

MNO SAMPLE DATA SHEET

PROTECTED
関係者外秘

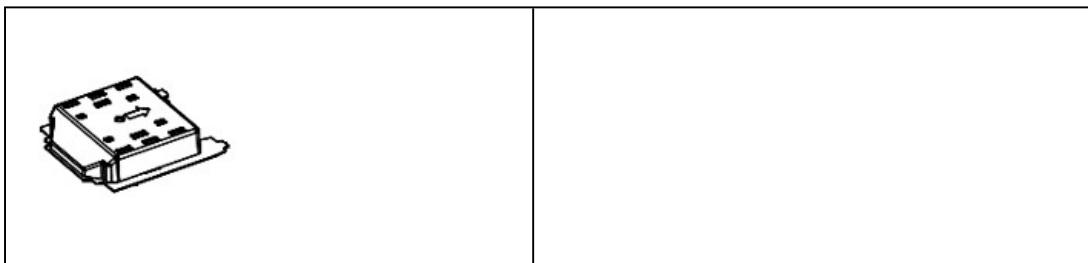
トヨタ自動車株式会社
コネクティッドカンパニー
コネクティッド基盤開発部
第12 電子開発室 2G

Toyota Motor Corporation
Connected Company
Connected System Development Div.,
Electronics Development Dept. No.12 2G,
2023.03.29

Remarks;

This datasheet is released dedicated for North America MNO certification process for 24DCM.
Please refer antenna setup guide regarding recommended setup method.
The attached cable is designed as maximum cable loss which considers installation in vehicle.

Antenna



Cable loss value

Frequency (MHz)	Cable loss (dB)
663	1.0
700	1.1
748	1.1
798	1.2
849	1.2
880	1.1
915	1.2
1710	1.6
1785	1.6
1910	1.7
2025	1.7
2300	2.1
2400	2.1
2496	2.0
2595	2.0
2690	2.1
3300	2.6
3675	2.7
3975	3.0
4200	3.2
4400	3.3
4700	3.5
5000	3.6

※The antenna cable length is 2.0m.

Max gain for each frequency

Frequency (MHz)	Max Gain(dBi)			
	$\theta = 45^\circ$	$\theta = 60^\circ$	$\theta = 75^\circ$	$\theta = 90^\circ$
663	-12.4	-12.4	-12.4	-11.6
700	-1.5	-1.8	-1.4	-1.0
748	-2.2	-1.7	-2.0	-1.7
798	-2.7	-1.5	-1.3	-1.6
849	-0.9	-0.7	-0.1	0.0
880	-0.1	-0.1	-0.3	0.3
915	-0.4	0.1	0.3	0.9
1710	2.1	2.5	2.2	3.2
1785	1.5	1.4	0.8	1.8
1910	0.7	0.4	-0.2	0.2
2025	2.8	2.3	2.0	3.2
2300	4.6	3.5	1.4	2.1
2400	4.6	3.1	0.6	1.3
2496	4.2	3.6	2.2	0.6
2595	5.1	4.3	1.8	1.2
2690	3.3	2.6	0.2	-0.9
3300	4.8	4.0	2.4	1.5
3675	5.7	5.0	3.9	3.3
3975	3.6	3.0	2.2	0.6
4200	4.2	4.2	3.3	2.4
4400	5.3	5.1	4.7	2.3
4700	7.5	7.1	5.4	1.4
5000	7.6	5.7	5.1	0.8

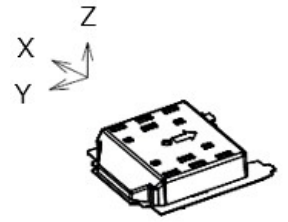
※The antenna gain is measured at the end of 150mm cable.

※The antenna gain is measured at free space.

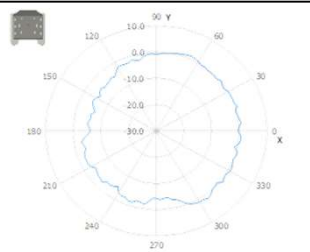
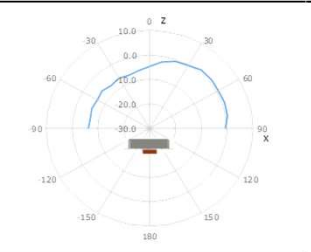
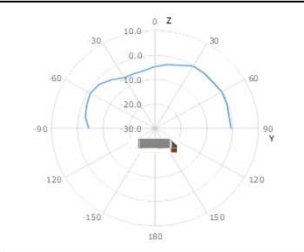
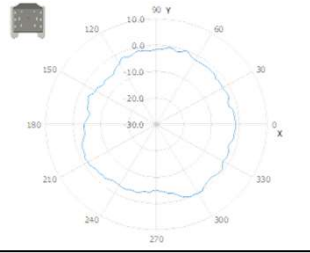
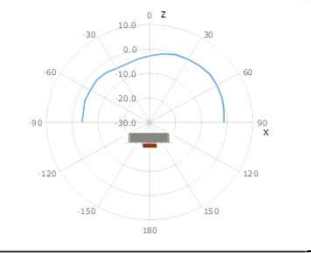
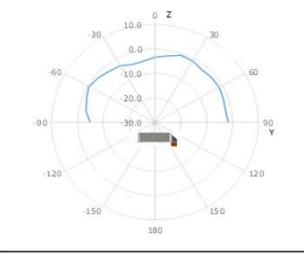
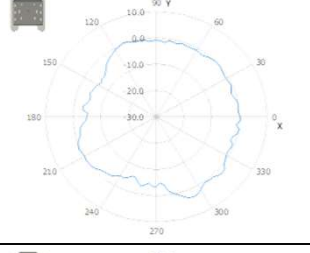
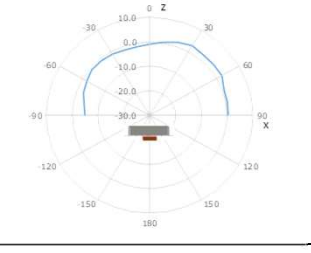
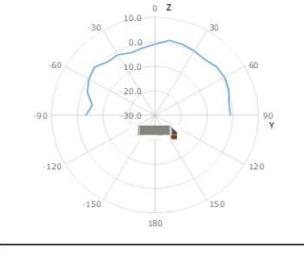
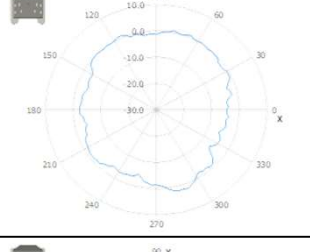
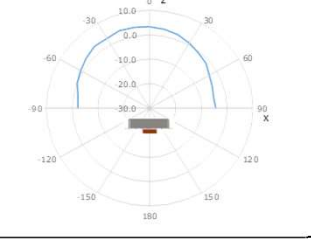
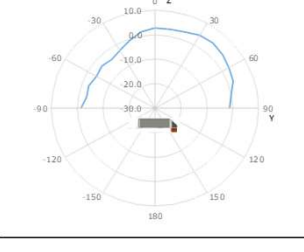
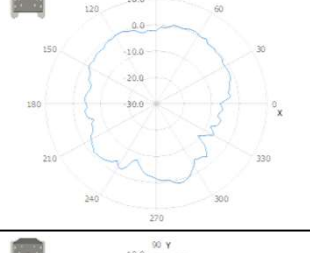
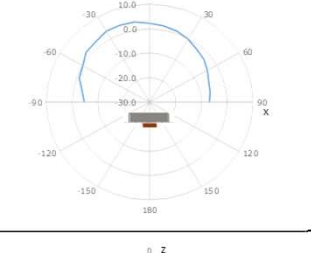
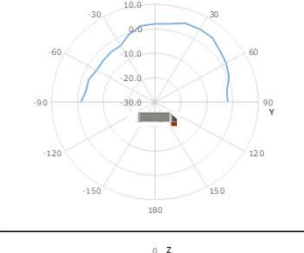
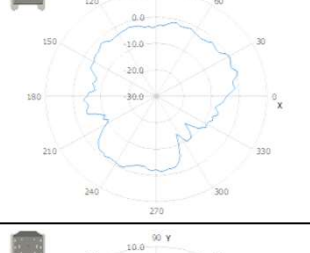
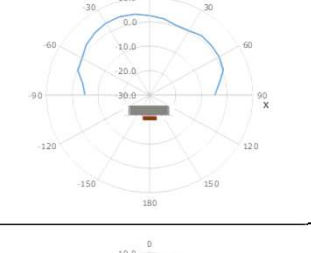
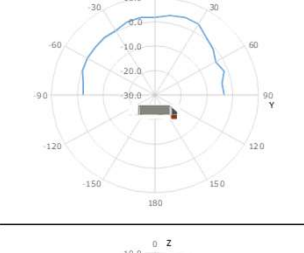
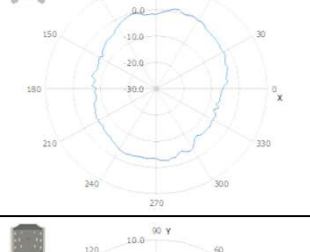
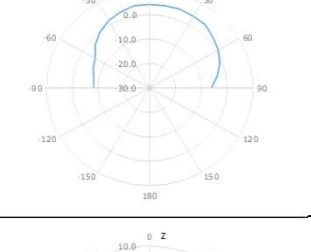
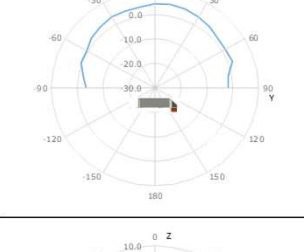
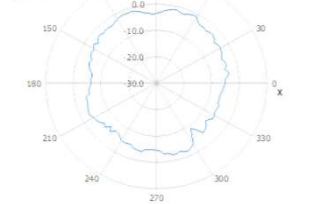
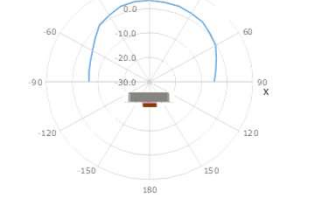
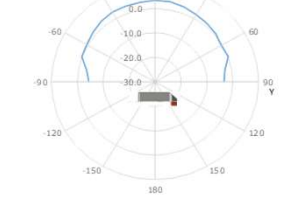
※The antenna gain is measured with bracket and cable holder.

Antenna radiation pattern of each frequency

Frequency (MHz)	Antenna radiation pattern		
	X-Y	Y-Z	Z-X
663			
700			
748			
798			
849			
880			
915			
1710			



Antenna radiation pattern of each frequency

Frequency (MHz)	Antenna radiation pattern		
	X-Y	Y-Z	Z-X
1785			
1910			
2025			
2300			
2400			
2496			
2595			
2690			

Antenna radiation pattern of each frequency

Frequency (MHz)	Antenna radiation pattern		
	X-Y	Y-Z	Z-X
3300			
3675			
3975			
4200			
4400			
4700			
5000			

※The antenna gain is measured at the end of 150mm cable.

※The antenna gain is measured at free space.

※The antenna gain is measured with bracket and cable holder.

※The Radiation Pattern is plotted with data of "total gain of the antenna".