Modulation	Imax (dBW/MHz)	Hgps (m)	Huwb (m)	Hsep (m)	Theta (deg)	Gr (dBic)	Dmin (m)	Lp (dB)	Lmult (dB)	Lallot (dB)	Lman (dB)	Laf (dB)	Lba (dB)	Lsm (dB)	UWB EIRP (dBW/MHz)	GPS Receiver Criteria
100 kHz	100%	None	-100.2	3	3	10	0	0	10	56.4	0	3	3	0	0	0	-49.9	DNBL
100 kHz	20%	None	-107.1	3	3	10	0	0	10	56.4	0	3	3	0	0	0	-56.8	DNBL
1 MHz	20%	None	-132.2	3	3	10	0	0	10	56.4	6	3	3	0	0	0	-87.9	NBL
100 kHz	100%	OOK	-103.2	3	3	10	0	0	10	56.4	0	3	3	0	0	0	-52.9	DNBL
100 kHz	20%	OOK	-110.2	3	3	10	0	0	10	56.4	0	3	3	0	0	0	-59.9	DNBL
1 MHz	20%	OOK	-132.2	3	3	10	0	0	10	56.4	6	3	3	0	0	0	-87.9	NBL
100 kHz	100%	50% Abs.	-100.1	3	3	10	0	0	10	56.4	0	3	3	0	0	0	-49.8	DNBL
1 MHz	100%	50% Abs.	-132.2	3	3	10	0	0	10	56.4	6	3	3	0	0	0	-87.9	NBL
5 MHz	100%	50% Abs.	-127.7	3	3	10	0	0	10	56.4	6	3	3	0	0	0	-83.4	BL
20 MHz	100%	50% Abs.	-133.6	3	3	10	0	0	10	56.4	6	3	3	0	0	0	-89.3	BL
100 kHz	100%	2% Rel.	-100.1	3	3	10	0	0	10	56.4	0	3	3	0	0	0	-49.8	DNBL
1 MHz	100%	2% Rel.	-132.2	3	3	10	0	0	10	56.4	6	3	3	0	0	0	-87.9	NBL
5 MHz	100%	2% Rel.	-127.6	3	3	10	0	0	10	56.4	6	3	3	0	0	0	-83.3	BL
20 MHz	100%	2% Rel.	-135.5	3	3	10	0	0	10	56.4	6	3	3	0	0	0	-91.2	BL
100 kHz	20%	50% Abs.	-107.1	3	3	10	0	0	10	56.4	0	3	3	0	0	0	-56.8	DNBL
1 MHz	20%	50% Abs.	-132.2	3	3	10	0	0	10	56.4	6	3	3	0	0	0	-87.9	NBL
5 MHz	20%	50% Abs.	-132.2	3	3	10	0	0	10	56.4	6	3	3	0	0	0	-87.9	NBL
20 MHz	20%	50% Abs.	-132.2	3	3	10	0	0	10	56.4	6	3	3	0	0	0	-87.9	NBL
100 kHz	20%	2% Rel.	-107.1	3	3	10	0	0	10	56.4	0	3	3	0	0	0	-56.8	DNBL
1 MHz	20%	2% Rel.	-132.2	3	3	10	0	0	10	56.4	6	3	3	0	0	0	-87.9	NBL
5 MHz	20%	2% Rel.	-132.2	3	3	10	0	0	10	56.4	6	3	3	0	0	0	-87.9	NBL
20 MHz	20%	2% Rel.	-132.2	3	3	10	0	0	10	56.4	6	3	3	0	0	0	-87.9	NBL

BL - Break Lock

DNBL Did not break lock at the maximum UWB signal generator power level

NBL - Broadband Noise Break Lock

Operational Scenario: Terrestrial GPS Receiver and Multiple UWB Device (Indoor Operation)
GPS Receiver Architecture: Narrowly Spaced Correlator

			Imax (dBW/MHz)	Hgps (m)	Huwb (m)	Hsep (m)	Theta (deg)	Gr (dBic)	Dmin (m)	Lp (dB)	Lmult (dB)	Lallot (dB)	Lman (dB)	Laf (dB)	Lba (dB)	Lsm (dB)	UWB EIRP (dBW/MHz)	GPS Receiver Criteria
Broadband Noise			-132.2	3	10	5	54.5	3	8.6	55.0	6	3	3	0	9	0	-83.2	BL
UWB PRF	**UWB Gating**	**UWB Modulation**	**Imax (dBW)**	**Hgps (m)**	**Huwb (m)**	**Hsep (m)**	**Theta (deg)**	**Gr (dBic)**	**Dmin (m)**	**Lp (dB)**	**Lmult (dB)**	**Lallot (dB)**	**Lman (dB)**	**Laf (dB)**	**Lba (dB)**	**Lsm (dB)**	**UWB EIRP (dBW)**	
1 MHz	100%	None	-144.1	3	10	5	54.5	3	8.6	55.0	0	3	3	0	9	0	-89.1	BL
5 MHz	100%	None	-145.7	3	10	5	54.5	3	8.6	55.0	0	3	3	0	9	0	-90.7	BL
20 MHz	100%	None	-146.1	3	10	5	54.5	3	8.6	55.0	0	3	3	0	9	0	-91.1	BL
5 MHz	20%	None	-146.6	3	10	5	54.5	3	8.6	55.0	0	3	3	0	9	0	-91.6	BL
20 MHz	20%	None	-146.9	3	10	5	54.5	3	8.6	55.0	0	3	3	0	9	0	-91.9	BL
1 MHz	100%	OOK	-139.9	3	10	5	54.5	3	8.6	55.0	0	3	3	0	9	0	-84.9	BL
5 MHz	100%	OOK	-146.7	3	10	5	54.5	3	8.6	55.0	0	3	3	0	9	0	-91.7	BL
20 MHz	100%	OOK	-146.5	3	10	5	54.5	3	8.6	55.0	0	3	3	0	9	0	-91.5	BL
5 MHz	20%	OOK	-142.6	3	10	5	54.5	3	8.6	55.0	0	3	3	0	9	0	-87.6	BL
20 MHz	20%	OOK	-145.4	3	10	5	54.5	3	8.6	55.0	0	3	3	0	9	0	-90.4	BL
UWB PRF	**UWB Gating**	**UWB Modulation**	**Imax (dBW/MHz)**	**Hgps (m)**	**Huwb (m)**	**Hsep (m)**	**Theta (deg)**	**Gr (dBic)**	**Dmin (m)**	**Lp (dB)**	**Lmult (dB)**	**Lallot (dB)**	**Lman (dB)**	**Laf (dB)**	**Lba (dB)**	**Lsm (dB)**	**UWB EIRP (dBW/MHz)**	**GPS Receiver Criteria**
100 kHz	100%	None	-100.2	3	10	5	54.5	3	8.6	55.0	0	3	3	0	9	0	-45.2	DNBL
100 kHz	20%	None	-107.1	3	10	5	54.5	3	8.6	55.0	0	3	3	0	9	0	-52.1	DNBL
1 MHz	20%	None	-132.2	3	10	5	54.5	3	8.6	55.0	6	3	3	0	9	0	-83.2	NBL
100 kHz	100%	OOK	-103.2	3	10	5	54.5	3	8.6	55.0	0	3	3	0	9	0	-48.2	DNBL
100 kHz	20%	OOK	-110.2	3	10	5	54.5	3	8.6	55.0	0	3	3	0	9	0	-55.2	DNBL
1 MHz	20%	OOK	-132.2	3	10	5	54.5	3	8.6	55.0	6	3	3	0	9	0	-83.2	NBL
100 kHz	100%	50% Abs.	-100.1	3	10	5	54.5	3	8.6	55.0	0	3	3	0	9	0	-45.1	DNBL
1 MHz	100%	50% Abs.	-132.2	3	10	5	54.5	3	8.6	55.0	6	3	3	0	9	0	-83.2	NBL
5 MHz	100%	50% Abs.	-127.7	3	10	5	54.5	3	8.6	55.0	6	3	3	0	9	0	-78.7	BL
20 MHz	100%	50% Abs.	-133.6	3	10	5	54.5	3	8.6	55.0	6	3	3	0	9	0	-84.6	BL
100 kHz	100%	2% Rel.	-100.1	3	10	5	54.5	3	8.6	55.0	0	3	3	0	9	0	-45.1	DNBL
1 MHz	100%	2% Rel.	-132.2	3	10	5	54.5	3	8.6	55.0	6	3	3	0	9	0	-83.2	NBL
5 MHz	100%	2% Rel.	-127.6	3	10	5	54.5	3	8.6	55.0	6	3	3	0	9	0	-78.6	BL
20 MHz	100%	2% Rel.	-135.5	3	10	5	54.5	3	8.6	55.0	6	3	3	0	9	0	-86.5	BL
100 kHz	20%	50% Abs.	-107.1	3	10	5	54.5	3	8.6	55.0	0	3	3	0	9	0	-52.1	DNBL
1 MHz	20%	50% Abs.	-132.2	3	10	5	54.5	3	8.6	55.0	6	3	3	0	9	0	-83.2	NBL
5 MHz	20%	50% Abs.	-132.2	3	10	5	54.5	3	8.6	55.0	6	3	3	0	9	0	-83.2	NBL
20 MHz	20%	50% Abs.	-132.2	3	10	5	54.5	3	8.6	55.0	6	3	3	0	9	0	-83.2	NBL
100 kHz	20%	2% Rel.	-107.1	3	10	5	54.5	3	8.6	55.0	0	3	3	0	9	0	-52.1	DNBL
1 MHz	20%	2% Rel.	-132.2	3	10	5	54.5	3	8.6	55.0	6	3	3	0	9	0	-83.2	NBL
5 MHz	20%	2% Rel.	-132.2	3	10	5	54.5	3	8.6	55.0	6	3	3	0	9	0	-83.2	NBL
20 MHz	20%	2% Rel.	-132.2	3	10	5	54.5	3	8.6	55.0	6	3	3	0	9	0	-83.2	NBL

BL - Break Lock

DNBL - Did not break lock at the maximum UWB generator signal power

NBL - Broadband Noise Break Lock

Operational Scenario: Navigation in Constricted Waterways GPS Receiver and Multiple UWB Device (Indoor Operation) (I)
GPS Receiver Architecture: Narrowly Spaced Correlator

			Imax (dBW/MHz)	Hgps (m)	Huwb (m)	Hsep (m)	Theta (deg)	Gr (dBic)	Dmin (m)	Lp (dB)	Lmult (dB)	Lallot (dB)	Lman (dB)	Laf (dB)	Lba (dB)	Lsm (dB)	UWB EIRP (dBW/MHz)	GPS Receiver Criteria
Broadband Noise			-132.2	13.5	10	37.5	-5.3	0	37.7	67.9	6	3	3	0	9	0	-67.3	BL
UWB PRF	**UWB Gating**	**UWB Modulation**	**Imax (dBW)**	**Hgps (m)**	**Huwb (m)**	**Hsep (m)**	**Theta (deg)**	**Gr (dBic)**	**Dmin (m)**	**Lp (dB)**	**Lmult (dB)**	**Lallot (dB)**	**Lman (dB)**	**Laf (dB)**	**Lba (dB)**	**Lsm (dB)**	**UWB EIRP (dBW)**	
1 MHz	100%	None	-144.1	13.5	10	37.5	-5.3	0	37.7	67.9	0	3	3	0	9	0	-73.2	BL
5 MHz	100%	None	-145.7	13.5	10	37.5	-5.3	0	37.7	67.9	0	3	3	0	9	0	-74.8	BL
20 MHz	100%	None	-146.1	13.5	10	37.5	-5.3	0	37.7	67.9	0	3	3	0	9	0	-75.2	BL
5 MHz	20%	None	-146.6	13.5	10	37.5	-5.3	0	37.7	67.9	0	3	3	0	9	0	-75.7	BL
20 MHz	20%	None	-146.9	13.5	10	37.5	-5.3	0	37.7	67.9	0	3	3	0	9	0	-76.0	BL
1 MHz	100%	OOK	-139.9	13.5	10	37.5	-5.3	0	37.7	67.9	0	3	3	0	9	0	-69.0	BL
5 MHz	100%	OOK	-146.7	13.5	10	37.5	-5.3	0	37.7	67.9	0	3	3	0	9	0	-75.8	BL
20 MHz	100%	OOK	-146.5	13.5	10	37.5	-5.3	0	37.7	67.9	0	3	3	0	9	0	-75.6	BL
5 MHz	20%	OOK	-142.6	13.5	10	37.5	-5.3	0	37.7	67.9	0	3	3	0	9	0	-71.7	BL
20 MHz	20%	OOK	-145.4	13.5	10	37.5	-5.3	0	37.7	67.9	0	3	3	0	9	0	-74.5	BL
UWB PRF	**UWB Gating**	**UWB Modulation**	**Imax (dBW/MHz)**	**Hgps (m)**	**Huwb (m)**	**Hsep (m)**	**Theta (deg)**	**Gr (dBic)**	**Dmin (m)**	**Lp (dB)**	**Lmult (dB)**	**Lallot (dB)**	**Lman (dB)**	**Laf (dB)**	**Lba (dB)**	**Lsm (dB)**	**UWB EIRP (dBW/MHz)**	**GPS Receiver Criteria**
100 kHz	100%	None	-100.2	13.5	10	37.5	-5.3	0	37.7	67.9	0	3	3	0	9	0	-29.3	DNBL
100 kHz	20%	None	-107.1	13.5	10	37.5	-5.3	0	37.7	67.9	0	3	3	0	9	0	-36.2	DNBL
1 MHz	20%	None	-132.2	13.5	10	37.5	-5.3	0	37.7	67.9	6	3	3	0	9	0	-67.3	NBL
100 kHz	100%	OOK	-103.2	13.5	10	37.5	-5.3	0	37.7	67.9	0	3	3	0	9	0	-32.3	DNBL
100 kHz	20%	OOK	-110.2	13.5	10	37.5	-5.3	0	37.7	67.9	0	3	3	0	9	0	-39.3	DNBL
1 MHz	20%	OOK	-132.2	13.5	10	37.5	-5.3	0	37.7	67.9	6	3	3	0	9	0	-67.3	NBL
100 kHz	100%	50% Abs.	-100.1	13.5	10	37.5	-5.3	0	37.7	67.9	0	3	3	0	9	0	-29.2	DNBL
1 MHz	100%	50% Abs.	-132.2	13.5	10	37.5	-5.3	0	37.7	67.9	6	3	3	0	9	0	-67.3	NBL
5 MHz	100%	50% Abs.	-127.7	13.5	10	37.5	-5.3	0	37.7	67.9	6	3	3	0	9	0	-62.8	BL
20 MHz	100%	50% Abs.	-133.6	13.5	10	37.5	-5.3	0	37.7	67.9	6	3	3	0	9	0	-68.7	BL
100 kHz	100%	2% Rel.	-100.1	13.5	10	37.5	-5.3	0	37.7	67.9	0	3	3	0	9	0	-29.2	DNBL
1 MHz	100%	2% Rel.	-132.2	13.5	10	37.5	-5.3	0	37.7	67.9	6	3	3	0	9	0	-67.3	NBL
5 MHz	100%	2% Rel.	-127.6	13.5	10	37.5	-5.3	0	37.7	67.9	6	3	3	0	9	0	-62.7	BL
20 MHz	100%	2% Rel.	-135.5	13.5	10	37.5	-5.3	0	37.7	67.9	6	3	3	0	9	0	-70.6	BL
100 kHz	20%	50% Abs.	-107.1	13.5	10	37.5	-5.3	0	37.7	67.9	0	3	3	0	9	0	-36.2	DNBL
1 MHz	20%	50% Abs.	-132.2	13.5	10	37.5	-5.3	0	37.7	67.9	6	3	3	0	9	0	-67.3	NBL
5 MHz	20%	50% Abs.	-132.2	13.5	10	37.5	-5.3	0	37.7	67.9	6	3	3	0	9	0	-67.3	NBL
20 MHz	20%	50% Abs.	-132.2	13.5	10	37.5	-5.3	0	37.7	67.9	6	3	3	0	9	0	-67.3	NBL
100 kHz	20%	2% Rel.	-107.1	13.5	10	37.5	-5.3	0	37.7	67.9	0	3	3	0	9	0	-36.2	DNBL
1 MHz	20%	2% Rel.	-132.2	13.5	10	37.5	-5.3	0	37.7	67.9	6	3	3	0	9	0	-67.3	NBL
5 MHz	20%	2% Rel.	-132.2	13.5	10	37.5	-5.3	0	37.7	67.9	6	3	3	0	9	0	-67.3	NBL
20 MHz	20%	2% Rel.	-132.2	13.5	10	37.5	-5.3	0	37.7	67.9	6	3	3	0	9	0	-67.3	NBL

BL -Break Lock

DNBL - Did not break lock at the maximum UWB generator signal power

NBL - Broadband Noise Break-Lock

Operational Scenario: Navigation in Constricted Waterways GPS Receiver and Multiple UWB Device (Outdoor Operation) (I)

GPS Receiver Architecture: Narrowly Spaced Correlator

			Imax (dBW/MHz)	Hgps (m)	Huwb (m)	Hsep (m)	Theta (deg)	Gr (dBic)	Dmin (m)	Lp (dB)	Lmult (dB)	Lallot (dB)	Lman (dB)	Laf (dB)	Lba (dB)	Lsm (dB)	UWB EIRP (dBW/MHz)	GPS Receiver Criteria
Broadband Noise			-132.2	13.5	3	37.5	-15.6	-3	38.9	68.2	6	3	3	0	0	0	-73.0	BL
UWB PRF	**UWB Gating**	**UWB Modulation**	**Imax (dBW)**	**Hgps (m)**	**Huwb (m)**	**Hsep (m)**	**Theta (deg)**	**Gr (dBic)**	**Dmin (m)**	**Lp (dB)**	**Lmult (dB)**	**Lallot (dB)**	**Lman (dB)**	**Laf (dB)**	**Lba (dB)**	**Lsm (dB)**	**UWB EIRP (dBW)**	
1 MHz	100%	None	-144.1	13.5	3	37.5	-15.6	-3	38.9	68.2	0	3	3	0	0	0	-78.9	BL
5 MHz	100%	None	-145.7	13.5	3	37.5	-15.6	-3	38.9	68.2	0	3	3	0	0	0	-80.5	BL
20 MHz	100%	None	-146.1	13.5	3	37.5	-15.6	-3	38.9	68.2	0	3	3	0	0	0	-80.9	BL
5 MHz	20%	None	-146.6	13.5	3	37.5	-15.6	-3	38.9	68.2	0	3	3	0	0	0	-81.4	BL
20 MHz	20%	None	-146.9	13.5	3	37.5	-15.6	-3	38.9	68.2	0	3	3	0	0	0	-81.7	BL
1 MHz	100%	OOK	-139.9	13.5	3	37.5	-15.6	-3	38.9	68.2	0	3	3	0	0	0	-74.7	BL
5 MHz	100%	OOK	-146.7	13.5	3	37.5	-15.6	-3	38.9	68.2	0	3	3	0	0	0	-81.5	BL
20 MHz	100%	OOK	-146.5	13.5	3	37.5	-15.6	-3	38.9	68.2	0	3	3	0	0	0	-81.3	BL
5 MHz	20%	OOK	-142.6	13.5	3	37.5	-15.6	-3	38.9	68.2	0	3	3	0	0	0	-77.4	BL
20 MHz	20%	OOK	-145.4	13.5	3	37.5	-15.6	-3	38.9	68.2	0	3	3	0	0	0	-80.2	BL
UWB PRF	**UWB Gating**	**UWB Modulation**	**Imax (dBW/MHz)**	**Hgps (m)**	**Huwb (m)**	**Hsep (m)**	**Theta (deg)**	**Gr (dBic)**	**Dmin (m)**	**Lp (dB)**	**Lmult (dB)**	**Lallot (dB)**	**Lman (dB)**	**Laf (dB)**	**Lba (dB)**	**Lsm (dB)**	**UWB EIRP (dBW/MHz)**	**GPS Receiver Criteria**
100 kHz	100%	None	-100.2	13.5	3	37.5	-15.6	-3	38.9	68.2	0	3	3	0	0	0	-35.0	DNBL
100 kHz	20%	None	-107.1	13.5	3	37.5	-15.6	-3	38.9	68.2	0	3	3	0	0	0	-41.9	DNBL
1 MHz	20%	None	-132.2	13.5	3	37.5	-15.6	-3	38.9	68.2	6	3	3	0	0	0	-73.0	NBL
100 kHz	100%	OOK	-103.2	13.5	3	37.5	-15.6	-3	38.9	68.2	0	3	3	0	0	0	-38.0	DNBL
100 kHz	20%	OOK	-110.2	13.5	3	37.5	-15.6	-3	38.9	68.2	0	3	3	0	0	0	-45.0	DNBL
1 MHz	20%	OOK	-132.2	13.5	3	37.5	-15.6	-3	38.9	68.2	6	3	3	0	0	0	-73.0	NBL
100 kHz	100%	50% Abs.	-100.1	13.5	3	37.5	-15.6	-3	38.9	68.2	0	3	3	0	0	0	-34.9	DNBL
1 MHz	100%	50% Abs.	-132.2	13.5	3	37.5	-15.6	-3	38.9	68.2	6	3	3	0	0	0	-73.0	NBL
5 MHz	100%	50% Abs.	-127.7	13.5	3	37.5	-15.6	-3	38.9	68.2	6	3	3	0	0	0	-68.5	BL
20 MHz	100%	50% Abs.	-133.6	13.5	3	37.5	-15.6	-3	38.9	68.2	6	3	3	0	0	0	-74.4	BL
100 kHz	100%	2% Rel.	-100.1	13.5	3	37.5	-15.6	-3	38.9	68.2	0	3	3	0	0	0	-34.9	DNBL
1 MHz	100%	2% Rel.	-132.2	13.5	3	37.5	-15.6	-3	38.9	68.2	6	3	3	0	0	0	-73.0	NBL
5 MHz	100%	2% Rel.	-127.6	13.5	3	37.5	-15.6	-3	38.9	68.2	6	3	3	0	0	0	-68.4	BL
20 MHz	100%	2% Rel.	-135.5	13.5	3	37.5	-15.6	-3	38.9	68.2	6	3	3	0	0	0	-76.3	BL
100 kHz	20%	50% Abs.	-107.1	13.5	3	37.5	-15.6	-3	38.9	68.2	0	3	3	0	0	0	-41.9	DNBL
1 MHz	20%	50% Abs.	-132.2	13.5	3	37.5	-15.6	-3	38.9	68.2	6	3	3	0	0	0	-73.0	NBL
5 MHz	20%	50% Abs.	-132.2	13.5	3	37.5	-15.6	-3	38.9	68.2	6	3	3	0	0	0	-73.0	NBL
20 MHz	20%	50% Abs.	-132.2	13.5	3	37.5	-15.6	-3	38.9	68.2	6	3	3	0	0	0	-73.0	NBL
100 kHz	20%	2% Rel.	-107.1	13.5	3	37.5	-15.6	-3	38.9	68.2	0	3	3	0	0	0	-41.9	DNBL
1 MHz	20%	2% Rel.	-132.2	13.5	3	37.5	-15.6	-3	38.9	68.2	6	3	3	0	0	0	-73.0	NBL
5 MHz	20%	2% Rel.	-132.2	13.5	3	37.5	-15.6	-3	38.9	68.2	6	3	3	0	0	0	-73.0	NBL
20 MHz	20%	2% Rel.	-132.2	13.5	3	37.5	-15.6	-3	38.9	68.2	6	3	3	0	0	0	-73.0	NBL

BL - Break Lock

DNBL - Did not break lock at the maximum UWB generator signal power

NBL - Broadband Noise Break Lock

Operational Scenario: Navigation in Constricted Waterways GPS Receiver and Multiple UWB Device (Indoor Operation) (II)
GPS Receiver Architecture: Narrowly Spaced Correlator

			Imax (dBW/MHz)	Hgps (m)	Huwb (m)	Hsep (m)	Theta (deg)	Gr (dBic)	Dmin (m)	Lp (dB)	Lmult (dB)	Lallot (dB)	Lman (dB)	Laf (dB)	Lba (dB)	Lsm (dB)	UWB EIRP (dBW/MHz)	GPS Receiver Criteria
Broadband Noise			-132.2	7.5	10	51	2.8	0	51.1	70.5	6	3	3	0	9	0	-64.7	BL
UWB PRF	**UWB Gating**	**UWB Modulation**	**Imax (dBW)**	**Hgps (m)**	**Huwb (m)**	**Hsep (m)**	**Theta (deg)**	**Gr (dBic)**	**Dmin (m)**	**Lp (dB)**	**Lmult (dB)**	**Lallot (dB)**	**Lman (dB)**	**Laf (dB)**	**Lba (dB)**	**Lsm (dB)**	**UWB EIRP (dBW)**	
1 MHz	100%	None	-144.1	7.5	10	51	2.8	0	51.1	70.5	0	3	3	0	9	0	-70.6	BL
5 MHz	100%	None	-145.7	7.5	10	51	2.8	0	51.1	70.5	0	3	3	0	9	0	-72.2	BL
20 MHz	100%	None	-146.1	7.5	10	51	2.8	0	51.1	70.5	0	3	3	0	9	0	-72.6	BL
5 MHz	20%	None	-146.6	7.5	10	51	2.8	0	51.1	70.5	0	3	3	0	9	0	-73.1	BL
20 MHz	20%	None	-146.9	7.5	10	51	2.8	0	51.1	70.5	0	3	3	0	9	0	-73.4	BL
1 MHz	100%	OOK	-139.9	7.5	10	51	2.8	0	51.1	70.5	0	3	3	0	9	0	-66.4	BL
5 MHz	100%	OOK	-146.7	7.5	10	51	2.8	0	51.1	70.5	0	3	3	0	9	0	-73.2	BL
20 MHz	100%	OOK	-146.5	7.5	10	51	2.8	0	51.1	70.5	0	3	3	0	9	0	-73.0	BL
5 MHz	20%	OOK	-142.6	7.5	10	51	2.8	0	51.1	70.5	0	3	3	0	9	0	-69.1	BL
20 MHz	20%	OOK	-145.4	7.5	10	51	2.8	0	51.1	70.5	0	3	3	0	9	0	-71.9	BL
UWB PRF	**UWB Gating**	**UWB Modulation**	**Imax (dBW/MHz)**	**Hgps (m)**	**Huwb (m)**	**Hsep (m)**	**Theta (deg)**	**Gr (dBic)**	**Dmin (m)**	**Lp (dB)**	**Lmult (dB)**	**Lallot (dB)**	**Lman (dB)**	**Laf (dB)**	**Lba (dB)**	**Lsm (dB)**	**UWB EIRP (dBW/MHz)**	**GPS Receiver Criteria**
100 kHz	100%	None	-100.2	7.5	10	51	2.8	0	51.1	70.5	0	3	3	0	9	0	-26.7	DNBL
100 kHz	20%	None	-107.1	7.5	10	51	2.8	0	51.1	70.5	0	3	3	0	9	0	-33.6	DNBL
1 MHz	20%	None	-132.2	7.5	10	51	2.8	0	51.1	70.5	6	3	3	0	9	0	-64.7	NBL
100 kHz	100%	OOK	-103.2	7.5	10	51	2.8	0	51.1	70.5	0	3	3	0	9	0	-29.7	DNBL
100 kHz	20%	OOK	-110.2	7.5	10	51	2.8	0	51.1	70.5	0	3	3	0	9	0	-36.7	DNBL
1 MHz	20%	OOK	-132.2	7.5	10	51	2.8	0	51.1	70.5	6	3	3	0	9	0	-64.7	NBL
100 kHz	100%	50% Abs.	-100.1	7.5	10	51	2.8	0	51.1	70.5	0	3	3	0	9	0	-26.6	DNBL
1 MHz	100%	50% Abs.	-132.2	7.5	10	51	2.8	0	51.1	70.5	6	3	3	0	9	0	-64.7	NBL
5 MHz	100%	50% Abs.	-127.7	7.5	10	51	2.8	0	51.1	70.5	6	3	3	0	9	0	-60.2	BL
20 MHz	100%	50% Abs.	-133.6	7.5	10	51	2.8	0	51.1	70.5	6	3	3	0	9	0	-66.1	BL
100 kHz	100%	2% Rel.	-100.1	7.5	10	51	2.8	0	51.1	70.5	0	3	3	0	9	0	-26.6	DNBL
1 MHz	100%	2% Rel.	-132.2	7.5	10	51	2.8	0	51.1	70.5	6	3	3	0	9	0	-64.7	NBL
5 MHz	100%	2% Rel.	-127.6	7.5	10	51	2.8	0	51.1	70.5	6	3	3	0	9	0	-60.1	BL
20 MHz	100%	2% Rel.	-135.5	7.5	10	51	2.8	0	51.1	70.5	6	3	3	0	9	0	-68.0	BL
100 kHz	20%	50% Abs.	-107.1	7.5	10	51	2.8	0	51.1	70.5	0	3	3	0	9	0	-33.6	DNBL
1 MHz	20%	50% Abs.	-132.2	7.5	10	51	2.8	0	51.1	70.5	6	3	3	0	9	0	-64.7	NBL
5 MHz	20%	50% Abs.	-132.2	7.5	10	51	2.8	0	51.1	70.5	6	3	3	0	9	0	-64.7	NBL
20 MHz	20%	50% Abs.	-132.2	7.5	10	51	2.8	0	51.1	70.5	6	3	3	0	9	0	-64.7	NBL
100 kHz	20%	2% Rel.	-107.1	7.5	10	51	2.8	0	51.1	70.5	0	3	3	0	9	0	-33.6	DNBL
1 MHz	20%	2% Rel.	-132.2	7.5	10	51	2.8	0	51.1	70.5	6	3	3	0	9	0	-64.7	NBL
5 MHz	20%	2% Rel.	-132.2	7.5	10	51	2.8	0	51.1	70.5	6	3	3	0	9	0	-64.7	NBL
20 MHz	20%	2% Rel.	-132.2	7.5	10	51	2.8	0	51.1	70.5	6	3	3	0	9	0	-64.7	NBL

BL - Break Lock

DNBL - Did not break lock at the maximum UWB generator signal power

NBL - Broadband Noise Break Lock

Operational Scenario: Navigation in Constricted Waterways GPS Receiver and Multiple UWB Device (Outdoor Operation) (II)

GPS Receiver Architecture: Narrowly Spaced Correlator

			Imax (dBW/MHz)	Hgps (m)	Huwb (m)	Hsep (m)	Theta (deg)	Gr (dBic)	Dmin (m)	Lp (dB)	Lmult (dB)	Lallot (dB)	Lman (dB)	Laf (dB)	Lba (dB)	Lsm (dB)	UWB EIRP (dBW/MHz)	GPS Receiver Criteria
Broadband Noise			-132.2	7.5	3	51	-5.0	0	51.2	70.5	6	3	3	0	0	0	-73.7	BL
UWB PRF	**UWB Gating**	**UWB Modulation**	**Imax (dBW)**	**Hgps (m)**	**Huwb (m)**	**Hsep (m)**	**Theta (deg)**	**Gr (dBic)**	**Dmin (m)**	**Lp (dB)**	**Lmult (dB)**	**Lallot (dB)**	**Lman (dB)**	**Laf (dB)**	**Lba (dB)**	**Lsm (dB)**	**UWB EIRP (dBW)**	
1 MHz	100%	None	-144.1	7.5	3	51	-5.0	0	51.2	70.5	0	3	3	0	0	0	-79.6	BL
5 MHz	100%	None	-145.7	7.5	3	51	-5.0	0	51.2	70.5	0	3	3	0	0	0	-81.2	BL
20 MHz	100%	None	-146.1	7.5	3	51	-5.0	0	51.2	70.5	0	3	3	0	0	0	-81.6	BL
5 MHz	20%	None	-146.6	7.5	3	51	-5.0	0	51.2	70.5	0	3	3	0	0	0	-82.1	BL
20 MHz	20%	None	-146.9	7.5	3	51	-5.0	0	51.2	70.5	0	3	3	0	0	0	-82.4	BL
1 MHz	100%	OOK	-139.9	7.5	3	51	-5.0	0	51.2	70.5	0	3	3	0	0	0	-75.4	BL
5 MHz	100%	OOK	-146.7	7.5	3	51	-5.0	0	51.2	70.5	0	3	3	0	0	0	-82.2	BL
20 MHz	100%	OOK	-146.5	7.5	3	51	-5.0	0	51.2	70.5	0	3	3	0	0	0	-82.0	BL
5 MHz	20%	OOK	-142.6	7.5	3	51	-5.0	0	51.2	70.5	0	3	3	0	0	0	-78.1	BL
20 MHz	20%	OOK	-145.4	7.5	3	51	-5.0	0	51.2	70.5	0	3	3	0	0	0	-80.9	BL
UWB PRF	**UWB Gating**	**UWB Modulation**	**Imax (dBW/MHz)**	**Hgps (m)**	**Huwb (m)**	**Hsep (m)**	**Theta (deg)**	**Gr (dBic)**	**Dmin (m)**	**Lp (dB)**	**Lmult (dB)**	**Lallot (dB)**	**Lman (dB)**	**Laf (dB)**	**Lba (dB)**	**Lsm (dB)**	**UWB EIRP (dBW/MHz)**	**GPS Receiver Criteria**
100 kHz	100%	None	-100.2	7.5	3	51	-5.0	0	51.2	70.5	0	3	3	0	0	0	-35.7	DNBL
100 kHz	20%	None	-107.1	7.5	3	51	-5.0	0	51.2	70.5	0	3	3	0	0	0	-42.6	DNBL
1 MHz	20%	None	-132.2	7.5	3	51	-5.0	0	51.2	70.5	6	3	3	0	0	0	-73.7	NBL
100 kHz	100%	OOK	-103.2	7.5	3	51	-5.0	0	51.2	70.5	0	3	3	0	0	0	-38.7	DNBL
100 kHz	20%	OOK	-110.2	7.5	3	51	-5.0	0	51.2	70.5	0	3	3	0	0	0	-45.7	DNBL
1 MHz	20%	OOK	-132.2	7.5	3	51	-5.0	0	51.2	70.5	6	3	3	0	0	0	-73.7	NBL
100 kHz	100%	50% Abs.	-100.1	7.5	3	51	-5.0	0	51.2	70.5	0	3	3	0	0	0	-35.6	DNBL
1 MHz	100%	50% Abs.	-132.2	7.5	3	51	-5.0	0	51.2	70.5	6	3	3	0	0	0	-73.7	NBL
5 MHz	100%	50% Abs.	-127.7	7.5	3	51	-5.0	0	51.2	70.5	6	3	3	0	0	0	-69.2	BL
20 MHz	100%	50% Abs.	-133.6	7.5	3	51	-5.0	0	51.2	70.5	6	3	3	0	0	0	-75.1	BL
100 kHz	100%	2% Rel.	-100.1	7.5	3	51	-5.0	0	51.2	70.5	0	3	3	0	0	0	-35.6	DNBL
1 MHz	100%	2% Rel.	-132.2	7.5	3	51	-5.0	0	51.2	70.5	6	3	3	0	0	0	-73.7	NBL
5 MHz	100%	2% Rel.	-127.6	7.5	3	51	-5.0	0	51.2	70.5	6	3	3	0	0	0	-69.1	BL
20 MHz	100%	2% Rel.	-135.5	7.5	3	51	-5.0	0	51.2	70.5	6	3	3	0	0	0	-77.0	BL
100 kHz	20%	50% Abs.	-107.1	7.5	3	51	-5.0	0	51.2	70.5	0	3	3	0	0	0	-42.6	DNBL
1 MHz	20%	50% Abs.	-132.2	7.5	3	51	-5.0	0	51.2	70.5	6	3	3	0	0	0	-73.7	NBL
5 MHz	20%	50% Abs.	-132.2	7.5	3	51	-5.0	0	51.2	70.5	6	3	3	0	0	0	-73.7	NBL
20 MHz	20%	50% Abs.	-132.2	7.5	3	51	-5.0	0	51.2	70.5	6	3	3	0	0	0	-73.7	NBL
100 kHz	20%	2% Rel.	-107.1	7.5	3	51	-5.0	0	51.2	70.5	0	3	3	0	0	0	-42.6	DNBL
1 MHz	20%	2% Rel.	-132.2	7.5	3	51	-5.0	0	51.2	70.5	6	3	3	0	0	0	-73.7	NBL
5 MHz	20%	2% Rel.	-132.2	7.5	3	51	-5.0	0	51.2	70.5	6	3	3	0	0	0	-73.7	NBL
20 MHz	20%	2% Rel.	-132.2	7.5	3	51	-5.0	0	51.2	70.5	6	3	3	0	0	0	-73.7	NBL

BL - Break Lock

DNBL - Did not break lock at the maximum UWB generator signal power

NBL- Broadband Noise Break Lock

Operational Scenario: Railway GPS Receiver and Multiple UWB Device (Outdoor Operation)
GPS Receiver Architecture: Narrowly Spaced Correlator

			Imax (dBW/MHz)	Hgps (m)	Huwb (m)	Hsep (m)	Theta (deg)	Gr (dBic)	Dmin (m)	Lp (dB)	Lmult (dB)	Lallot (dB)	Lman (dB)	Laf (dB)	Lba (dB)	Lsm (dB)	UWB EIRP (dBW/MHz)	GPS Receiver Criteria
Broadband Noise			-132.2	10	3	7	-45	-4.5	9.9	56.3	4.8	3	3	0	0	0	-82.2	BL
UWB PRF	**UWB Gating**	**UWB Modulation**	**Imax (dBW)**	**Hgps (m)**	**Huwb (m)**	**Hsep (m)**	**Theta (deg)**	**Gr (dBic)**	**Dmin (m)**	**Lp (dB)**	**Lmult (dB)**	**Lallot (dB)**	**Lman (dB)**	**Laf (dB)**	**Lba (dB)**	**Lsm (dB)**	**UWB EIRP (dBW)**	
1 MHz	100%	None	-144.1	10	3	7	-45	-4.5	9.9	56.3	0	3	3	0	0	0	-89.3	BL
5 MHz	100%	None	-145.7	10	3	7	-45	-4.5	9.9	56.3	0	3	3	0	0	0	-90.9	BL
20 MHz	100%	None	-146.1	10	3	7	-45	-4.5	9.9	56.3	0	3	3	0	0	0	-91.3	BL
5 MHz	20%	None	-146.6	10	3	7	-45	-4.5	9.9	56.3	0	3	3	0	0	0	-91.8	BL
20 MHz	20%	None	-146.9	10	3	7	-45	-4.5	9.9	56.3	0	3	3	0	0	0	-92.1	BL
1 MHz	100%	OOK	-139.9	10	3	7	-45	-4.5	9.9	56.3	0	3	3	0	0	0	-85.1	BL
5 MHz	100%	OOK	-146.7	10	3	7	-45	-4.5	9.9	56.3	0	3	3	0	0	0	-91.9	BL
20 MHz	100%	OOK	-146.5	10	3	7	-45	-4.5	9.9	56.3	0	3	3	0	0	0	-91.7	BL
5 MHz	20%	OOK	-142.6	10	3	7	-45	-4.5	9.9	56.3	0	3	3	0	0	0	-87.8	BL
20 MHz	20%	OOK	-145.4	10	3	7	-45	-4.5	9.9	56.3	0	3	3	0	0	0	-90.6	BL
UWB PRF	**UWB Gating**	**UWB Modulation**	**Imax (dBW/MHz)**	**Hgps (m)**	**Huwb (m)**	**Hsep (m)**	**Theta (deg)**	**Gr (dBic)**	**Dmin (m)**	**Lp (dB)**	**Lmult (dB)**	**Lallot (dB)**	**Lman (dB)**	**Laf (dB)**	**Lba (dB)**	**Lsm (dB)**	**UWB EIRP (dBW/MHz)**	**GPS Receiver Criteria**
100 kHz	100%	None	-100.2	10	3	7	-45	-4.5	9.9	56.3	0	3	3	0	0	0	-45.4	DNBL
100 kHz	20%	None	-107.1	10	3	7	-45	-4.5	9.9	56.3	0	3	3	0	0	0	-52.3	DNBL
1 MHz	20%	None	-132.2	10	3	7	-45	-4.5	9.9	56.3	4.8	3	3	0	0	0	-82.2	NBL
100 kHz	100%	OOK	-103.2	10	3	7	-45	-4.5	9.9	56.3	0	3	3	0	0	0	-48.4	DNBL
100 kHz	20%	OOK	-110.2	10	3	7	-45	-4.5	9.9	56.3	0	3	3	0	0	0	-55.4	DNBL
1 MHz	20%	OOK	-132.2	10	3	7	-45	-4.5	9.9	56.3	4.8	3	3	0	0	0	-82.2	NBL
100 kHz	100%	50% Abs.	-100.1	10	3	7	-45	-4.5	9.9	56.3	0	3	3	0	0	0	-45.3	DNBL
1 MHz	100%	50% Abs.	-132.2	10	3	7	-45	-4.5	9.9	56.3	4.8	3	3	0	0	0	-82.2	NBL
5 MHz	100%	50% Abs.	-127.7	10	3	7	-45	-4.5	9.9	56.3	4.8	3	3	0	0	0	-77.7	BL
20 MHz	100%	50% Abs.	-133.6	10	3	7	-45	-4.5	9.9	56.3	4.8	3	3	0	0	0	-83.6	BL
100 kHz	100%	2% Rel.	-100.1	10	3	7	-45	-4.5	9.9	56.3	0	3	3	0	0	0	-45.3	DNBL
1 MHz	100%	2% Rel.	-132.2	10	3	7	-45	-4.5	9.9	56.3	4.8	3	3	0	0	0	-82.2	NBL
5 MHz	100%	2% Rel.	-127.6	10	3	7	-45	-4.5	9.9	56.3	4.8	3	3	0	0	0	-77.6	BL
20 MHz	100%	2% Rel.	-135.5	10	3	7	-45	-4.5	9.9	56.3	4.8	3	3	0	0	0	-85.5	BL
100 kHz	20%	50% Abs.	-107.1	10	3	7	-45	-4.5	9.9	56.3	0	3	3	0	0	0	-52.3	DNBL
1 MHz	20%	50% Abs.	-132.2	10	3	7	-45	-4.5	9.9	56.3	4.8	3	3	0	0	0	-82.2	NBL
5 MHz	20%	50% Abs.	-132.2	10	3	7	-45	-4.5	9.9	56.3	4.8	3	3	0	0	0	-82.2	NBL
20 MHz	20%	50% Abs.	-132.2	10	3	7	-45	-4.5	9.9	56.3	4.8	3	3	0	0	0	-82.2	NBL
100 kHz	20%	2% Rel.	-107.1	10	3	7	-45	-4.5	9.9	56.3	0	3	3	0	0	0	-52.3	DNBL
1 MHz	20%	2% Rel.	-132.2	10	3	7	-45	-4.5	9.9	56.3	4.8	3	3	0	0	0	-82.2	NBL
5 MHz	20%	2% Rel.	-132.2	10	3	7	-45	-4.5	9.9	56.3	4.8	3	3	0	0	0	-82.2	NBL
20 MHz	20%	2% Rel.	-132.2	10	3	7	-45	-4.5	9.9	56.3	4.8	3	3	0	0	0	-82.2	NBL

BL - Break Lock

DNBL - Did not break lock at the maximum UWB generator signal power

NBL - Broadband Noise Break Lock

Operational Scenario: Railway GPS Receiver and Multiple UWB Device (Indoor Operation)
GPS Receiver Architecture: Narrowly Spaced Correlator

			Imax (dBW/MHz)	Hgps (m)	Huwb (m)	Hsep (m)	Theta (deg)	Gr (dBic)	Dmin (m)	Lp (dB)	Lmult (dB)	Lallot (dB)	Lman (dB)	Laf (dB)	Lba (dB)	Lsm (dB)	UWB EIRP (dBW/MHz)	GPS Receiver Criteria
Broadband Noise			-132.2	10	10	7	0.0	0	7.0	53.3	4.8	3	3	0	9	0	-80.7	BL
UWB PRF	**UWB Gating**	**UWB Modulation**	**Imax (dBW)**	**Hgps (m)**	**Huwb (m)**	**Hsep (m)**	**Theta (deg)**	**Gr (dBic)**	**Dmin (m)**	**Lp (dB)**	**Lmult (dB)**	**Lallot (dB)**	**Lman (dB)**	**Laf (dB)**	**Lba (dB)**	**Lsm (dB)**	**UWB EIRP (dBW)**	
1 MHz	100%	None	-144.1	10	10	7	0.0	0	7.0	53.3	0	3	3	0	9	0	-87.8	BL
5 MHz	100%	None	-145.7	10	10	7	0.0	0	7.0	53.3	0	3	3	0	9	0	-89.4	BL
20 MHz	100%	None	-146.1	10	10	7	0.0	0	7.0	53.3	0	3	3	0	9	0	-89.8	BL
5 MHz	20%	None	-146.6	10	10	7	0.0	0	7.0	53.3	0	3	3	0	9	0	-90.3	BL
20 MHz	20%	None	-146.9	10	10	7	0.0	0	7.0	53.3	0	3	3	0	9	0	-90.6	BL
1 MHz	100%	OOK	-139.9	10	10	7	0.0	0	7.0	53.3	0	3	3	0	9	0	-83.6	BL
5 MHz	100%	OOK	-146.7	10	10	7	0.0	0	7.0	53.3	0	3	3	0	9	0	-90.4	BL
20 MHz	100%	OOK	-146.5	10	10	7	0.0	0	7.0	53.3	0	3	3	0	9	0	-90.2	BL
5 MHz	20%	OOK	-142.6	10	10	7	0.0	0	7.0	53.3	0	3	3	0	9	0	-86.3	BL
20 MHz	20%	OOK	-145.4	10	10	7	0.0	0	7.0	53.3	0	3	3	0	9	0	-89.1	BL
UWB PRF	**UWB Gating**	**UWB Modulation**	**Imax (dBW/MHz)**	**Hgps (m)**	**Huwb (m)**	**Hsep (m)**	**Theta (deg)**	**Gr (dBic)**	**Dmin (m)**	**Lp (dB)**	**Lmult (dB)**	**Lallot (dB)**	**Lman (dB)**	**Laf (dB)**	**Lba (dB)**	**Lsm (dB)**	**UWB EIRP (dBW/MHz)**	**GPS Receiver Criteria**
100 kHz	100%	None	-100.2	10	10	7	0.0	0	7.0	53.3	0	3	3	0	9	0	-43.9	DNBL
100 kHz	20%	None	-107.1	10	10	7	0.0	0	7.0	53.3	0	3	3	0	9	0	-50.8	DNBL
1 MHz	20%	None	-132.2	10	10	7	0.0	0	7.0	53.3	4.8	3	3	0	9	0	-80.7	NBL
100 kHz	100%	OOK	-103.2	10	10	7	0.0	0	7.0	53.3	0	3	3	0	9	0	-46.9	DNBL
100 kHz	20%	OOK	-110.2	10	10	7	0.0	0	7.0	53.3	0	3	3	0	9	0	-53.9	DNBL
1 MHz	20%	OOK	-132.2	10	10	7	0.0	0	7.0	53.3	4.8	3	3	0	9	0	-80.7	NBL
100 kHz	100%	50% Abs.	-100.1	10	10	7	0.0	0	7.0	53.3	0	3	3	0	9	0	-43.8	DNBL
1 MHz	100%	50% Abs.	-132.2	10	10	7	0.0	0	7.0	53.3	4.8	3	3	0	9	0	-80.7	NBL
5 MHz	100%	50% Abs.	-127.7	10	10	7	0.0	0	7.0	53.3	4.8	3	3	0	9	0	-76.2	BL
20 MHz	100%	50% Abs.	-133.6	10	10	7	0.0	0	7.0	53.3	4.8	3	3	0	9	0	-82.1	BL
100 kHz	100%	2% Rel.	-100.1	10	10	7	0.0	0	7.0	53.3	0	3	3	0	9	0	-43.8	DNBL
1 MHz	100%	2% Rel.	-132.2	10	10	7	0.0	0	7.0	53.3	4.8	3	3	0	9	0	-80.7	NBL
5 MHz	100%	2% Rel.	-127.6	10	10	7	0.0	0	7.0	53.3	4.8	3	3	0	9	0	-76.1	BL
20 MHz	100%	2% Rel.	-135.5	10	10	7	0.0	0	7.0	53.3	4.8	3	3	0	9	0	-84.0	BL
100 kHz	20%	50% Abs.	-107.1	10	10	7	0.0	0	7.0	53.3	0	3	3	0	9	0	-50.8	DNBL
1 MHz	20%	50% Abs.	-132.2	10	10	7	0.0	0	7.0	53.3	4.8	3	3	0	9	0	-80.7	NBL
5 MHz	20%	50% Abs.	-132.2	10	10	7	0.0	0	7.0	53.3	4.8	3	3	0	9	0	-80.7	NBL
20 MHz	20%	50% Abs.	-132.2	10	10	7	0.0	0	7.0	53.3	4.8	3	3	0	9	0	-80.7	NBL
100 kHz	20%	2% Rel.	-107.1	10	10	7	0.0	0	7.0	53.3	0	3	3	0	9	0	-50.8	DNBL
1 MHz	20%	2% Rel.	-132.2	10	10	7	0.0	0	7.0	53.3	4.8	3	3	0	9	0	-80.7	NBL
5 MHz	20%	2% Rel.	-132.2	10	10	7	0.0	0	7.0	53.3	4.8	3	3	0	9	0	-80.7	NBL
20 MHz	20%	2% Rel.	-132.2	10	10	7	0.0	0	7.0	53.3	4.8	3	3	0	9	0	-80.7	NBL

BL - Break Lock

DNBL - Did not break lock at the maximum UWB generator signal power

NBL - Broadband Noise Break Lock

Operational Scenario: Surveying GPS Receiver and Single UWB Device

GPS Receiver Architecture: Narrowly Spaced Correlator

			Imax (dBW/MHz)	Hgps (m)	Huwb (m)	Hsep (m)	Theta (deg)	Gr (dBic)	Dmin (m)	Lp (dB)	Lmult (dB)	Lallot (dB)	Lman (dB)	Laf (dB)	Lba (dB)	Lsm (dB)	UWB EIRP (dBW/MHz)	GPS Receiver Criteria
Broadband Noise			-132.2	3	10	30	13.1	3	30.0	65.9	0	3	3	0	0	0	-75.3	BL
UWB PRF	**UWB Gating**	**UWB Modulation**	**Imax (dBW)**	**Hgps (m)**	**Huwb (m)**	**Hsep (m)**	**Theta (deg)**	**Gr (dBic)**	**Dmin (m)**	**Lp (dB)**	**Lmult (dB)**	**Lallot (dB)**	**Lman (dB)**	**Laf (dB)**	**Lba (dB)**	**Lsm (dB)**	**UWB EIRP (dBW)**	
1 MHz	100%	None	-144.1	3	10	30	13.1	3	30.0	65.9	0	3	3	0	0	0	-87.2	BL
5 MHz	100%	None	-145.7	3	10	30	13.1	3	30.0	65.9	0	3	3	0	0	0	-88.8	BL
20 MHz	100%	None	-146.1	3	10	30	13.1	3	30.0	65.9	0	3	3	0	0	0	-89.2	BL
5 MHz	20%	None	-146.6	3	10	30	13.1	3	30.0	65.9	0	3	3	0	0	0	-89.7	BL
20 MHz	20%	None	-146.9	3	10	30	13.1	3	30.0	65.9	0	3	3	0	0	0	-90.0	BL
1 MHz	100%	OOK	-139.9	3	10	30	13.1	3	30.0	65.9	0	3	3	0	0	0	-83.0	BL
5 MHz	100%	OOK	-146.7	3	10	30	13.1	3	30.0	65.9	0	3	3	0	0	0	-89.8	BL
20 MHz	100%	OOK	-146.5	3	10	30	13.1	3	30.0	65.9	0	3	3	0	0	0	-89.6	BL
5 MHz	20%	OOK	-142.6	3	10	30	13.1	3	30.0	65.9	0	3	3	0	0	0	-85.7	BL
20 MHz	20%	OOK	-145.4	3	10	30	13.1	3	30.0	65.9	0	3	3	0	0	0	-88.5	BL
UWB PRF	**UWB Gating**	**UWB Modulation**	**Imax (dBW/MHz)**	**Hgps (m)**	**Huwb (m)**	**Hsep (m)**	**Theta (deg)**	**Gr (dBic)**	**Dmin (m)**	**Lp (dB)**	**Lmult (dB)**	**Lallot (dB)**	**Lman (dB)**	**Laf (dB)**	**Lba (dB)**	**Lsm (dB)**	**UWB EIRP (dBW/MHz)**	**GPS Receiver Criteria**
100 kHz	100%	None	-100.2	3	10	30	13.1	3	30.0	65.9	0	3	3	0	0	0	-43.3	DNBL
100 kHz	20%	None	-107.1	3	10	30	13.1	3	30.0	65.9	0	3	3	0	0	0	-50.2	DNBL
1 MHz	20%	None	-94.8	3	10	30	13.1	3	30.0	65.9	0	3	3	0	0	0	-37.9	DNBL
100 kHz	100%	OOK	-103.2	3	10	30	13.1	3	30.0	65.9	0	3	3	0	0	0	-46.3	DNBL
100 kHz	20%	OOK	-110.2	3	10	30	13.1	3	30.0	65.9	0	3	3	0	0	0	-53.3	DNBL
1 MHz	20%	OOK	-97.8	3	10	30	13.1	3	30.0	65.9	0	3	3	0	0	0	-40.9	DNBL
100 kHz	100%	50% Abs.	-100.1	3	10	30	13.1	3	30.0	65.9	0	3	3	0	0	0	-43.2	DNBL
1 MHz	100%	50% Abs.	-105.9	3	10	30	13.1	3	30.0	65.9	0	3	3	0	0	0	-49.0	BL
5 MHz	100%	50% Abs.	-127.7	3	10	30	13.1	3	30.0	65.9	0	3	3	0	0	0	-70.8	BL
20 MHz	100%	50% Abs.	-133.6	3	10	30	13.1	3	30.0	65.9	0	3	3	0	0	0	-76.7	BL
100 kHz	100%	2% Rel.	-100.1	3	10	30	13.1	3	30.0	65.9	0	3	3	0	0	0	-43.2	DNBL
1 MHz	100%	2% Rel.	-87.8	3	10	30	13.1	3	30.0	65.9	0	3	3	0	0	0	-30.9	DNBL
5 MHz	100%	2% Rel.	-127.6	3	10	30	13.1	3	30.0	65.9	0	3	3	0	0	0	-70.7	BL
20 MHz	100%	2% Rel.	-135.5	3	10	30	13.1	3	30.0	65.9	0	3	3	0	0	0	-78.6	BL
100 kHz	20%	50% Abs.	-107.1	3	10	30	13.1	3	30.0	65.9	0	3	3	0	0	0	-50.2	DNBL
1 MHz	20%	50% Abs.	-94.8	3	10	30	13.1	3	30.0	65.9	0	3	3	0	0	0	-37.9	DNBL
5 MHz	20%	50% Abs.	-88.5	3	10	30	13.1	3	30.0	65.9	0	3	3	0	0	0	-31.6	DNBL
20 MHz	20%	50% Abs.	-100.5	3	10	30	13.1	3	30.0	65.9	0	3	3	0	0	0	-43.6	BL
100 kHz	20%	2% Rel.	-107.1	3	10	30	13.1	3	30.0	65.9	0	3	3	0	0	0	-50.2	DNBL
1 MHz	20%	2% Rel.	-94.7	3	10	30	13.1	3	30.0	65.9	0	3	3	0	0	0	-37.8	DNBL
5 MHz	20%	2% Rel.	-88.5	3	10	30	13.1	3	30.0	65.9	0	3	3	0	0	0	-31.6	DNBL
20 MHz	20%	2% Rel.	-122.2	3	10	30	13.1	3	30.0	65.9	0	3	3	0	0	0	-65.3	BL

BL - Break Lock

DNBL - Did not break lock at the maximum UWB generator signal power

NBL - Broadband Noise Break Lock

Operational Scenario: Surveying GPS Receiver and Multiple UWB Devices

GPS Receiver Architecture: Narrowly Spaced Correlator

			Imax (dBW/MHz)	Hgps (m)	Huwb (m)	Hsep #1 (m)	Theta #1 (deg)	Gr #1 (dBic)	Dmin #1 (m)	Lp #1 (dB)	Hsep #2 (m)	Theta #2 (deg)	Gr #2 (dBic)	Dmin #2 (m)	Lp #2 (dB)	Hsep #3 (m)	Theta #3 (deg)	Gr #3 (dBic)	Dmin #3 (m)	Lp #3 (dB)	Lallot (dB)	Lman (dB)	Laf (dB)	Lba (dB)	Lsm (dB)	UWB EIRP	GPS Receiver Criteria (dBW/MHz)
Broadband Noise			-132.2	3	10	30	13.1	3	30.0	65.9	300.0	1.3	0	300.0	85.9	750	0.5	0	750	93.8	3.00	3	0	0	0	-75.4	BL
UWB PRF	UWB Gating	UWB Modulation	Imax (dBW)	Hgps (m)	Huwb (m)	Vsep #1 (m)	Theta #1 (deg)	Gr #1 (dBic)	Dmin #1 (m)	Lp #1 (dB)	Vsep #2 (m)	Theta #2 (deg)	Gr #2 (dBic)	Dmin #2 (m)	Lp #2 (dB)	Vsep #3 (m)	Theta #3 (deg)	Gr #3 (dBic)	Dmin #3 (m)	Lp #3 (dB)	Lallot (dB)	Lman (dB)	Laf (dB)	Lba (dB)	Lsm (dB)		UWB EIRP (dBW/MHz)
1 MHz	100%	None	-144.1	3	10	30	13.1	3	30.0	65.9	300.0	1.3	0	300.0	85.9	750	0.5	0	750	93.8	3.00	3	0	0	0	-87.3	BL
5 MHz	100%	None	-145.7	3	10	30	13.1	3	30.0	65.9	300.0	1.3	0	300.0	85.9	750	0.5	0	750	93.8	3.00	3	0	0	0	-88.9	BL
20 MHz	100%	None	-146.1	3	10	30	13.1	3	30.0	65.9	300.0	1.3	0	300.0	85.9	750	0.5	0	750	93.8	3.00	3	0	0	0	-89.3	BL
5 MHz	20%	None	-146.6	3	10	30	13.1	3	30.0	65.9	300.0	1.3	0	300.0	85.9	750	0.5	0	750	93.8	3.00	3	0	0	0	-89.8	BL
20 MHz	20%	None	-146.9	3	10	30	13.1	3	30.0	65.9	300.0	1.3	0	300.0	85.9	750	0.5	0	750	93.8	3.00	3	0	0	0	-90.1	BL
1 MHz	100%	OOK	-139.9	3	10	30	13.1	3	30.0	65.9	300.0	1.3	0	300.0	85.9	750	0.5	0	750	93.8	3.00	3	0	0	0	-83.1	BL
5 MHz	100%	OOK	-146.7	3	10	30	13.1	3	30.0	65.9	300.0	1.3	0	300.0	85.9	750	0.5	0	750	93.8	3.00	3	0	0	0	-89.9	BL
20 MHz	100%	OOK	-146.5	3	10	30	13.1	3	30.0	65.9	300.0	1.3	0	300.0	85.9	750	0.5	0	750	93.8	3.00	3	0	0	0	-89.7	BL
5 MHz	20%	OOK	-142.6	3	10	30	13.1	3	30.0	65.9	300.0	1.3	0	300.0	85.9	750	0.5	0	750	93.8	3.00	3	0	0	0	-85.8	BL
20 MHz	20%	OOK	-145.4	3	10	30	13.1	3	30.0	65.9	300.0	1.3	0	300.0	85.9	750	0.5	0	750	93.8	3.00	3	0	0	0	-88.6	BL
UWB PRF	UWB Gating	UWB Modulation	Imax (dBW/MHz)	Hgps (m)	Huwb (m)	Vsep #1 (m)	Theta #1 (deg)	Gr #1 (dBic)	Dmin #1 (m)	Lp #1 (dB)	Vsep #2 (m)	Theta #2 (deg)	Gr #2 (dBic)	Dmin #2 (m)	Lp #2 (dB)	Vsep #3 (m)	Theta #3 (deg)	Gr #3 (dBic)	Dmin #3 (m)	Lp #3 (dB)	Lallot (dB)	Lman (dB)	Laf (dB)	Lba (dB)	Lsm (dB)	UWB EIRP	GPS Receiver Criteria (dBW/MHz)
100 kHz	100%	None	-100.2	3	10	30	13.1	3	30.0	65.9	300.0	1.3	0	300.0	85.9	750	0.5	0	750	93.8	3.00	3	0	0	0	-43.4	DNBL
100 kHz	20%	None	-107.1	3	10	30	13.1	3	30.0	65.9	300.0	1.3	0	300.0	85.9	750	0.5	0	750	93.8	3.00	3	0	0	0	-50.3	DNBL
1 MHz	20%	None	-132.2	3	10	30	13.1	3	30.0	65.9	300.0	1.3	0	300.0	85.9	750	0.5	0	750	93.8	3.00	3	0	0	0	-75.4	NBL
100 kHz	100%	OOK	-103.2	3	10	30	13.1	3	30.0	65.9	300.0	1.3	0	300.0	85.9	750	0.5	0	750	93.8	3.00	3	0	0	0	-46.4	DNBL
100 kHz	20%	OOK	-110.2	3	10	30	13.1	3	30.0	65.9	300.0	1.3	0	300.0	85.9	750	0.5	0	750	93.8	3.00	3	0	0	0	-53.4	DNBL
1 MHz	20%	OOK	-132.2	3	10	30	13.1	3	30.0	65.9	300.0	1.3	0	300.0	85.9	750	0.5	0	750	93.8	3.00	3	0	0	0	-75.4	NBL
100 kHz	100%	50% Abs.	-100.1	3	10	30	13.1	3	30.0	65.9	300.0	1.3	0	300.0	85.9	750	0.5	0	750	93.8	3.00	3	0	0	0	-43.3	DNBL
1 MHz	100%	50% Abs.	-132.2	3	10	30	13.1	3	30.0	65.9	300.0	1.3	0	300.0	85.9	750	0.5	0	750	93.8	3.00	3	0	0	0	-75.4	NBL
5 MHz	100%	50% Abs.	-127.7	3	10	30	13.1	3	30.0	65.9	300.0	1.3	0	300.0	85.9	750	0.5	0	750	93.8	3.00	3	0	0	0	-70.9	BL
20 MHz	100%	50% Abs.	-133.6	3	10	30	13.1	3	30.0	65.9	300.0	1.3	0	300.0	85.9	750	0.5	0	750	93.8	3.00	3	0	0	0	-76.8	BL
100 kHz	100%	2% Rel.	-100.1	3	10	30	13.1	3	30.0	65.9	300.0	1.3	0	300.0	85.9	750	0.5	0	750	93.8	3.00	3	0	0	0	-43.3	DNBL
1 MHz	100%	2% Rel.	-132.2	3	10	30	13.1	3	30.0	65.9	300.0	1.3	0	300.0	85.9	750	0.5	0	750	93.8	3.00	3	0	0	0	-75.4	NBL
5 MHz	100%	2% Rel.	-127.6	3	10	30	13.1	3	30.0	65.9	300.0	1.3	0	300.0	85.9	750	0.5	0	750	93.8	3.00	3	0	0	0	-70.8	BL
20 MHz	100%	2% Rel.	-135.5	3	10	30	13.1	3	30.0	65.9	300.0	1.3	0	300.0	85.9	750	0.5	0	750	93.8	3.00	3	0	0	0	-78.7	BL
100 kHz	20%	50% Abs.	-107.1	3	10	30	13.1	3	30.0	65.9	300.0	1.3	0	300.0	85.9	750	0.5	0	750	93.8	3.00	3	0	0	0	-50.3	DNBL
1 MHz	20%	50% Abs.	-132.2	3	10	30	13.1	3	30.0	65.9	300.0	1.3	0	300.0	85.9	750	0.5	0	750	93.8	3.00	3	0	0	0	-75.4	NBL
5 MHz	20%	50% Abs.	-132.2	3	10	30	13.1	3	30.0	65.9	300.0	1.3	0	300.0	85.9	750	0.5	0	750	93.8	3.00	3	0	0	0	-75.4	NBL
20 MHz	20%	50% Abs.	-132.2	3	10	30	13.1	3	30.0	65.9	300.0	1.3	0	300.0	85.9	750	0.5	0	750	93.8	3.00	3	0	0	0	-75.4	NBL
100 kHz	20%	2% Rel.	-107.1	3	10	30	13.1	3	30.0	65.9	300.0	1.3	0	300.0	85.9	750	0.5	0	750	93.8	3.00	3	0	0	0	-50.3	DNBL
1 MHz	20%	2% Rel.	-132.2	3	10	30	13.1	3	30.0	65.9	300.0	1.3	0	300.0	85.9	750	0.5	0	750	93.8	3.00	3	0	0	0	-75.4	NBL
5 MHz	20%	2% Rel.	-132.2	3	10	30	13.1	3	30.0	65.9	300.0	1.3	0	300.0	85.9	750	0.5	0	750	93.8	3.00	3	0	0	0	-75.4	NBL
20 MHz	20%	2% Rel.	-132.2	3	10	30	13.1	3	30.0	65.9	300.0	1.3	0	300.0	85.9	750	0.5	0	750	93.8	3.00	3	0	0	0	-75.4	NBL

BL Break Lock

DNBL - Did not break lock at the maximum UWB generator signal power

NBL - Broadband Noise Break Lock

Operational Scenario: Aviation GPS Receiver Non-Precision Approach and Multiple UWB Devices

GPS Receiver Architecture: C/A Code (TSO-C129a Compliant)

			Imax (dBW/MHz)	Hgps (m)	Huwb (m)	Gr (dBi)	Dmin (m)	Lp (dB)	Lmult (dB)	Lallot (dB)	Lman (dB)	Laf (dB)	Lba (dB)	Lsm (dB)	UWB EIRP (dBW/MHz)	GPS Receiver Criteria
Broadband Noise			-136	41.4	3	-10	41.4	68.7	6	10	3	0	0	6	-82.3	RQT
UWB PRF	UWB Gating	UWB Modulation	Imax (dBW)	Hgps (m)	Huwb (m)	Gr (dBi)	Dmin (m)	Lp (dB)	Lmult (dB)	Lallot (dB)	Lman (dB)	Laf (dB)	Lba (dB)	Lsm (dB)	UWB EIRP (dBW)	
1 MHz	100%	None	-140.8	41.4	3	-10	41.4	68.7	0	10	3	0	0	6	-81.1	BL
5 MHz	100%	None	-138.4	41.4	3	-10	41.4	68.7	0	10	3	0	0	6	-78.7	BL
20 MHz	100%	None	-139.8	41.4	3	-10	41.4	68.7	0	10	3	0	0	6	-80.1	BL
1 MHz	20%	None	-146.7	41.4	3	-10	41.4	68.7	0	10	3	0	0	6	-87.0	BL
5 MHz	20%	None	-143.2	41.4	3	-10	41.4	68.7	0	10	3	0	0	6	-83.5	BL
20 MHz	20%	None	-147.8	41.4	3	-10	41.4	68.7	0	10	3	0	0	6	-88.1	BL
1 MHz	100%	OOK	-140.8	41.4	3	-10	41.4	68.7	0	10	3	0	0	6	-81.1	BL
5 MHz	100%	OOK	-139.4	41.4	3	-10	41.4	68.7	0	10	3	0	0	6	-79.7	BL
20 MHz	100%	OOK	-138.2	41.4	3	-10	41.4	68.7	0	10	3	0	0	6	-78.5	BL
1 MHz	20%	OOK	-140.7	41.4	3	-10	41.4	68.7	0	10	3	0	0	6	-81.0	BL
5 MHz	20%	OOK	-143.3	41.4	3	-10	41.4	68.7	0	10	3	0	0	6	-83.6	BL
20 MHz	20%	OOK	-142.1	41.4	3	-10	41.4	68.7	0	10	3	0	0	6	-82.4	BL
UWB PRF	UWB Gating	UWB Modulation	Imax (dBW/MHz)	Hgps (m)	Huwb (m)	Gr (dBi)	Dmin (m)	Lp (dB)	Lmult (dB)	Lallot (dB)	Lman (dB)	Laf (dB)	Lba (dB)	Lsm (dB)	UWB EIRP (dBW/MHz)	GPS Receiver Criteria
100 kHz	100%	None	-117.9	41.4	3	-10	41.4	68.7	0	10	3	0	0	6	-58.2	BL
100 kHz	20%	None	-106.8	41.4	3	-10	41.4	68.7	0	10	3	0	0	6	-47.1	DNBL
100 kHz	100%	OOK	-103.1	41.4	3	-10	41.4	68.7	0	10	3	0	0	6	-43.4	DNBL
100 kHz	20%	OOK	-109.9	41.4	3	-10	41.4	68.7	0	10	3	0	0	6	-50.2	DNBL
100 kHz	100%	50% Abs.	-115	41.4	3	-10	41.4	68.7	0	10	3	0	0	6	-55.3	DNBL
1 MHz	100%	50% Abs.	-142	41.4	3	-10	41.4	68.7	6	10	3	0	0	6	-88.3	RQT
5 MHz	100%	50% Abs.	-142	41.4	3	-10	41.4	68.7	6	10	3	0	0	6	-88.3	RQT
20 MHz	100%	50% Abs.	-141	41.4	3	-10	41.4	68.7	6	10	3	0	0	6	-87.3	RQT
100 kHz	100%	2% Rel.	-97.9	41.4	3	-10	41.4	68.7	0	10	3	0	0	6	-38.2	BL
1 MHz	100%	2% Rel.	-141.5	41.4	3	-10	41.4	68.7	6	10	3	0	0	6	-87.8	RQT
5 MHz	100%	2% Rel.	-143	41.4	3	-10	41.4	68.7	6	10	3	0	0	6	-89.3	RQT
20 MHz	100%	2% Rel.	-141	41.4	3	-10	41.4	68.7	6	10	3	0	0	6	-87.3	RQT
100 kHz	20%	50% Abs.	-106.8	41.4	3	-10	41.4	68.7	0	10	3	0	0	6	-47.1	DNBL
1 MHz	20%	50% Abs.	-139.5	41.4	3	-10	41.4	68.7	6	10	3	0	0	6	-85.8	RQT
5 MHz	20%	50% Abs.	-141.9	41.4	3	-10	41.4	68.7	6	10	3	0	0	6	-88.2	RQT
20 MHz	20%	50% Abs.	-140.4	41.4	3	-10	41.4	68.7	6	10	3	0	0	6	-86.7	RQT
100 kHz	20%	2% Abs.	-106.9	41.4	3	-10	41.4	68.7	0	10	3	0	0	6	-47.2	DNBL
1 MHz	20%	2% Rel.	-133.5	41.4	3	-10	41.4	68.7	6	10	3	0	0	6	-79.8	BL
5 MHz	20%	2% Rel.	-142.4	41.4	3	-10	41.4	68.7	6	10	3	0	0	6	-88.7	RQT
20 MHz	20%	2% Rel.	-139.9	41.4	3	-10	41.4	68.7	6	10	3	0	0	6	-86.2	RQT

BL - Break Lock

RQT - Reacquisition Time

DNBL - Did not break lock at the maximum UWB generator signal power

Transmitter

uV/m/MHz	@ R(m)	
500	3	field st
-41.278		EIRP
FREQ	1575.42	
RIN	0	maxvis
ROUT	20	ROUT

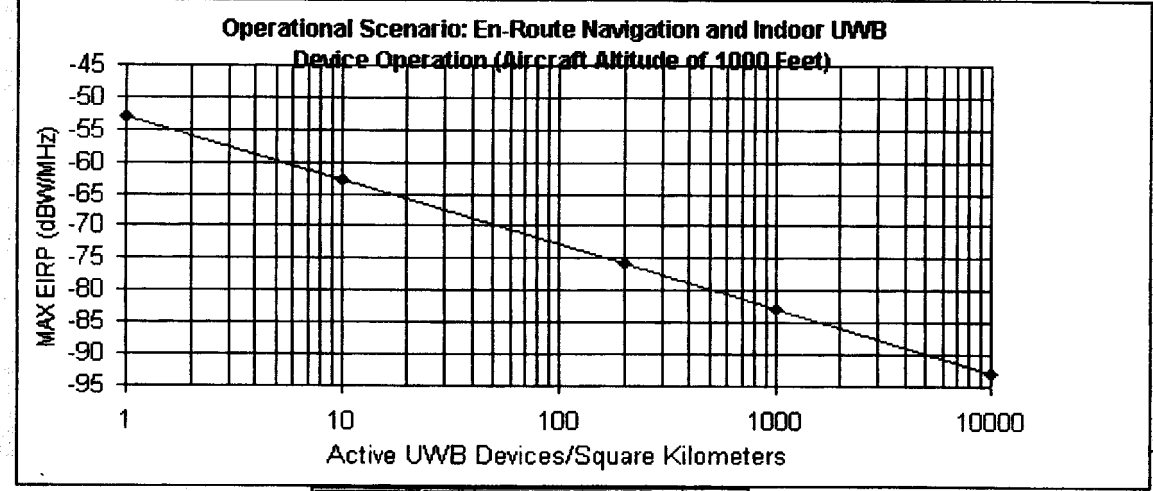
Path Loss: Free Space; Continental Tempera; Okumura; Tirem & ITM; Flat; Average Groun; 10%,50%,5

Receive Antenna: bw(deg) 515.74, Gain(dBi) -10; 180, -0.8569; Const; OMNI; V; H; Beamwidth horizontal(deg; vertical(deg; backlobe; elev(deg); backlobe

General: Calculate; Mode: EIRP[I/N]; Parameterize: Altitude; h(km); NF(dB) 10; System Losses -8; Smin(dBm); Iother(dBm/MHz); Iagg+Isingle; -2.0228; -68.952; 0; 3; -103.98; dB; 0.15; I other; Criteria(dB); MxSnglEirp; @R(km); tranht(m); N(dBm/MHz); B_{ir}(MHz)

Ring Spacing: 10 meter; Make trace file?

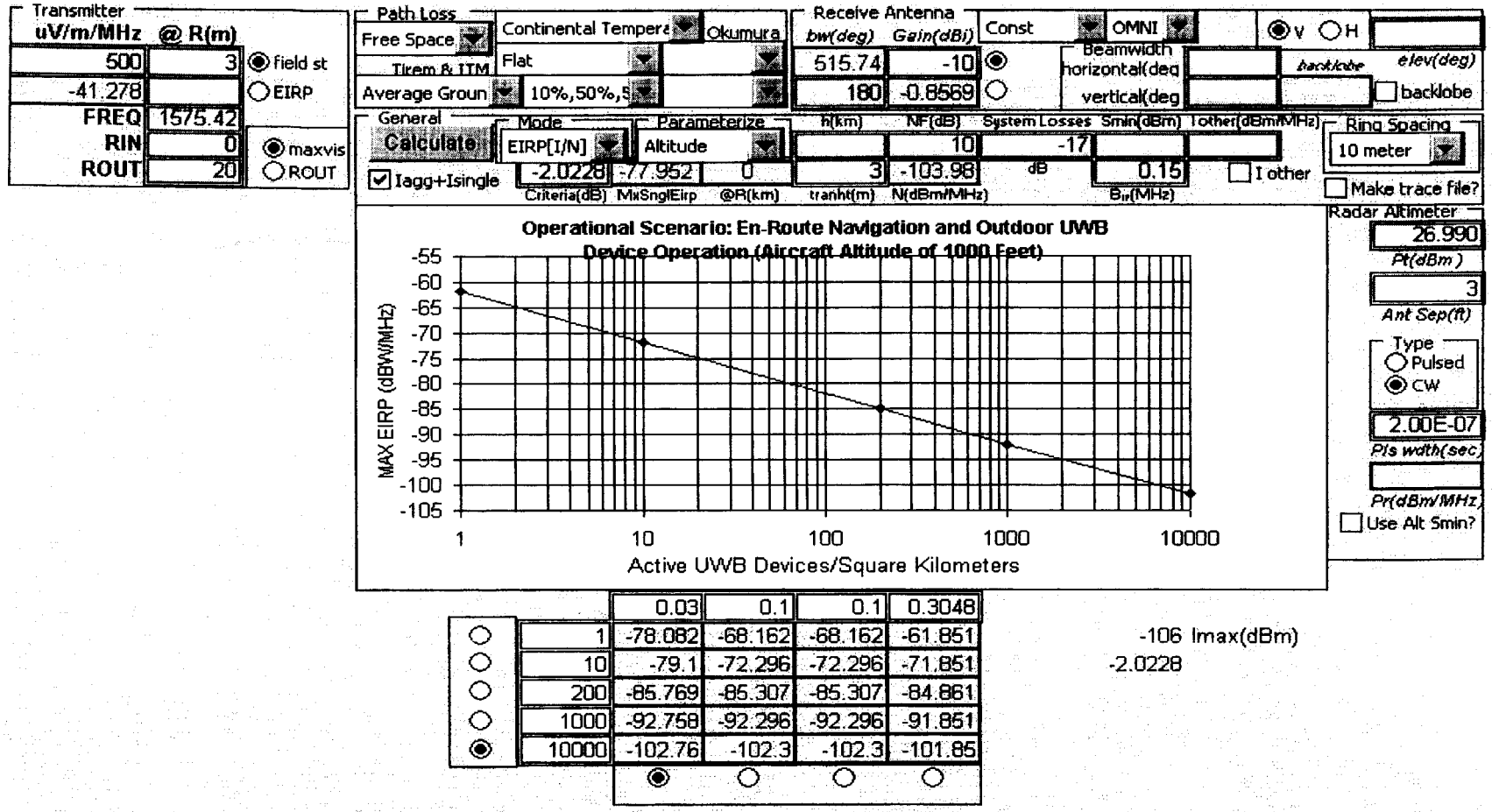
Radar Altimeter: 26.990; Pt(dBm); 3; Ant Sep(ft); Type: Pulsed, CW; 2.00E-07; Pls wdth(sec); Pr(dBm/MHz); Use Alt Smin?



		0.03	0.1	0.1	0.3048
○	1	-69.082	-59.162	-59.162	-52.851
○	10	-70.1	-63.296	-63.296	-62.851
○	200	-76.769	-76.307	-76.307	-75.861
○	1000	-83.758	-83.296	-83.296	-82.851
◉	10000	-93.758	-93.296	-93.296	-92.851
		◉	○	○	○

-106 Imax(dBm)

-2.0228


Transmitter
uV/m/MHz @ R(m)
500 3 field st
-41.278 EIRP
FREQ 1575.42
RIN 0 maxvis
ROUT 20 ROUT
Path Loss
Free Space
Continental Tempera
Okumura
Tirem & ITM
Flat
Average Groun
10%,50%,5
Receive Antenna
bw(deg) Gain(dBi)
515.74 -10
180 -0.8569
Const
OMNI
V H
Beamwidth
horizontal(deg
vertical(deg
backlobe
elev(deg)
backlobe
General
Calculate
Mode
EIRP[I/N]
Parameterize
Altitude
h(km)
NF(dB)
System Losses
Smin(dBm)
Iother(dBm/MHz)
10
-17
Iagg+Isingle
-2.0228
-77.952
0
3
-103.98
dB
0.15
I other
Criteria(dB)
MxSnglEirp
@R(km)
tranht(m)
N(dBm/MHz)
Bw(MHz)
Ring Spacing
10 meter
Make trace file?
Radar Altimeter
26.990
Pt(dBm)
3
Ant Sep(ft)
Type
Pulsed
CW
2.00E-07
Pls wdth(sec)
Pr(dBm/MHz)
Use Alt Smin?
Operational Scenario: En-Route Navigation and Outdoor UWB
Device Operation (Aircraft Altitude of 1000 Feet)
MAX EIRP (dBW/MHz)
-55
-60
-65
-70
-75
-80
-85
-90
-95
-100
-105
1
10
100
1000
10000
Active UWB Devices/Square Kilometers
0.03 0.1 0.1 0.3048
1 -78.082 -68.162 -68.162 -61.851
10 -79.1 -72.296 -72.296 -71.851
200 -85.769 -85.307 -85.307 -84.861
1000 -92.758 -92.296 -92.296 -91.851
10000 -102.76 -102.3 -102.3 -101.85
-106 Imax(dBm)
-2.0228

Appendix B
Results of Distance Separation Analysis

C/A Code Receiver Architecture (3 dBi Antenna gain)

UWB PRF	UWB Modulation	UWB Gating Percentage	Category of Interfering Signal	UWB Interference Threshold (dBW/MHz or dBW)[a,b]	EIRP (Part 15 Limit) (dBW/MHz)	Gr (dBi)	20 Log F (dB)	Propagation Constant	Lman (dB)	Lallot (dB)	Required Distance Separation (m)
100 kHz	None	100%	Pulse-Like	-112.6	-71.3	3	63.95	27.55	3	3	4.96
100 kHz	None	20%	Pulse-Like	-106.5	-71.3	3	63.95	27.55	3	3	2.46
100 kHz	OOK	100%	Pulse-Like	-102.6	-71.3	3	63.95	27.55	3	3	1.57
100 kHz	OOK	20%	Pulse-Like	-109.4	-71.3	3	63.95	27.55	3	3	3.43
100 kHz	50% Abs.	100%	Pulse-Like	-100	-71.3	3	63.95	27.55	3	3	1.16
100 kHz	50% Abs.	20%	Pulse-Like	-107	-71.3	3	63.95	27.55	3	3	2.60
100 kHz	2% Rel.	100%	Pulse-Like	-100	-71.3	3	63.95	27.55	3	3	1.16
100 kHz	2% Rel.	20%	Pulse-Like	-107	-71.3	3	63.95	27.55	3	3	2.60
1 MHz	None	100%	CW-Like	-143.7	-71.3	3	63.95	27.55	3	3	177.87
1 MHz	None	20%	Pulse-Like	-97.6	-71.3	3	63.95	27.55	3	3	0.88
1 MHz	OOK	100%	Pulse-Like	-121.2	-71.3	3	63.95	27.55	3	3	13.34
1 MHz	OOK	20%	Pulse-Like	-101.1	-71.3	3	63.95	27.55	3	3	1.32
1 MHz	50% Abs.	100%	Pulse-Like	-113	-71.3	3	63.95	27.55	3	3	5.19
1 MHz	50% Abs.	20%	Pulse-Like	-97.5	-71.3	3	63.95	27.55	3	3	0.87
1 MHz	2% Rel.	100%	Pulse-Like	-131	-71.3	3	63.95	27.55	3	3	41.22
1 MHz	2% Rel.	20%	Pulse-Like	-97	-71.3	3	63.95	27.55	3	3	0.82
5 MHz	None	100%	CW-Like	-145.5	-71.3	3	63.95	27.55	3	3	218.83
5 MHz	None	20%	CW-Like	-145.2	-71.3	3	63.95	27.55	3	3	211.40
5 MHz	OOK	100%	CW-Like	-144.5	-71.3	3	63.95	27.55	3	3	195.03
5 MHz	OOK	20%	CW-Like	-144.2	-71.3	3	63.95	27.55	3	3	188.41
5 MHz	50% Abs.	100%	Noise-Like	-137	-71.3	3	63.95	27.55	3	3	82.24
5 MHz	50% Abs.	20%	Pulse-Like	-105	-71.3	3	63.95	27.55	3	3	2.07
5 MHz	2% Rel.	100%	Noise-Like	-136.5	-71.3	3	63.95	27.55	3	3	77.64
5 MHz	2% Rel.	20%	Pulse-Like	-89	-71.3	3	63.95	27.55	3	3	0.33
20 MHz	None	100%	CW-Like	-145	-71.3	3	63.95	27.55	3	3	206.59
20 MHz	None	20%	CW-Like	-145.8	-71.3	3	63.95	27.55	3	3	226.52
20 MHz	OOK	100%	CW-Like	-144.5	-71.3	3	63.95	27.55	3	3	195.03
20 MHz	OOK	20%	CW-Like	-146.3	-71.3	3	63.95	27.55	3	3	239.94
20 MHz	50% Abs.	100%	Noise-Like	-138	-71.3	3	63.95	27.55	3	3	92.28
20 MHz	50% Abs.	20%	Pulse-Like	-135	-71.3	3	63.95	27.55	3	3	65.33
20 MHz	2% Rel.	100%	Noise-Like	-136	-71.3	3	63.95	27.55	3	3	73.30
20 MHz	2% Rel.	20%	Pulse-Like	-133	-71.3	3	63.95	27.55	3	3	51.89

Note: a) UWB signals characterized as causing noise-like and pulse-like interference will have units of dBW/MHz. UWB signals characterized as causing CW-like interference will have units of dBW.

b) For UWB signals that have been characterized as causing CW-like interference, the current Part 15 level assumes there is only a single spectral line in the measurement bandwidth.

C/A Code Receiver Architecture (0 dBi Antenna Gain)

UWB PRF	UWB Modulation	UWB Gating Percentage	Interfering Signal Effect	UWB Interference Threshold (dBW/MHz or dBW)[a,b]	EIRP (Part 15 Limit) (dBW/MHz)	Gr (dBi)	20 Log F (dB)	Propagation Constant	Lman (dB)	Lallot (dB)	Required Distance Separation (m)
100 kHz	None	100%	Pulse-Like	-112.6	-71.3	0	63.95	27.55	3	3	3.51
100 kHz	None	20%	Pulse-Like	-106.5	-71.3	0	63.95	27.55	3	3	1.74
100 kHz	OOK	100%	Pulse-Like	-102.6	-71.3	0	63.95	27.55	3	3	1.11
100 kHz	OOK	20%	Pulse-Like	-109.4	-71.3	0	63.95	27.55	3	3	2.43
100 kHz	50% Abs.	100%	Pulse-Like	-100	-71.3	0	63.95	27.55	3	3	0.82
100 kHz	50% Abs.	20%	Pulse-Like	-107	-71.3	0	63.95	27.55	3	3	1.84
100 kHz	2% Rel.	100%	Pulse-Like	-100	-71.3	0	63.95	27.55	3	3	0.82
100 kHz	2% Rel.	20%	Pulse-Like	-107	-71.3	0	63.95	27.55	3	3	1.84
1 MHz	None	100%	CW-Like	-143.7	-71.3	0	63.95	27.55	3	3	125.92
1 MHz	None	20%	Pulse-Like	-97.6	-71.3	0	63.95	27.55	3	3	0.62
1 MHz	OOK	100%	Pulse-Like	-121.2	-71.3	0	63.95	27.55	3	3	9.44
1 MHz	OOK	20%	Pulse-Like	-101.1	-71.3	0	63.95	27.55	3	3	0.93
1 MHz	50% Abs.	100%	Pulse-Like	-113	-71.3	0	63.95	27.55	3	3	3.67
1 MHz	50% Abs.	20%	Pulse-Like	-97.5	-71.3	0	63.95	27.55	3	3	0.62
1 MHz	2% Rel.	100%	Pulse-Like	-131	-71.3	0	63.95	27.55	3	3	29.18
1 MHz	2% Rel.	20%	Pulse-Like	-97	-71.3	0	63.95	27.55	3	3	0.58
5 MHz	None	100%	CW-Like	-145.5	-71.3	0	63.95	27.55	3	3	154.92
5 MHz	None	20%	CW-Like	-145.2	-71.3	0	63.95	27.55	3	3	149.66
5 MHz	OOK	100%	CW-Like	-144.5	-71.3	0	63.95	27.55	3	3	138.07
5 MHz	OOK	20%	CW-Like	-144.2	-71.3	0	63.95	27.55	3	3	133.38
5 MHz	50% Abs.	100%	Noise-Like	-137	-71.3	0	63.95	27.55	3	3	58.22
5 MHz	50% Abs.	20%	Pulse-Like	-105	-71.3	0	63.95	27.55	3	3	1.46
5 MHz	2% Rel.	100%	Noise-Like	-136.5	-71.3	0	63.95	27.55	3	3	54.97
5 MHz	2% Rel.	20%	Pulse-Like	-89	-71.3	0	63.95	27.55	3	3	0.23
20 MHz	None	100%	CW-Like	-145	-71.3	0	63.95	27.55	3	3	146.25
20 MHz	None	20%	CW-Like	-145.8	-71.3	0	63.95	27.55	3	3	160.36
20 MHz	OOK	100%	CW-Like	-144.5	-71.3	0	63.95	27.55	3	3	138.07
20 MHz	OOK	20%	CW-Like	-146.3	-71.3	0	63.95	27.55	3	3	169.86
20 MHz	50% Abs.	100%	Noise-Like	-138	-71.3	0	63.95	27.55	3	3	65.33
20 MHz	50% Abs.	20%	Pulse-Like	-135	-71.3	0	63.95	27.55	3	3	46.25
20 MHz	2% Rel.	100%	Noise-Like	-136	-71.3	0	63.95	27.55	3	3	51.89
20 MHz	2% Rel.	20%	Pulse-Like	-133	-71.3	0	63.95	27.55	3	3	36.74

Note: a) UWB signals characterized as causing noise-like and pulse-like interference will have units of dBW/MHz. UWB signals characterized as causing CW-like interference will have units of dBW.

b) For UWB signals that have been characterized as causing CW-like interference, the current Part 15 level assumes there is only a single spectral line in the measurement bandwidth.

C/A Code Receiver Architecture (-4.5 dBi Antenna Gain)

UWB PRF	UWB Modulation	UWB Gating Percentage	Interfering Signal Effect	UWB Interference Threshold (dBW/MHz or dBW)[a,b]	EIRP(Part 15 Limit) (dBW/MHz)	Gr (dBi)	20 Log F (dB)	Propagation Constant	Lman (dB)	Lallot (dB)	Required Distance Separation (m)
100 kHz	None	100%	Pulse-Like	-112.6	-71.3	-4.5	63.95	27.55	3	3	2.09
100 kHz	None	20%	Pulse-Like	-106.5	-71.3	-4.5	63.95	27.55	3	3	1.04
100 kHz	OOK	100%	Pulse-Like	-102.6	-71.3	-4.5	63.95	27.55	3	3	0.66
100 kHz	OOK	20%	Pulse-Like	-109.4	-71.3	-4.5	63.95	27.55	3	3	1.45
100 kHz	50% Abs.	100%	Pulse-Like	-100	-71.3	-4.5	63.95	27.55	3	3	0.49
100 kHz	50% Abs.	20%	Pulse-Like	-107	-71.3	-4.5	63.95	27.55	3	3	1.10
100 kHz	2% Rel.	100%	Pulse-Like	-100	-71.3	-4.5	63.95	27.55	3	3	0.49
100 kHz	2% Rel.	20%	Pulse-Like	-107	-71.3	-4.5	63.95	27.55	3	3	1.10
1 MHz	None	100%	CW-Like	-143.7	-71.3	-4.5	63.95	27.55	3	3	75.01
1 MHz	None	20%	Pulse-Like	-97.6	-71.3	-4.5	63.95	27.55	3	3	0.37
1 MHz	OOK	100%	Pulse-Like	-121.2	-71.3	-4.5	63.95	27.55	3	3	5.62
1 MHz	OOK	20%	Pulse-Like	-101.1	-71.3	-4.5	63.95	27.55	3	3	0.56
1 MHz	50% Abs.	100%	Pulse-Like	-113	-71.3	-4.5	63.95	27.55	3	3	2.19
1 MHz	50% Abs.	20%	Pulse-Like	-97.5	-71.3	-4.5	63.95	27.55	3	3	0.37
1 MHz	2% Rel.	100%	Pulse-Like	-131	-71.3	-4.5	63.95	27.55	3	3	17.38
1 MHz	2% Rel.	20%	Pulse-Like	-97	-71.3	-4.5	63.95	27.55	3	3	0.35
5 MHz	None	100%	CW-Like	-145.5	-71.3	-4.5	63.95	27.55	3	3	92.28
5 MHz	None	20%	CW-Like	-145.2	-71.3	-4.5	63.95	27.55	3	3	89.15
5 MHz	OOK	100%	CW-Like	-144.5	-71.3	-4.5	63.95	27.55	3	3	82.24
5 MHz	OOK	20%	CW-Like	-144.2	-71.3	-4.5	63.95	27.55	3	3	79.45
5 MHz	50% Abs.	100%	Noise-Like	-137	-71.3	-4.5	63.95	27.55	3	3	34.68
5 MHz	50% Abs.	20%	Pulse-Like	-105	-71.3	-4.5	63.95	27.55	3	3	0.87
5 MHz	2% Rel.	100%	Noise-Like	-136.5	-71.3	-4.5	63.95	27.55	3	3	32.74
5 MHz	2% Rel.	20%	Pulse-Like	-89	-71.3	-4.5	63.95	27.55	3	3	0.14
20 MHz	None	100%	CW-Like	-145	-71.3	-4.5	63.95	27.55	3	3	87.12
20 MHz	None	20%	CW-Like	-145.8	-71.3	-4.5	63.95	27.55	3	3	95.52
20 MHz	OOK	100%	CW-Like	-144.5	-71.3	-4.5	63.95	27.55	3	3	82.24
20 MHz	OOK	20%	CW-Like	-146.3	-71.3	-4.5	63.95	27.55	3	3	101.18
20 MHz	50% Abs.	100%	Noise-Like	-138	-71.3	-4.5	63.95	27.55	3	3	38.91
20 MHz	50% Abs.	20%	Pulse-Like	-135	-71.3	-4.5	63.95	27.55	3	3	27.55
20 MHz	2% Rel.	100%	Noise-Like	-136	-71.3	-4.5	63.95	27.55	3	3	30.91
20 MHz	2% Rel.	20%	Pulse-Like	-133	-71.3	-4.5	63.95	27.55	3	3	21.88

Note: a) UWB signals characterized as causing noise-like and pulse-like interference will have units of dBW/MHz. UWB signals characterized as causing CW-like interference will have units of dBW.

b) For UWB signals that have been characterized as causing CW-like interference, the current Part 15 level assumes there is only a single spectral line in the measurement bandwidth.

Semi-Codeless Receiver Architecture (3 dBi Antenna Gain)

UWB PRF	UWB Modulation	UWB Gating Percentage	Interfering Signal Effect	UWB Interference Threshold (dBW/MHz)	EIRP(Part 15 Limit) (dBW/MHz)	Gr (dBi)	20 Log F (dB)	Propagation Constant	Lman (dB)	Lallot (dB)	Required Distance Separation (m)
100 kHz	None	100%	Pulse-Like	-118	-71.3	3	63.95	27.55	3	3	9.23
100 kHz	None	20%	Pulse-Like	-116.5	-71.3	3	63.95	27.55	3	3	7.76
100 kHz	OOK	100%	Pulse-Like	-112	-71.3	3	63.95	27.55	3	3	4.62
100 kHz	OOK	20%	Pulse-Like	-118.5	-71.3	3	63.95	27.55	3	3	9.77
100 kHz	50% Abs.	100%	Pulse-Like	-121	-71.3	3	63.95	27.55	3	3	13.03
100 kHz	50% Abs.	20%	Pulse-Like	-116	-71.3	3	63.95	27.55	3	3	7.33
100 kHz	2% Rel.	100%	Pulse-Like	-119	-71.3	3	63.95	27.55	3	3	10.35
100 kHz	2% Rel.	20%	Pulse-Like	-138	-71.3	3	63.95	27.55	3	3	92.28
1 MHz	50% Abs.	100%	Pulse-Like	-151	-71.3	3	63.95	27.55	3	3	412.20
1 MHz	50% Abs.	20%	Pulse-Like	-132	-71.3	3	63.95	27.55	3	3	46.25
1 MHz	2% Rel.	100%	Pulse-Like	-149	-71.3	3	63.95	27.55	3	3	327.42
1 MHz	2% Rel.	20%	Pulse-Like	-134	-71.3	3	63.95	27.55	3	3	58.22
5 MHz	50% Abs.	100%	Noise-Like	-151	-71.3	3	63.95	27.55	3	3	412.20
5 MHz	50% Abs.	20%	Pulse-Like	-151	-71.3	3	63.95	27.55	3	3	412.20
5 MHz	2% Rel.	100%	Noise-Like	-149	-71.3	3	63.95	27.55	3	3	327.42
5 MHz	2% Rel.	20%	Pulse-Like	-142.5	-71.3	3	63.95	27.55	3	3	154.92
20 MHz	None	100%	Noise-Like	-145	-71.3	3	63.95	27.55	3	3	206.59
20 MHz	None	20%	Noise-Like	-148	-71.3	3	63.95	27.55	3	3	291.81
20 MHz	OOK	100%	Noise-Like	-137	-71.3	3	63.95	27.55	3	3	82.24
20 MHz	OOK	20%	Noise-Like	-146	-71.3	3	63.95	27.55	3	3	231.79
20 MHz	50% Abs.	100%	Noise-Like	-149.5	-71.3	3	63.95	27.55	3	3	346.82
20 MHz	50% Abs.	20%	Pulse-Like	-148	-71.3	3	63.95	27.55	3	3	291.81
20 MHz	2% Rel.	100%	Noise-Like	-149.5	-71.3	3	63.95	27.55	3	3	346.82
20 MHz	2% Rel.	20%	Pulse-Like	-143.5	-71.3	3	63.95	27.55	3	3	173.82

Semi-Codeless Receiver Architecture (0 dBi Antenna Gain)

UWB PRF	UWB Modulation	UWB Gating Percentage	Interfering Signal Effect	UWB Interference Threshold (dBW/MHz)	EIRP(Part 15 Limit) (dBW/MHz)	Gr (dBi)	20 Log F (dB)	Propagation Constant	Lman (dB)	Lallot (dB)	Required Distance Separation (m)
100 kHz	None	100%	Pulse-Like	-118	-71.3	0	63.95	27.55	3	3	6.53
100 kHz	None	20%	Pulse-Like	-116.5	-71.3	0	63.95	27.55	3	3	5.50
100 kHz	OOK	100%	Pulse-Like	-112	-71.3	0	63.95	27.55	3	3	3.27
100 kHz	OOK	20%	Pulse-Like	-118.5	-71.3	0	63.95	27.55	3	3	6.92
100 kHz	50% Abs.	100%	Pulse-Like	-121	-71.3	0	63.95	27.55	3	3	9.23
100 kHz	50% Abs.	20%	Pulse-Like	-116	-71.3	0	63.95	27.55	3	3	5.19
100 kHz	2% Rel.	100%	Pulse-Like	-119	-71.3	0	63.95	27.55	3	3	7.33
100 kHz	2% Rel.	20%	Pulse-Like	-138	-71.3	0	63.95	27.55	3	3	65.33
1 MHz	50% Abs.	100%	Pulse-Like	-151	-71.3	0	63.95	27.55	3	3	291.81
1 MHz	50% Abs.	20%	Pulse-Like	-132	-71.3	0	63.95	27.55	3	3	32.74
1 MHz	2% Rel.	100%	Pulse-Like	-149	-71.3	0	63.95	27.55	3	3	231.79
1 MHz	2% Rel.	20%	Pulse-Like	-134	-71.3	0	63.95	27.55	3	3	41.22
5 MHz	50% Abs.	100%	Noise-Like	-151	-71.3	0	63.95	27.55	3	3	291.81
5 MHz	50% Abs.	20%	Pulse-Like	-151	-71.3	0	63.95	27.55	3	3	291.81
5 MHz	2% Rel.	100%	Noise-Like	-149	-71.3	0	63.95	27.55	3	3	231.79
5 MHz	2% Rel.	20%	Pulse-Like	-142.5	-71.3	0	63.95	27.55	3	3	109.67
20 MHz	None	100%	Noise-Like	-145	-71.3	0	63.95	27.55	3	3	146.25
20 MHz	None	20%	Noise-Like	-148	-71.3	0	63.95	27.55	3	3	206.59
20 MHz	OOK	100%	Noise-Like	-137	-71.3	0	63.95	27.55	3	3	58.22
20 MHz	OOK	20%	Noise-Like	-146	-71.3	0	63.95	27.55	3	3	164.10
20 MHz	50% Abs.	100%	Noise-Like	-149.5	-71.3	0	63.95	27.55	3	3	245.53
20 MHz	50% Abs.	20%	Pulse-Like	-148	-71.3	0	63.95	27.55	3	3	206.59
20 MHz	2% Rel.	100%	Noise-Like	-149.5	-71.3	0	63.95	27.55	3	3	245.53
20 MHz	2% Rel.	20%	Pulse-Like	-143.5	-71.3	0	63.95	27.55	3	3	123.06

Semi-Codeless Receiver Architecture (-4.5 dBic Antenna Gain)

UWB PRF	UWB Modulation	UWB Gating Percentage	Interfering Signal Effect	UWB Interference Threshold (dBW/MHz)	EIRP(Part 15 Limit) (dBW/MHz)	Gr (dBi)	20 Log F (dB)	Propagation Constant	Lman (dB)	Lallot (dB)	Required Distance Separation (m)
100 kHz	None	100%	Pulse-Like	-118	-71.3	-4.5	63.95	27.55	3	3	3.89
100 kHz	None	20%	Pulse-Like	-116.5	-71.3	-4.5	63.95	27.55	3	3	3.27
100 kHz	OOK	100%	Pulse-Like	-112	-71.3	-4.5	63.95	27.55	3	3	1.95
100 kHz	OOK	20%	Pulse-Like	-118.5	-71.3	-4.5	63.95	27.55	3	3	4.12
100 kHz	50% Abs.	100%	Pulse-Like	-121	-71.3	-4.5	63.95	27.55	3	3	5.50
100 kHz	50% Abs.	20%	Pulse-Like	-116	-71.3	-4.5	63.95	27.55	3	3	3.09
100 kHz	2% Rel.	100%	Pulse-Like	-119	-71.3	-4.5	63.95	27.55	3	3	4.37
100 kHz	2% Rel.	20%	Pulse-Like	-138	-71.3	-4.5	63.95	27.55	3	3	38.91
1 MHz	50% Abs.	100%	Pulse-Like	-151	-71.3	-4.5	63.95	27.55	3	3	173.82
1 MHz	50% Abs.	20%	Pulse-Like	-132	-71.3	-4.5	63.95	27.55	3	3	19.50
1 MHz	2% Rel.	100%	Pulse-Like	-149	-71.3	-4.5	63.95	27.55	3	3	138.07
1 MHz	2% Rel.	20%	Pulse-Like	-134	-71.3	-4.5	63.95	27.55	3	3	24.55
5 MHz	50% Abs.	100%	Noise-Like	-151	-71.3	-4.5	63.95	27.55	3	3	173.82
5 MHz	50% Abs.	20%	Pulse-Like	-151	-71.3	-4.5	63.95	27.55	3	3	173.82
5 MHz	2% Rel.	100%	Noise-Like	-149	-71.3	-4.5	63.95	27.55	3	3	138.07
5 MHz	2% Rel.	20%	Pulse-Like	-142.5	-71.3	-4.5	63.95	27.55	3	3	65.33
20 MHz	None	100%	Noise-Like	-145	-71.3	-4.5	63.95	27.55	3	3	87.12
20 MHz	None	20%	Noise-Like	-148	-71.3	-4.5	63.95	27.55	3	3	123.06
20 MHz	OOK	100%	Noise-Like	-137	-71.3	-4.5	63.95	27.55	3	3	34.68
20 MHz	OOK	20%	Noise-Like	-146	-71.3	-4.5	63.95	27.55	3	3	97.75
20 MHz	50% Abs.	100%	Noise-Like	-149.5	-71.3	-4.5	63.95	27.55	3	3	146.25
20 MHz	50% Abs.	20%	Pulse-Like	-148	-71.3	-4.5	63.95	27.55	3	3	123.06
20 MHz	2% Rel.	100%	Noise-Like	-149.5	-71.3	-4.5	63.95	27.55	3	3	146.25
20 MHz	2% Rel.	20%	Pulse-Like	-143.5	-71.3	-4.5	63.95	27.55	3	3	73.30

Narrowly Spaced Correlator Receiver Architecture (3 dBi Antenna gain)

UWB PRF	UWB Modulation	UWB Gating Percentage	Category of Interfering Signal	UWB Interference Threshold (dBW/MHz or dBW)[a,b]	EIRP(Part 15 Limit) (dBW/MHz)	Gr (dBi)	20 Log F (dB)	Propagation Constant	Lman (dB)	Lallot (dB)	Required Distance Separation (m)
100 kHz	None	100%	Pulse-Like	-100.2	-71.3	3	63.95	27.55	3	3	1.19
100 kHz	None	20%	Pulse-Like	-107.1	-71.3	3	63.95	27.55	3	3	2.63
100 kHz	OOK	100%	Pulse-Like	-103.2	-71.3	3	63.95	27.55	3	3	1.68
100 kHz	OOK	20%	Pulse-Like	-110.2	-71.3	3	63.95	27.55	3	3	3.76
100 kHz	50% Abs.	100%	Pulse-Like	-100.1	-71.3	3	63.95	27.55	3	3	1.18
100 kHz	50% Abs.	20%	Pulse-Like	-107.1	-71.3	3	63.95	27.55	3	3	2.63
100 kHz	2% Rel.	100%	Pulse-Like	-100.1	-71.3	3	63.95	27.55	3	3	1.18
100 kHz	2% Rel.	20%	Pulse-Like	-107.1	-71.3	3	63.95	27.55	3	3	2.63
1 MHz	None	100%	CW-Like	-144.1	-71.3	3	63.95	27.55	3	3	186.25
1 MHz	None	20%	Pulse-Like	-94.8	-71.3	3	63.95	27.55	3	3	0.64
1 MHz	OOK	100%	CW-Like	-139.9	-71.3	3	63.95	27.55	3	3	114.84
1 MHz	OOK	20%	Pulse-Like	-97.8	-71.3	3	63.95	27.55	3	3	0.90
1 MHz	50% Abs.	100%	Pulse-Like	-105.9	-71.3	3	63.95	27.55	3	3	2.29
1 MHz	50% Abs.	20%	Pulse-Like	-94.8	-71.3	3	63.95	27.55	3	3	0.64
1 MHz	2% Rel.	100%	Pulse-Like	-87.8	-71.3	3	63.95	27.55	3	3	0.29
1 MHz	2% Rel.	20%	Pulse-Like	-94.7	-71.3	3	63.95	27.55	3	3	0.63
5 MHz	None	100%	CW-Like	-145.7	-71.3	3	63.95	27.55	3	3	223.93
5 MHz	None	20%	CW-Like	-146.6	-71.3	3	63.95	27.55	3	3	248.37
5 MHz	OOK	100%	CW-Like	-146.7	-71.3	3	63.95	27.55	3	3	251.25
5 MHz	OOK	20%	CW-Like	-142.6	-71.3	3	63.95	27.55	3	3	156.71
5 MHz	50% Abs.	100%	Noise-Like	-127.7	-71.3	3	63.95	27.55	3	3	28.19
5 MHz	50% Abs.	20%	Pulse-Like	-88.5	-71.3	3	63.95	27.55	3	3	0.31
5 MHz	2% Rel.	100%	Noise-Like	-127.6	-71.3	3	63.95	27.55	3	3	27.87
5 MHz	2% Rel.	20%	Pulse-Like	-88.5	-71.3	3	63.95	27.55	3	3	0.31
20 MHz	None	100%	CW-Like	-146.1	-71.3	3	63.95	27.55	3	3	234.48
20 MHz	None	20%	CW-Like	-146.9	-71.3	3	63.95	27.55	3	3	257.10
20 MHz	OOK	100%	CW-Like	-146.5	-71.3	3	63.95	27.55	3	3	245.53
20 MHz	OOK	20%	CW-Like	-145.4	-71.3	3	63.95	27.55	3	3	216.32
20 MHz	50% Abs.	100%	Noise-Like	-133.6	-71.3	3	63.95	27.55	3	3	55.60
20 MHz	50% Abs.	20%	Pulse-Like	-100.5	-71.3	3	63.95	27.55	3	3	1.23
20 MHz	2% Rel.	100%	Noise-Like	-135.5	-71.3	3	63.95	27.55	3	3	69.20
20 MHz	2% Rel.	20%	Pulse-Like	-122.2	-71.3	3	63.95	27.55	3	3	14.97

Note: a) UWB signals characterized as causing noise-like and pulse-like interference will have units of dBW/MHz. UWB signals characterized as causing CW-like interference will have units of dBW.

b) For UWB signals that have been characterized as causing CW-like interference, the current Part 15 level assumes there is only a single spectral line in the measurement bandwidth.

Narrowly Spaced Correlator Receiver Architecture (0 dBi Antenna Gain)

UWB PRF	UWB Modulation	UWB Gating Percentage	Interfering Signal Effect	UWB Interference Threshold (dBW/MHz or dBW)[a,b]	EIRP(Part 15 Limit) (dBW/MHz)	Gr (dBi)	20 Log F (dB)	Propagation Constant	Lman (dB)	Lallot (dB)	Required Distance Separation (m)
100 kHz	None	100%	Pulse-Like	-100.2	-71.3	0	63.95	27.55	3	3	0.84
100 kHz	None	20%	Pulse-Like	-107.1	-71.3	0	63.95	27.55	3	3	1.86
100 kHz	OOK	100%	Pulse-Like	-103.2	-71.3	0	63.95	27.55	3	3	1.19
100 kHz	OOK	20%	Pulse-Like	-110.2	-71.3	0	63.95	27.55	3	3	2.66
100 kHz	50% Abs.	100%	Pulse-Like	-100.1	-71.3	0	63.95	27.55	3	3	0.83
100 kHz	50% Abs.	20%	Pulse-Like	-107.1	-71.3	0	63.95	27.55	3	3	1.86
100 kHz	2% Rel.	100%	Pulse-Like	-100.1	-71.3	0	63.95	27.55	3	3	0.83
100 kHz	2% Rel.	20%	Pulse-Like	-107.1	-71.3	0	63.95	27.55	3	3	1.86
1 MHz	None	100%	CW-Like	-144.1	-71.3	0	63.95	27.55	3	3	131.86
1 MHz	None	20%	Pulse-Like	-94.8	-71.3	0	63.95	27.55	3	3	0.45
1 MHz	OOK	100%	CW-Like	-139.9	-71.3	0	63.95	27.55	3	3	81.30
1 MHz	OOK	20%	Pulse-Like	-97.8	-71.3	0	63.95	27.55	3	3	0.64
1 MHz	50% Abs.	100%	Pulse-Like	-105.9	-71.3	0	63.95	27.55	3	3	1.62
1 MHz	50% Abs.	20%	Pulse-Like	-94.8	-71.3	0	63.95	27.55	3	3	0.45
1 MHz	2% Rel.	100%	Pulse-Like	-87.8	-71.3	0	63.95	27.55	3	3	0.20
1 MHz	2% Rel.	20%	Pulse-Like	-94.7	-71.3	0	63.95	27.55	3	3	0.45
5 MHz	None	100%	CW-Like	-145.7	-71.3	0	63.95	27.55	3	3	158.53
5 MHz	None	20%	CW-Like	-146.6	-71.3	0	63.95	27.55	3	3	175.83
5 MHz	OOK	100%	CW-Like	-146.7	-71.3	0	63.95	27.55	3	3	177.87
5 MHz	OOK	20%	CW-Like	-142.6	-71.3	0	63.95	27.55	3	3	110.94
5 MHz	50% Abs.	100%	Noise-Like	-127.7	-71.3	0	63.95	27.55	3	3	19.96
5 MHz	50% Abs.	20%	Pulse-Like	-88.5	-71.3	0	63.95	27.55	3	3	0.22
5 MHz	2% Rel.	100%	Noise-Like	-127.6	-71.3	0	63.95	27.55	3	3	19.73
5 MHz	2% Rel.	20%	Pulse-Like	-88.5	-71.3	0	63.95	27.55	3	3	0.22
20 MHz	None	100%	CW-Like	-146.1	-71.3	0	63.95	27.55	3	3	166.00
20 MHz	None	20%	CW-Like	-146.9	-71.3	0	63.95	27.55	3	3	182.01
20 MHz	OOK	100%	CW-Like	-146.5	-71.3	0	63.95	27.55	3	3	173.82
20 MHz	OOK	20%	CW-Like	-145.4	-71.3	0	63.95	27.55	3	3	153.15
20 MHz	50% Abs.	100%	Noise-Like	-133.6	-71.3	0	63.95	27.55	3	3	39.36
20 MHz	50% Abs.	20%	Pulse-Like	-100.5	-71.3	0	63.95	27.55	3	3	0.87
20 MHz	2% Rel.	100%	Noise-Like	-135.5	-71.3	0	63.95	27.55	3	3	48.99
20 MHz	2% Rel.	20%	Pulse-Like	-122.2	-71.3	0	63.95	27.55	3	3	10.60

Note: a) UWB signals characterized as causing noise-like and pulse-like interference will have units of dBW/MHz. UWB signals characterized as causing CW-like interference will have units of dBW.

b) For UWB signals that have been characterized as causing CW-like interference, the current Part 15 level assumes there is only a single spectral line in the measurement bandwidth.

Narrowly Spaced Correlator Receiver Architecture (-4.5 dBi Antenna Gain)

UWB PRF	UWB Modulation	UWB Gating Percentage	Interfering Signal Effect	UWB Interference Threshold (dBW/MHz or dBW)[a,b]	EIRP(Part 15 Limit) (dBW/MHz)	Gr (dBi)	20 Log F (dB)	Propagation Constant	Lman (dB)	Lallot (dB)	Required Distance Separation (m)
100 kHz	None	100%	Pulse-Like	-100.2	-71.3	-4.5	63.95	27.55	3	3	0.50
100 kHz	None	20%	Pulse-Like	-107.1	-71.3	-4.5	63.95	27.55	3	3	1.11
100 kHz	OOK	100%	Pulse-Like	-103.2	-71.3	-4.5	63.95	27.55	3	3	0.71
100 kHz	OOK	20%	Pulse-Like	-110.2	-71.3	-4.5	63.95	27.55	3	3	1.59
100 kHz	50% Abs.	100%	Pulse-Like	-100.1	-71.3	-4.5	63.95	27.55	3	3	0.50
100 kHz	50% Abs.	20%	Pulse-Like	-107.1	-71.3	-4.5	63.95	27.55	3	3	1.11
100 kHz	2% Rel.	100%	Pulse-Like	-100.1	-71.3	-4.5	63.95	27.55	3	3	0.50
100 kHz	2% Rel.	20%	Pulse-Like	-107.1	-71.3	-4.5	63.95	27.55	3	3	1.11
1 MHz	None	100%	CW-Like	-144.1	-71.3	-4.5	63.95	27.55	3	3	78.54
1 MHz	None	20%	Pulse-Like	-94.8	-71.3	-4.5	63.95	27.55	3	3	0.27
1 MHz	OOK	100%	CW-Like	-139.9	-71.3	-4.5	63.95	27.55	3	3	48.43
1 MHz	OOK	20%	Pulse-Like	-97.8	-71.3	-4.5	63.95	27.55	3	3	0.38
1 MHz	50% Abs.	100%	Pulse-Like	-105.9	-71.3	-4.5	63.95	27.55	3	3	0.97
1 MHz	50% Abs.	20%	Pulse-Like	-94.8	-71.3	-4.5	63.95	27.55	3	3	0.27
1 MHz	2% Rel.	100%	Pulse-Like	-87.8	-71.3	-4.5	63.95	27.55	3	3	0.12
1 MHz	2% Rel.	20%	Pulse-Like	-94.7	-71.3	-4.5	63.95	27.55	3	3	0.27
5 MHz	None	100%	CW-Like	-145.7	-71.3	-4.5	63.95	27.55	3	3	94.43
5 MHz	None	20%	CW-Like	-146.6	-71.3	-4.5	63.95	27.55	3	3	104.74
5 MHz	OOK	100%	CW-Like	-146.7	-71.3	-4.5	63.95	27.55	3	3	105.95
5 MHz	OOK	20%	CW-Like	-142.6	-71.3	-4.5	63.95	27.55	3	3	66.09
5 MHz	50% Abs.	100%	Noise-Like	-127.7	-71.3	-4.5	63.95	27.55	3	3	11.89
5 MHz	50% Abs.	20%	Pulse-Like	-88.5	-71.3	-4.5	63.95	27.55	3	3	0.13
5 MHz	2% Rel.	100%	Noise-Like	-127.6	-71.3	-4.5	63.95	27.55	3	3	11.75
5 MHz	2% Rel.	20%	Pulse-Like	-88.5	-71.3	-4.5	63.95	27.55	3	3	0.13
20 MHz	None	100%	CW-Like	-146.1	-71.3	-4.5	63.95	27.55	3	3	98.88
20 MHz	None	20%	CW-Like	-146.9	-71.3	-4.5	63.95	27.55	3	3	108.42
20 MHz	OOK	100%	CW-Like	-146.5	-71.3	-4.5	63.95	27.55	3	3	103.54
20 MHz	OOK	20%	CW-Like	-145.4	-71.3	-4.5	63.95	27.55	3	3	91.22
20 MHz	50% Abs.	100%	Noise-Like	-133.6	-71.3	-4.5	63.95	27.55	3	3	23.45
20 MHz	50% Abs.	20%	Pulse-Like	-100.5	-71.3	-4.5	63.95	27.55	3	3	0.52
20 MHz	2% Rel.	100%	Noise-Like	-135.5	-71.3	-4.5	63.95	27.55	3	3	29.18
20 MHz	2% Rel.	20%	Pulse-Like	-122.2	-71.3	-4.5	63.95	27.55	3	3	6.31

Note: a) UWB signals characterized as causing noise-like and pulse-like interference will have units of dBW/MHz. UWB signals characterized as causing CW-like interference will have units of dBW.

b) For UWB signals that have been characterized as causing CW-like interference, the current Part 15 level assumes there is only a single spectral line in the measurement bandwidth.

TSO-C129a Compliant C/A Code Receiver Architecture (-10 dBi Antenna Gain)

UWB PRF	UWB Modulation	UWB Gating Percentage	Interfering Signal Effect	UWB Interference Threshold (dBW/MHz or dBW)[a,b]	EIRP(Part 15 Limit) (dBW/MHz)	Gr (dBi)	20 Log F (dB)	Propagation Constant	Lman (dB)	Lallot (dB)	Lsafety (dB)	Required Distance Separation (m)
100 kHz	None	100%	Pulse-Like	-117.9	-71.3	-10	63.95	27.55	3	10	6	9.12
100 kHz	None	20%	Pulse-Like	-106.8	-71.3	-10	63.95	27.55	3	10	6	2.54
100 kHz	OOK	100%	Pulse-Like	-103.1	-71.3	-10	63.95	27.55	3	10	6	1.66
100 kHz	OOK	20%	Pulse-Like	-109.9	-71.3	-10	63.95	27.55	3	10	6	3.63
100 kHz	50% Abs.	100%	Pulse-Like	-115	-71.3	-10	63.95	27.55	3	10	6	6.53
100 kHz	50% Abs.	20%	Pulse-Like	-106.8	-71.3	-10	63.95	27.55	3	10	6	2.54
100 kHz	2% Rel.	100%	Pulse-Like	-97.9	-71.3	-10	63.95	27.55	3	10	6	0.91
100 kHz	2% Rel.	20%	Pulse-Like	-106.9	-71.3	-10	63.95	27.55	3	10	6	2.57
1 MHz	None	100%	CW-Like	-140.8	-71.3	-10	63.95	27.55	3	10	6	127.38
1 MHz	None	20%	CW-Like	-146.7	-71.3	-10	63.95	27.55	3	10	6	251.25
1 MHz	OOK	100%	CW-Like	-140.8	-71.3	-10	63.95	27.55	3	10	6	127.38
1 MHz	OOK	20%	CW-Like	-140.7	-71.3	-10	63.95	27.55	3	10	6	125.92
1 MHz	50% Abs.	100%	Noise-Like	-142	-71.3	-10	63.95	27.55	3	10	6	146.25
1 MHz	50% Abs.	20%	Noise-Like	-139.5	-71.3	-10	63.95	27.55	3	10	6	109.67
1 MHz	2% Rel.	100%	Noise-Like	-141.5	-71.3	-10	63.95	27.55	3	10	6	138.07
1 MHz	2% Rel.	20%	Noise-Like	-133.5	-71.3	-10	63.95	27.55	3	10	6	54.97
5 MHz	None	100%	CW-Like	-138.4	-71.3	-10	63.95	27.55	3	10	6	96.63
5 MHz	None	20%	CW-Like	-143.2	-71.3	-10	63.95	27.55	3	10	6	167.92
5 MHz	OOK	100%	CW-Like	-139.4	-71.3	-10	63.95	27.55	3	10	6	108.42
5 MHz	OOK	20%	CW-Like	-143.3	-71.3	-10	63.95	27.55	3	10	6	169.86
5 MHz	50% Abs.	100%	Noise-Like	-142	-71.3	-10	63.95	27.55	3	10	6	146.25
5 MHz	50% Abs.	20%	Noise-Like	-141.9	-71.3	-10	63.95	27.55	3	10	6	144.58
5 MHz	2% Rel.	100%	Noise-Like	-143	-71.3	-10	63.95	27.55	3	10	6	164.10
5 MHz	2% Rel.	20%	Noise-Like	-142.4	-71.3	-10	63.95	27.55	3	10	6	153.15
20 MHz	None	100%	CW-Like	-139.8	-71.3	-10	63.95	27.55	3	10	6	113.53
20 MHz	None	20%	CW-Like	-147.8	-71.3	-10	63.95	27.55	3	10	6	285.17
20 MHz	OOK	100%	CW-Like	-138.2	-71.3	-10	63.95	27.55	3	10	6	94.43
20 MHz	OOK	20%	CW-Like	-142.1	-71.3	-10	63.95	27.55	3	10	6	147.95
20 MHz	50% Abs.	100%	Noise-Like	-141	-71.3	-10	63.95	27.55	3	10	6	130.35
20 MHz	50% Abs.	20%	Noise-Like	-140.4	-71.3	-10	63.95	27.55	3	10	6	121.65
20 MHz	2% Rel.	100%	Noise-Like	-141	-71.3	-10	63.95	27.55	3	10	6	130.35
20 MHz	2% Rel.	20%	Noise-Like	-139.9	-71.3	-10	63.95	27.55	3	10	6	114.84

Note: a) UWB signals characterized as causing noise-like and pulse-like interference will have units of dBW/MHz. UWB signals characterized as causing CW-like interference will have units of dBW.

b) For UWB signals that have been characterized as causing CW-like interference, the current Part 15 level assumes there is only a single spectral line in the measurement bandwidth.

Aggergate C/A Code Receiver Architecture (3 dBi Antenna Gain)

Measurement Case	Interfering Signal Effect	UWB Interference Threshold (dBW/MHz or dBW)[a,b]	EIRP(Part 15 Limit) (dBW/MHz)	Gr (dBi)	20 Log F (dB)	Propagation Constant	Number of UWB Devices	Lman (dB)	Lallot (dB)	Required Distance Separation (m)
I	Noise-Like	-137.5	-71.3	3	63.95	27.55	6	3	3	213.39
II	Noise-Like	-136	-71.3	3	63.95	27.55	6	3	3	179.55
III	CW-Like	-149.6	-71.3	3	63.95	27.55	1	3	3	350.84
IV	CW-Like	-143.5	-71.3	3	63.95	27.55	1	3	3	173.82
V (One UWB Signal Generator)	Pulse-Like	-131	-71.3	3	63.95	27.55	1	3	3	41.22
V (Two UWB Signal Generators)	Pulse-Like	-136	-71.3	3	63.95	27.55	2	3	3	103.66
V (Three UWB Signal Generators)	Noise-Like	-136	-71.3	3	63.95	27.55	3	3	3	126.96
V (Four UWB Signal Generators)	Noise-Like	-136	-71.3	3	63.95	27.55	4	3	3	146.60
V (Five UWB Signal Generators)	Noise-Like	-137	-71.3	3	63.95	27.55	5	3	3	183.90
V (Six UWB Signal Generators)	Noise-Like	-136	-71.3	3	63.95	27.55	6	3	3	179.55

Note: a) UWB signals characterized as causing noise-like and pulse-like interference will have units of dBW/MHz. UWB signals characterized as causing CW-like interference will have units of dBW.

b) For UWB signals that have been characterized as causing CW-like interference, the current Part 15 level assumes there is only a single spectral line in the measurement bandwidth.

Aggregate C/A Code Receiver Architecture (0 dBi Antenna Gain)

Measurement Case	Category of Interfering Signal	UWB Interference Threshold (dBW/MHz or dBW)	EIRP(Part 15 Limit) (dBW/MHz)	Gr (dBi)	20 Log F (dB)	Propagation Constant	Number of UWB Devices	Lman (dB)	Lallot (dB)	Required Distance Separation (m)
I	Noise-Like	-137.5	-71.3	0	63.95	27.55	6	3	3	151.07
II	Noise-Like	-136	-71.3	0	63.95	27.55	6	3	3	127.11
III	CW-Like	-149.6	-71.3	0	63.95	27.55	1	3	3	248.37
IV	CW-Like	-143.5	-71.3	0	63.95	27.55	1	3	3	123.06
V (One UWB Signal Generator)	Pulse-Like	-131	-71.3	0	63.95	27.55	1	3	3	29.18
V (Two UWB Signal Generators)	Pulse-Like	-136	-71.3	0	63.95	27.55	2	3	3	73.39
V (Three UWB Signal Generators)	Noise-Like	-136	-71.3	0	63.95	27.55	3	3	3	89.88
V (Four UWB Signal Generators)	Noise-Like	-136	-71.3	0	63.95	27.55	4	3	3	103.78
V (Five UWB Signal Generators)	Noise-Like	-137	-71.3	0	63.95	27.55	5	3	3	130.19
V (Six UWB Signal Generators)	Noise-Like	-136	-71.3	0	63.95	27.55	6	3	3	127.11

Note: a) UWB signals characterized as causing noise-like and pulse-like interference will have units of dBW/MHz. UWB signals characterized as causing CW-like interference will have units of dBW.

b) For UWB signals that have been characterized as causing CW-like interference, the current Part 15 level assumes there is only a single spectral line in the measurement bandwidth.

Aggergate C/A Code Receiver Architecture (-4.5 dBi Antenna Gain)

Measurement Case	Category of Interfering Signal	UWB Interference Threshold (dBW/MHz or dBW)[a,b]	EIRP(Part 15 Limit) (dBW/MHz)	Gr (dBi)	20 Log F (dB)	Propagation Constant	Number of UWB Devices	Lman (dB)	Lallot (dB)	Required Distance Separation (m)
I	Noise-Like	-137.5	-71.3	-4.5	63.95	27.55	6	3	3	89.99
II	Noise-Like	-136	-71.3	-4.5	63.95	27.55	6	3	3	75.71
III	CW-Like	-149.6	-71.3	-4.5	63.95	27.55	1	3	3	147.95
IV	CW-Like	-143.5	-71.3	-4.5	63.95	27.55	1	3	3	73.30
V (One UWB Signal Generator)	Pulse-Like	-131	-71.3	-4.5	63.95	27.55	1	3	3	17.38
V (Two UWB Signal Generators)	Pulse-Like	-136	-71.3	-4.5	63.95	27.55	2	3	3	43.71
V (Three UWB Signal Generators)	Noise-Like	-136	-71.3	-4.5	63.95	27.55	3	3	3	53.54
V (Four UWB Signal Generators)	Noise-Like	-136	-71.3	-4.5	63.95	27.55	4	3	3	61.82
V (Five UWB Signal Generators)	Noise-Like	-137	-71.3	-4.5	63.95	27.55	5	3	3	77.55
V (Six UWB Signal Generators)	Noise-Like	-136	-71.3	-4.5	63.95	27.55	6	3	3	75.71

Note: a) UWB signals characterized as causing noise-like and pulse-like interference will have units of dBW/MHz. UWB signals characterized as causing CW-like interference will have units of dBW.

b) For UWB signals that have been characterized as causing CW-like interference, the current Part 15 level assumes there is only a single spectral line in the measurement bandwidth.