



Digitized Automation for a Changing World

# Delta Advanced Slice I/O Module AX-5 Series

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## Ultra Slim | Simple | Boundless

Industry 4.0 has accelerated automation in a variety of production scenarios. Smart manufacturing requires faster I/O updates and system expandability, which has led to rising demands for higher-performance equipment, speedier configuration, and flexible I/O allocation.

The Advanced Slice I/O Module AX-5 Series features a 12mm ultra slim design that cuts control panel costs significantly. It also comes with removable terminal blocks and a unique DIN rail clip design to increase efficiency in installation and wiring while saving on labor costs. The system utilizes a high-speed 100MHz EtherCAT bus, ensuring high-precision synchronization control and real-time I/O updates. The Digital I/O Module ensures overvoltage and overcurrent protection, boosting system robustness. Furthermore, the Advanced Slice I/O Module AX-5 Series supports almost unlimited expansion on I/O modules with added System Power Supply and I/O Power Supply Modules. With the I/O Power Supply Module, I/O signals of different groups can be managed separately, which stabilizes signals and speeds up troubleshooting. The Hot Connect feature enables faster configuration and speeds up process change.

The Advanced Slice I/O Module AX-5 Series is not only cost-effective, reducing hardware and labor costs, it also offers superb performance with a high-speed I/O bus and system flexibility. Overall, it boosts the competitiveness of clients.



## Coupler

Unique interlock  
DIN rail clip design

Wiring diagrams  
on products

RJ45 interface  
(IN/OUT)



Indicators for  
system/communication status

Removable terminal  
blocks

Power terminals

- Unit (System) Power
- I/O Power

86 (L) × 50.5 (W) × 100 (H) mm

## I/O Module

### Digital I/O (NPN/PNP)



16 DI

16 DO

16 DIO

### Analog I/O



04 AD/DA

08 AD/DA

### Temperature



02 TC/PT

04 TC/PT

### Power



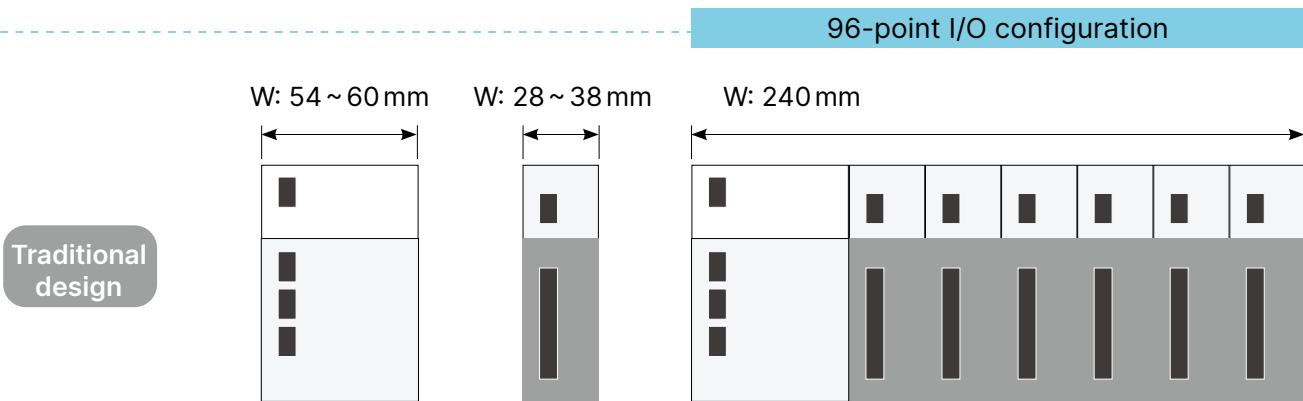
Unit (System) Power

I/O Power

Power Connector

## Ultra Slim

The 12 mm-thin slice-type module saves up to 50% space compared to traditional I/O modules, greatly reducing control panel size and cost.



## Easy Wiring

Removable terminal blocks increase wiring ease. To improve spare parts management, the terminal blocks are standardized to fit the AX-5 Series couplers and I/O modules. The printed wiring diagram on the side removes the hassle of checking user manuals and also reduces maintenance effort.

### Removable terminal blocks



### Wiring diagrams printed on products

No wiring manuals required



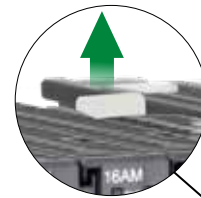
## Simple Installation

The unique DIN rail clip design entails a simple 2-step process for module removal and installation, saving commissioning time and maintenance effort.

### • Fast Removal

**Step 1:** Release either the upper or bottom clip so that both clips can be released from the DIN rail.

**Step 2:** Remove the module from the front. There's no need to adjust adjacent modules.



### • Simple Installation

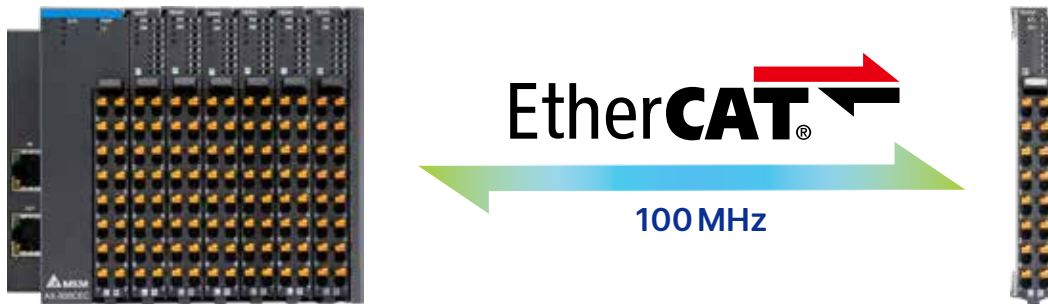
**Step 1:** Press both clips.

**Step 2:** Push the module until you hear a "click" sound. Both clips will be secured on the DIN rail.



## Highly-Efficient System Bus

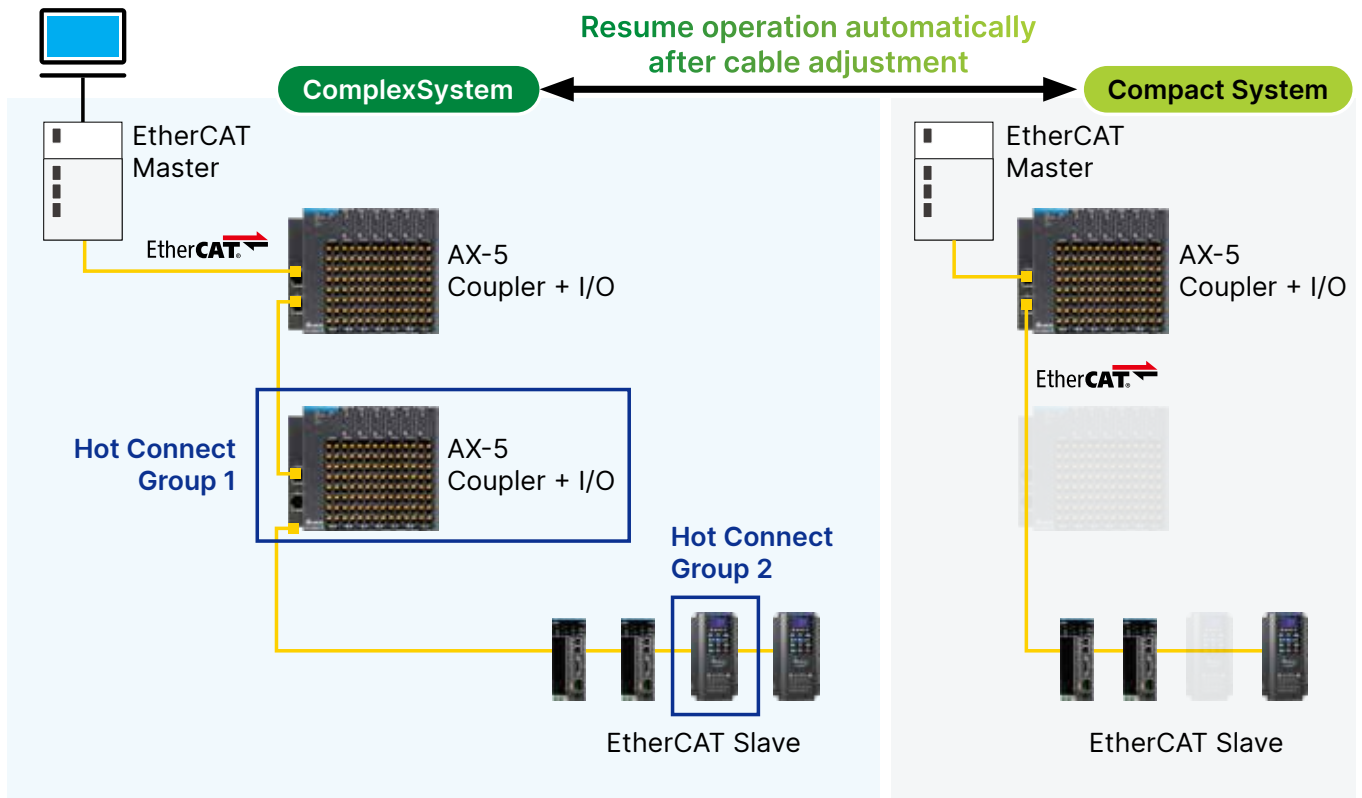
Utilizes a 100 MHz EtherCAT system bus between couplers and I/O modules, ensuring real time I/O updates and precise synchronization.



## Supports EtherCAT Hot Connect

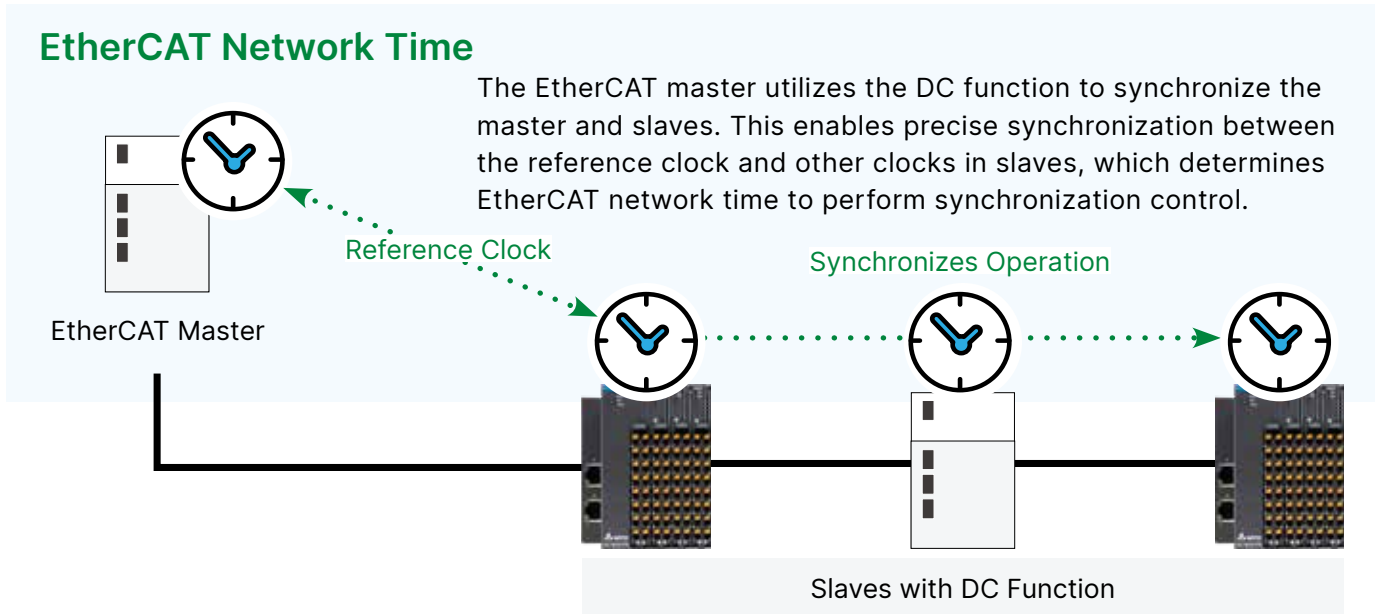
Hot Connect allows slaves to be easily removed or added flexibly in the EtherCAT network, enabling fast configuration. Users can maintain the same project and apply changes to systems with different scales.

**Hot Connect can adapt to different configuration changes according to Hot Connect groups defined by EtherCAT Master**



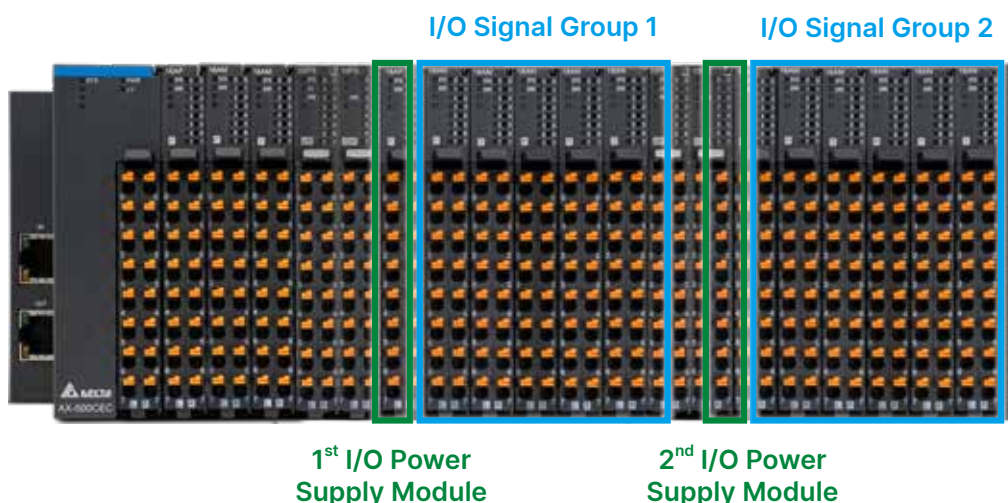
## Supports EtherCAT Distributed Clock (DC) Function

The EtherCAT DC function is the key to achieving precise synchronization control between master and slaves.



## Grouped I/O Signal and Power Management

Supports expansion of I/O modules with System Power Supply and I/O Power Supply Modules. The I/O Power Supply Module can be used to separate the I/O in different groups for stable I/O signals. In all, this feature speeds up I/O error troubleshooting and reduces system downtime.



# Models and Specifications

## Electrical and Environmental Specifications

Item	Specifications
Insulation	Designed in accordance with IEC/EN 61131-2, IEC/EN 61010-1 and IEC/EN 61010-2-201
DC Input Power Supply	20.4 V to 28.8 V (24 V, -15% to +20%) In accordance with IEC/EN 61131-2
DC Input Power Source	SELV/PELV circuit 24 V <sub>DC</sub> power supply is recommended
Pollution Degree	2: in accordance with IEC/EN 61131-2 and IEC/EN 61010-2-201
Overvoltage Category	II: in accordance with IEC/EN 61131-2 and IEC/EN 61010-2-201
Protection Rating	IP20, in accordance with IEC 60529 <ul style="list-style-type: none"> <li>• Protection against a probe or approximate size of a finger to make contact with hazardous parts</li> <li>• Protection against solid objects with a diameter greater than or equal to 12.5 mm</li> <li>• No protection against water ingress</li> </ul>
Flammability Classifications	UL94V-0

Item	Specifications
Free Fall	≤ 1 m
Operating Temperature	-20 °C ~ +60 °C
Storage Temperature	-40 °C ~ +85 °C
Altitude	≤ 2,000 m
Atmospheric Pressure	1,100 hPa ~ 750 hPa (typical)
Operating Humidity	5 ~ 95%, non-condensing
Vibration Resistance	Vibration Type: Sweeping, at a rate of 1 octave/min ( ± 10%) 5 to 8.4 Hz: 3.5 mm displacement 8.4 to 150 Hz: 10 m/s <sup>2</sup> (1g constant acceleration) Vibration Duration: 10 sweep cycles per axis on each of 3 mutually perpendicular axes
Shock Resistance	Shock Type: Half-Sine Shock Severity: 150 m/s <sup>2</sup> (15 g) peak, 11 ms duration Shock Direction: Three shocks in each direction per axis, on 3 mutually perpendicular axes (total of 18 shocks)



## Ordering Information

For detailed specifications, please refer to the AX-5 Series Module Manual

Name	Model	Specifications	Certification
<b>Coupler</b>	AX-500CEC00-0A	EtherCAT coupler	CE UL (Available 2024/Q4)
<b>Power Supply Module</b>	AX-502PS11-0A	Unit (System) power supply module - 24V to 5V , 2A output	CE UL (Available 2024/Q4)
<b>Power Supply and Extension Module</b>	AX-510PS12-0A	I/O power supply module - I/O power 24 V <sub>DC</sub>	CE UL (Available 2024/Q4)
	AX-516PC10-0A	I/O connection module - 16 IOV	
	AX-516PC20-0A	I/O connection module - 16 IOG	
	AX-516PC30-0A	I/O connection module - 8 IOV, 8 IOG	
	AX-514PC40-0A	I/O connection module - 14 PE	



## Ordering Information

For detailed specifications, please refer to the AX-5 Series Module Manual

Name	Model	Specifications	Certification
Digital I/O Module	AX-516AM10-0A	16 digital inputs, 24 V <sub>DC</sub> , 2.5 mA, 1 ms, Source Input (NPN)	CE UL (Available 2024/Q4)
	AX-516AM20-0A	16 digital inputs, 24 V <sub>DC</sub> , 2.5 mA, 1 ms, Sink Input (PNP)	
	AX-516AN01-0A	16 digital outputs, 24 V <sub>DC</sub> , 0.5 A, 1 ms, Sink Output (NPN)	
	AX-516AN02-0A	16 digital outputs, 24 V <sub>DC</sub> , 0.5 A, 1 ms, Source Output (PNP)	
	AX-516AP11-0A	8 digital inputs, 24 V <sub>DC</sub> , 2.5 mA, 1 ms, Source Input (NPN) 8 digital outputs, 24 V <sub>DC</sub> , 0.5 A, 1 ms, Sink Output (NPN)	
	AX-516AP22-0A	8 digital inputs, 24 V <sub>DC</sub> , 2.5 mA, 1 ms, Sink Input (PNP) 8 digital outputs, 24 V <sub>DC</sub> , 0.5 A, 1 ms, Source Output (PNP)	
Analog I/O Module	AX-504AD10-0A	4 analog inputs, ±10V, 16-bits, 100 μs	CE UL (Available 2024/Q4)
	AX-504AD20-0A	4 analog inputs, ±20 mA, 16-bits, 100 μs	
	AX-508AD10-0A	8 analog inputs, ±10V, 16-bits, 100 μs	
	AX-508AD20-0A	8 analog inputs, ±20 mA, 16-bits, 100 μs	
	AX-504DA01-0A	4 analog outputs, ±10V, 16-bits, 100 μs	
	AX-504DA02-0A	4 analog outputs, 0~20 mA, 16-bits, 100 μs	
	AX-508DA01-0A	8 analog outputs, ±10V, 16-bits, 100 μs	
Temperature Measurement Module	AX-502TC10-0B	2 TC, J, K, T, E, L, U, N, R, S, B, C (WRe5-26), PLII ± 130 mV, 24-bits	CE UL (Available 2024/Q4)
	AX-504TC10-0B	4 TC, J, K, T, E, L, U, N, R, S, B, C (WRe5-26), PLII ± 130 mV, 24-bits	
	AX-502PT10-0B	2 RTD, PT100, PT1000, Ni100, Ni1000, 0~300 Ω, 24-bits	
	AX-504PT10-0B	4 RTD, PT100, PT1000, Ni100, Ni1000, 0~300 Ω, 24-bits	





Smarter. Greener. Together.

## Industrial Automation Headquarters

### Taiwan: Delta Electronics, Inc.

Taoyuan Technology Center  
No.18, Xinglong Rd., Taoyuan District,  
Taoyuan City 33068, Taiwan  
TEL: +886-3-362-6301 / FAX: +886-3-371-6301

## Asia

### China: Delta Electronics (Shanghai) Co., Ltd.

No.182 Minyu Rd., Pudong Shanghai, P.R.C.  
Post code : 201209  
TEL: +86-21-6872-3988 / FAX: +86-21-6872-3996  
Customer Service: 400-820-9595

### Japan: Delta Electronics (Japan), Inc.

Industrial Automation Sales Department  
2-1-14 Shibadaimon, Minato-ku  
Tokyo, Japan 105-0012  
TEL: +81-3-5733-1155 / FAX: +81-3-5733-1255

### Korea: Delta Electronics (Korea), Inc.

1511, 219, Gasan Digital 1-Ro., Geumcheon-gu,  
Seoul, 08501 South Korea  
TEL: +82-2-515-5305 / FAX: +82-2-515-5302

### Singapore: Delta Energy Systems (Singapore) Pte Ltd.

4 Kaki Bukit Avenue 1, #05-04, Singapore 417939  
TEL: +65-6747-5155 / FAX: +65-6744-9228

### India: Delta Electronics (India) Pvt. Ltd.

Plot No.43, Sector 35, HSIIDC Gurgaon,  
PIN 122001, Haryana, India  
TEL: +91-124-4874900 / FAX: +91-124-4874945

### Thailand: Delta Electronics (Thailand) PCL.

909 Soi 9, Moo 4, Bangpoo Industrial Estate (E.P.Z),  
Pattana 1 Rd., T.Phraksa, A.Muang,  
Samutprakarn 10280, Thailand  
TEL: +66-2709-2800 / FAX: +66-2709-2827

### Australia: Delta Electronics (Australia) Pty Ltd.

Unit 2, Building A, 18-24 Ricketts Road,  
Mount Waverley, Victoria 3149 Australia  
Mail: IA.au@deltaww.com  
TEL: +61-1300-335-823 / +61-3-9543-3720

## Americas

### USA: Delta Electronics (Americas) Ltd.

5101 Davis Drive, Research Triangle Park, NC 27709, U.S.A.  
TEL: +1-919-767-3813

### Brazil: Delta Electronics Brazil Ltd.

Estrada Velha Rio-São Paulo, 5300 Eugênio de  
Melo - São José dos Campos CEP: 12247-004 - SP - Brazil  
TEL: +55-12-3932-2300 / FAX: +55-12-3932-237

### Mexico: Delta Electronics International Mexico S.A. de C.V.

Gustavo Baz No. 309 Edificio E PB 103  
Colonia La Loma, CP 54060  
Tlalnepantla, Estado de México  
TEL: +52-55-3603-9200

## EMEA

### EMEA Headquarters: Delta Electronics (Netherlands) B.V.

Sales: Sales.IA.EMEA@deltaww.com  
Marketing: Marketing.IA.EMEA@deltaww.com  
Technical Support: iatechnicalsupport@deltaww.com  
Customer Support: Customer-Support@deltaww.com  
Service: Service.IA.emea@deltaww.com  
TEL: +31(0)40 800 3900

### BENELUX: Delta Electronics (Netherlands) B.V.

Automotive Campus 260, 5708 JZ Helmond, The Netherlands  
Mail: Sales.IA.Benelux@deltaww.com  
TEL: +31(0)40 800 3900

### DACH: Delta Electronics (Netherlands) B.V.

Coesterweg 45, D-59494 Soest, Germany  
Mail: Sales.IA.DACH@deltaww.com  
TEL: +49 2921 987 238

### France: Delta Electronics (France) S.A.

ZI du bois Challand 2, 15 rue des Pyrénées,  
Lisses, 91090 Evry Cedex, France  
Mail: Sales.IA.FR@deltaww.com  
TEL: +33(0)1 69 77 82 60

### Iberia: Delta Electronics Solutions (Spain) S.L.U

Ctra. De Villaverde a Vallecas, 265 1º Dcha Ed.  
Hormigueras – P.I. de Vallecas 28031 Madrid  
TEL: +34(0)91 223 74 20  
Carrer Llacuna 166, 08018 Barcelona, Spain  
Mail: Sales.IA.Iberia@deltaww.com

### Italy: Delta Electronics (Italy) S.r.l.

Via Meda 2-22060 Novedrate(CO)  
Piazza Grazioli 18 00186 Roma Italy  
Mail: Sales.IA.Italy@deltaww.com  
TEL: +39 039 8900365

### Turkey: Delta Greentech Elektronik San. Ltd. Sti. (Turkey)

Şerifali Mah. Hendem Cad. Kule Sok. No:16-A  
34775 Ümraniye – İstanbul  
Mail: Sales.IA.Turkey@deltaww.com  
TEL: + 90 216 499 9910

### MEA: Eltek Dubai (Eltek MEA DMCC)

OFFICE 2504, 25th Floor, Saba Tower 1,  
Jumeirah Lakes Towers, Dubai, UAE  
Mail: Sales.IA.MEA@deltaww.com  
TEL: +971(0)4 2690148

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