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

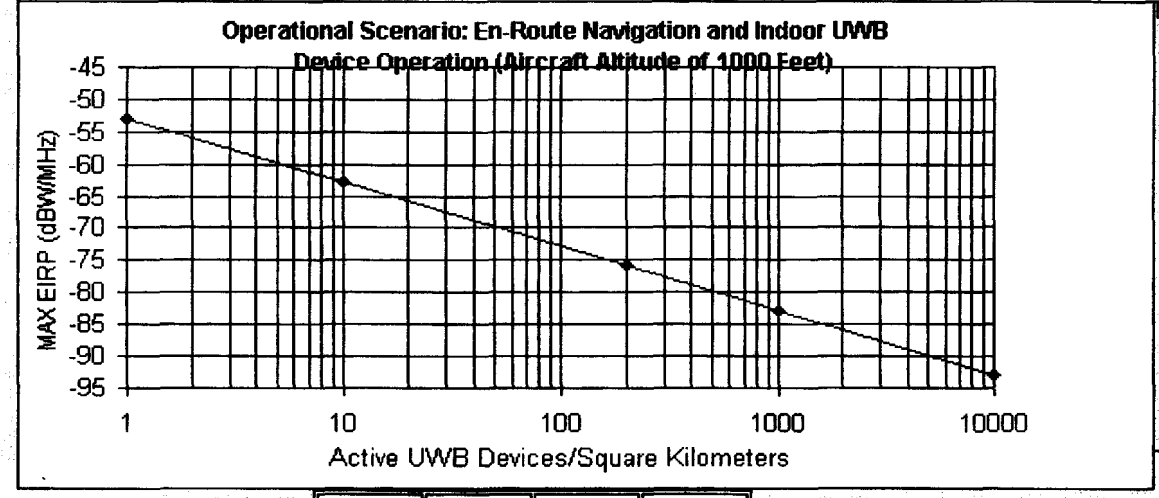
Path Loss: Free Space; Continental Tempera; Okumura; Tirem & ITM; Flat; Average Groun; 10%,50%,5

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); Tother(dBm/MHz); Ring Spacing: 10 meter; Iagg+Isingle; -2.0228; -68.952; 0; 3; -103.98; dB; 0.15; I other; Make trace file?

Criteria(dB) MxSnglEirp @R(km) tranht(m) N(dBm/MHz) B_{rf}(MHz)

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: Const; OMNI; V; H

bw(deg)	Gain(dBi)	
515.74	-10	
180	-0.8569	

Beamwidth horizontal(deg; vertical(deg; backlobe; elev(deg); backlobe

General: Calculate; Mode: EIRP[I/N]; Parameterize: Altitude; Iagg+Isingle

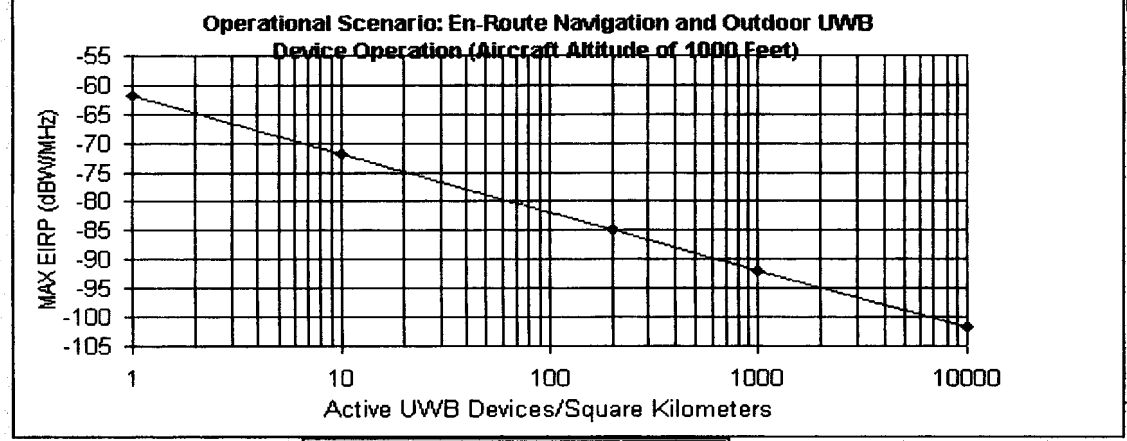
Criteria(dB)	MixSnglEirp	@R(km)	h(km)	tranht(m)	NF(dB)	N(dBm/MHz)	System Losses	dB	Smin(dBm)	Bir(MHz)	Iother(dBm/MHz)
-2.0228	-77.952	0		3	10	-103.98	-17			0.15	

I other

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	-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.