

Table 1. Array weights to plot the simulation results (Fig. 4) for Case 1 using phase-only GA/CVX
(red value represents defective phase).

Antenna No.	Reference Pattern		Uncorrected (4 th : $\pm 180^\circ$)	GA Corrected	CVX Corrected
	Amplitude	Phase ($^\circ$)	Phase($^\circ$)	Phase($^\circ$)	Phase($^\circ$)
1	1.0000	9.5765	9.5765	162.8262	178
2	1.0000	333.2958	333.2958	210.7122	178
3	1.0000	356.2722	356.2722	186.2890	178
4	1.0000	358.1632	358.1632 - 180°	178.1632	178.1632
5	1.0000	0.4086	0.4086	179.6601	178
6	1.0000	355.8278	355.8278	183.1543	178
7	1.0000	335.2831	335.2831	202.3012	178
8	1.0000	18.0688	18.0688	166.7724	178

Table 2. Array weights to plot the simulation results (Fig. 5) for Case 2 using phase-only GA/CVX
(red value represents defective phases).

Antenna No.	Reference Pattern		Uncorrected (3 rd , 4 th $\pm 180^\circ$)	GA corrected	CVX corrected
	Amplitude	Phase ($^\circ$)	Phase ($^\circ$)	Phase ($^\circ$)	Phase ($^\circ$)
1	1.0000	9.5765	9.5765	153.0845	176
2	1.0000	333.2958	333.2958	191.7542	178
3	1.0000	356.2722	356.2722 - 180°	176.2722	176.2722
4	1.0000	358.1632	358.1632 - 180°	178.1632	178.1632
5	1.0000	0.4086	0.4086	178.0458	176
6	1.0000	355.8278	355.8278	177.0407	178
7	1.0000	335.2831	335.2831	196.4175	176
8	1.0000	18.0688	18.0688	155.9164	178

Table 3. Array weights to plot the simulation results (Fig. 6) for Case 3 using amplitude-phase GA/CVX
(red value represents defective phases).

Antenna No.	Reference Pattern		Uncorrected (3 rd , 4 th $\pm 180^\circ$)	GA corrected with SLL of 25 dB		CVX corrected with SLL of 25 dB	
	Amplitude	Phase ($^\circ$)	Phase ($^\circ$)	Amplitude	Phase ($^\circ$)	Amplitude	Phase ($^\circ$)
1	1.0000	0	0	0.6000	145.6765	0.7526	180
2	1.0000	0	0	0.3000	216.9919	0.7526	180
3	1.0000	90	90 + 180°	0.6000	270.0000	1.0000	270.0000
4	1.0000	90	90 + 180°	1.0000	270.0000	1.0000	270.0000
5	1.0000	180	180	1.0000	351.6454	1.0000	0
6	1.0000	180	180	0.6000	347.5149	1.0000	0
7	1.0000	270	270	0.3000	117.4395	0.7526	90
8	1.0000	270	270	0.6000	54.0674	0.7526	90

Table 4. Array weights to plot the measured results (Fig. 9) using phase-only GA
(red value represents defective phase).

Antenna No.	Reference Pattern		Uncorrected (4 th : $\pm 180^\circ$)	GA Corrected
	Amplitude	Phase ($^\circ$)	Phase($^\circ$)	Phase($^\circ$)
1	1.0000	9.5765	9.5765	162.8262
2	1.0000	333.2958	333.2958	210.7122
3	1.0000	356.2722	356.2722	186.2890
4	1.0000	358.1632	358.1632 - 180°	178.1632
5	1.0000	0.4086	0.4086	179.6601
6	1.0000	355.8278	355.8278	183.1543
7	1.0000	335.2831	335.2831	202.3012
8	1.0000	18.0688	18.0688	166.7724

Table 5. Array weights to plot the measured results (Fig. 10) using amplitude-phase GA
(red value represents defective phases).

Antenna No.	Reference Pattern		Uncorrected (3 rd , 4 th $\pm 180^\circ$)	GA corrected with SLL of 25 dB	
	Amplitude	Phase ($^\circ$)	Phase ($^\circ$)	Amplitude	Phase ($^\circ$)
1	1.0000	9.5765	9.5765	0.4831	153.0845
2	1.0000	333.2958	333.2958	0.4831	191.7542
3	1.0000	356.2722	356.2722 - 180°	1.0000	176.2722
4	1.0000	358.1632	358.1632 - 180°	1.0000	178.1632
5	1.0000	0.4086	0.4086	1.0000	178.0458
6	1.0000	355.8278	355.8278	1.0000	177.0407
7	1.0000	335.2831	335.2831	0.4831	196.4175
8	1.0000	18.0688	18.0688	0.4831	155.9164

Table 6. Array weights to plot the measured results (Fig. 11) using amplitude-phase GA
(red value represents defective phases).

Antenna No.	Reference Pattern		Uncorrected (3 rd , 4 th $\pm 180^\circ$)	GA corrected with SLL of 25 dB	
	Amplitude	Phase ($^\circ$)	Phase ($^\circ$)	Amplitude	Phase ($^\circ$)
1	1.0000	0	0	0.6000	145.6765
2	1.0000	0	0	0.3000	216.9919
3	1.0000	90	90 + 180°	0.6000	270.0000
4	1.0000	90	90 + 180°	1.0000	270.0000
5	1.0000	180	180	1.0000	351.6454
6	1.0000	180	180	0.6000	347.5149
7	1.0000	270	270	0.3000	117.4395
8	1.0000	270	270	0.6000	54.0674