◆ Product Description

MIcable SA-07-4B058060 is a high performance 4x4 butler matrix, covering the frequency of 5.85-5.95GHz. It can transfer the signal reciprocally from any of 4 ports to any of other 4 ports, with super phase accuracy, amplitude balance, very small insertion loss and high port to port isolation. The system comes housed in a compact, 101.6x91.5x16.5mm cavity. Because the high performance passive components and cables are used inside, the system has very stable, repeatable performance.

◆ Key Features

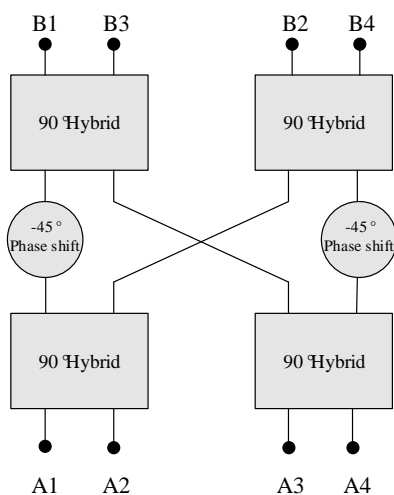| Feature	Advantage
Super phase accuracy	The system has typical 3° phase accuracy over optimized frequency range, it can be used as accurate phase feed network to realize ideal beamforming performance of phase array.
Excellent amplitude balance	The system has typical 0.3dB amplitude balance over optimized frequency range, it can help realize the ideal vector combination of the signal and beamforming.
Low insertion loss	The system has very low 7.5dB max insertion loss (including theoretical 6dB loss), it can help test system increase the dynamic range.
High port to port isolation	This can reduce the interference between the adjacent channel signals.
Low VSWR	Can better match the 50Ω system, reduce the reflection of the signal and energy loss.
High Power	Every port can accept the input signal with CW power of 5W,it is good for big signal measurement.
Excellent performance stability and repeatability	Maintain the consistent system performance, reduce the need of calibration.

◆ Specifications

Specifications	Unit	Limits
Frequency Range	GHz	5.85-5.95
VSWR for all RF ports	:1/(Max.)	1.5
Insertion Loss	dB/(Max.)	7.5
Amplitude Balance	dB/(Max.)	±0.4
Amplitude Flatness per path	dB/(Max.)	±0.3
Phase Accuracy	Deg./(Max.)	±4
Isolation	dB/(Min.)	16

- **Average Power:** 5W Max (single Input-Port);
- **Connector:** SMA[F];
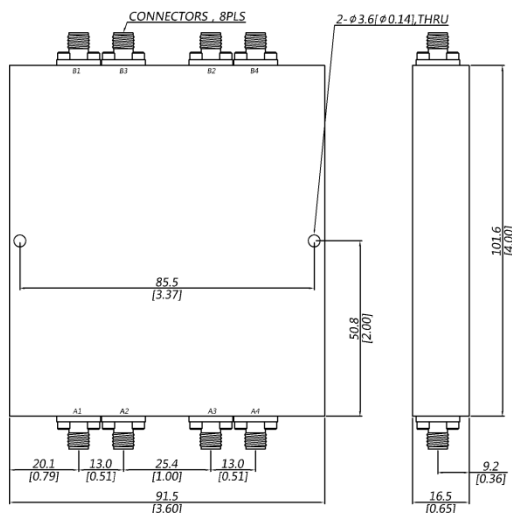- **Case Style:** 101.6x91.5x16.5mm;
- **Weight(max.):** 365g;

◆ Phase Table

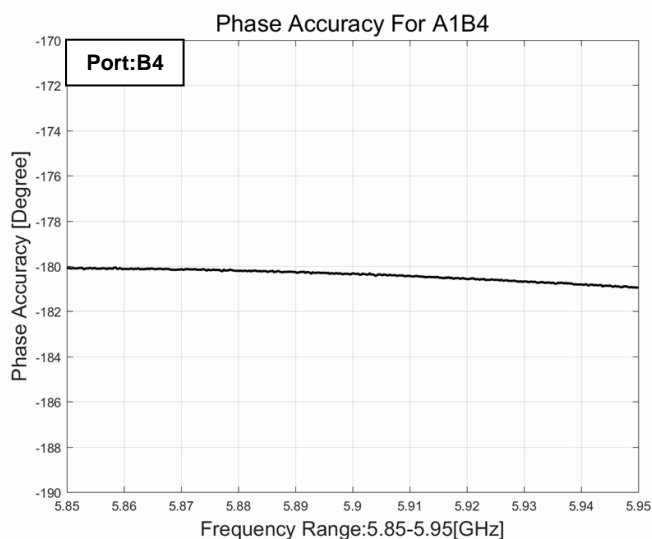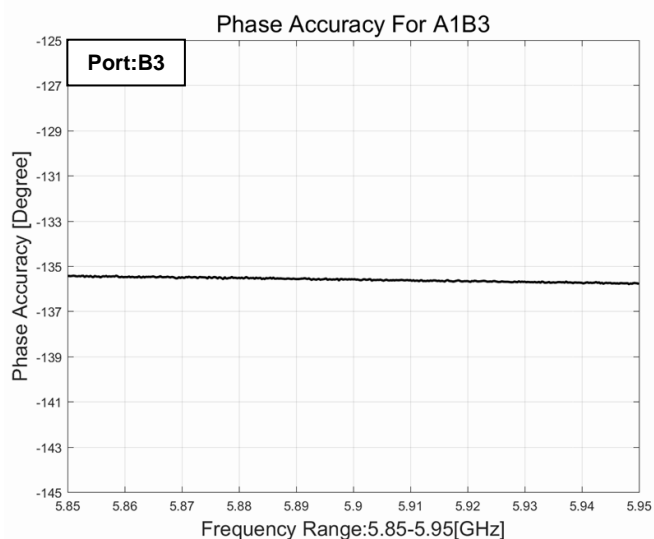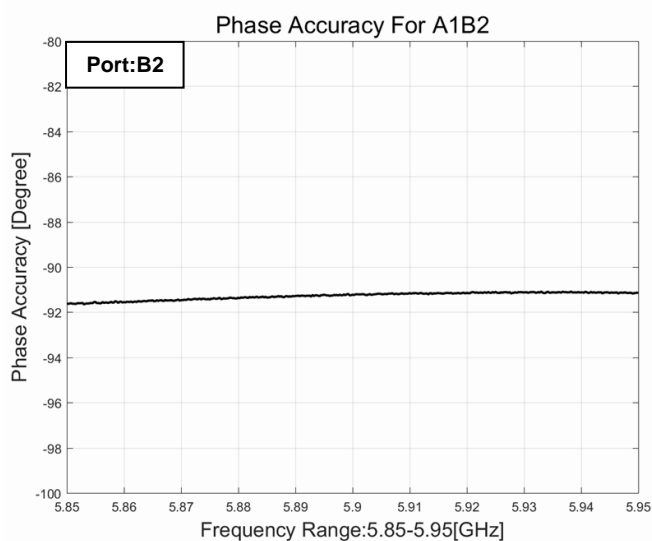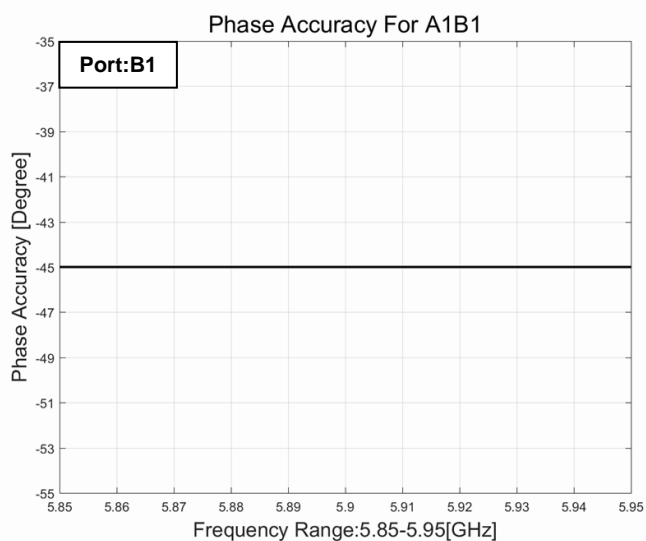| Input Output	A1	A2	A3	A4
B1	-45	-135	-90	-180
B2	-90	0	-225	-135
B3	-135	-225	0	-90
B4	-180	-90	-135	-45

◆ Schematic Diagram

◆ Outline Drawing

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◆ Typical Tested Graph
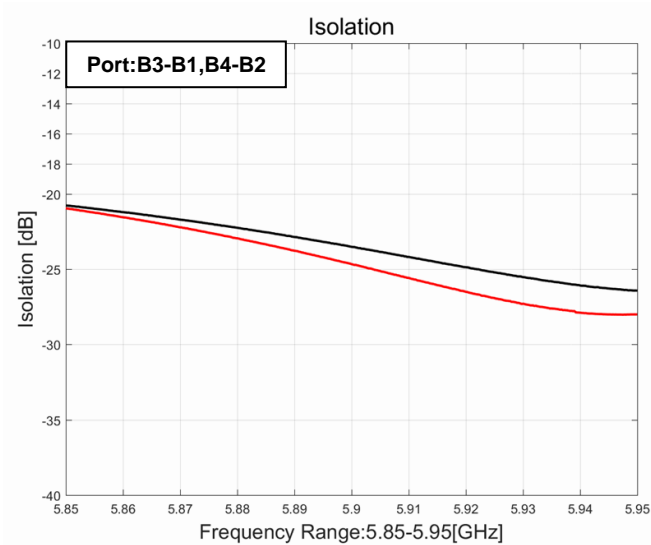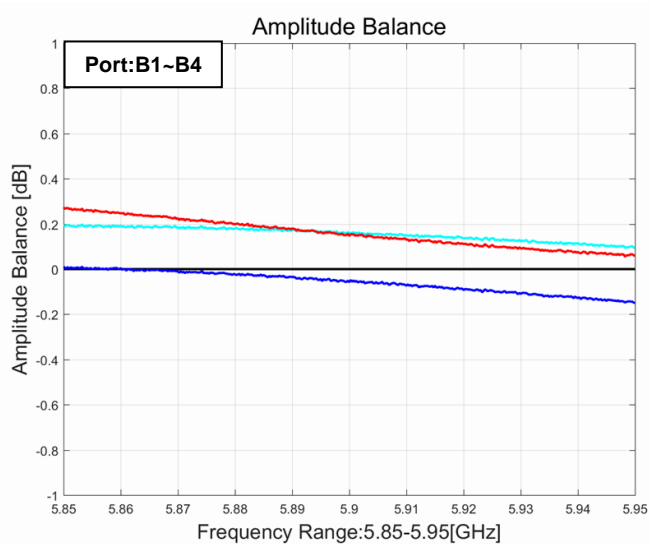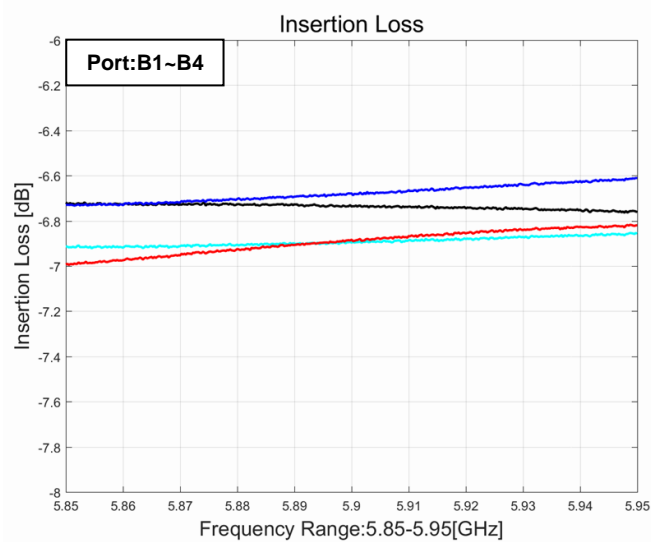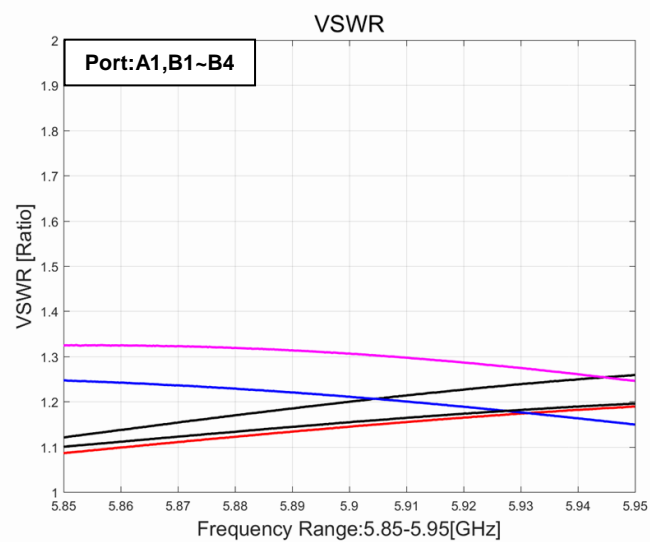
Take A1 As The Input Port

Take A1 As The Input Port

Phase Accuracy For A1B1

Port:B1

Phase Accuracy [Degree]

Frequency Range:5.85-5.95[GHz]

Phase Accuracy For A1B2

Port:B2

Phase Accuracy [Degree]

Frequency Range:5.85-5.95[GHz]

Phase Accuracy For A1B3

Port:B3

Phase Accuracy [Degree]

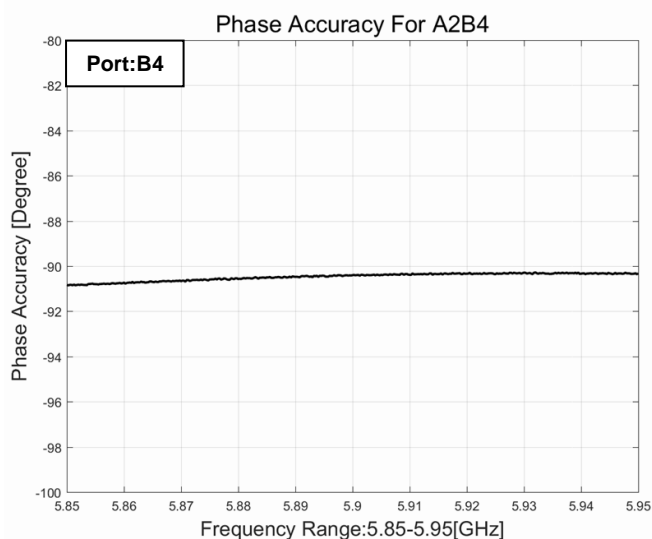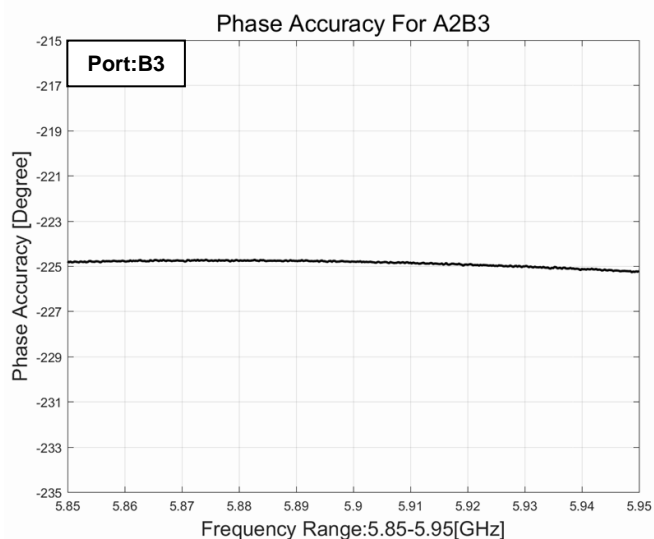Frequency Range:5.85-5.95[GHz]

Phase Accuracy For A1B4

Port:B4

Phase Accuracy [Degree]

Frequency Range:5.85-5.95[GHz]

Take A2 As The Input Port

Phase Accuracy For A2B1
Port:B1
Frequency Range:5.85-5.95[GHz]

Phase Accuracy For A2B2
Port:B2
Frequency Range:5.85-5.95[GHz]

Phase Accuracy For A2B3
Port:B3
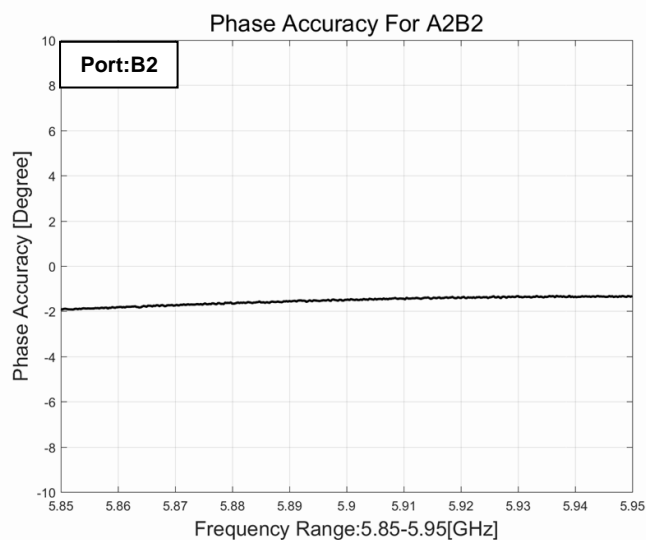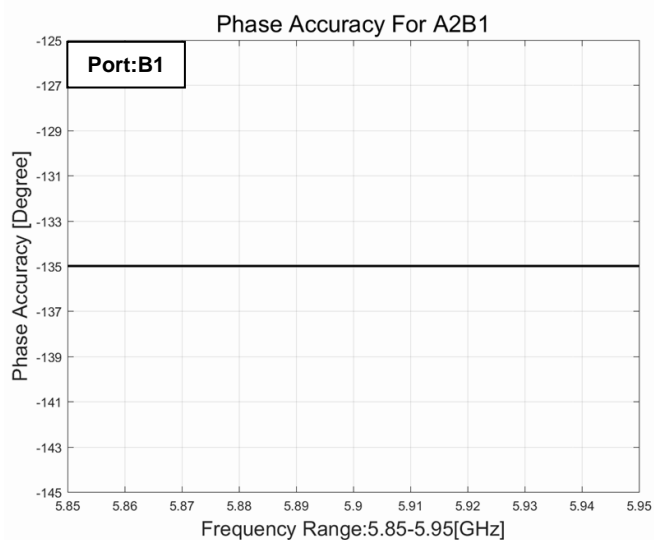Frequency Range:5.85-5.95[GHz]

Phase Accuracy For A2B4
Port:B4
Frequency Range:5.85-5.95[GHz]

Take A3 As The Input Port

Phase Accuracy For A3B1

Port:B1

Phase Accuracy [Degree]

Frequency Range:5.85-5.95[GHz]

Phase Accuracy For A3B2

Port:B2

Phase Accuracy [Degree]

Frequency Range:5.85-5.95[GHz]

Phase Accuracy For A3B3

Port:B3

Phase Accuracy [Degree]

Frequency Range:5.85-5.95[GHz]

Phase Accuracy For A3B4

Port:B4

Phase Accuracy [Degree]

Frequency Range:5.85-5.95[GHz]

Take A4 As The Input Port

Phase Accuracy For A4B1

Port:B1

Phase Accuracy For A4B2

Port:B2

Phase Accuracy For A4B3

Port:B3

Phase Accuracy For A4B4

Port:B4