CERTIFICATE AND RESOLUTION TO OPEN INTERACTIVE BROKERS ACCOUNT

Instructions: Please print this Form, complete it, and return it to Interactive Brokers.

This Form should be signed by the Secretary, Chief Executive, Board Member, Managing Member, General Partner or other authorized person acting on behalf of the entity opening the Account.

When the Form is sent to us, please also include the title page and relevant excerpt from the Articles of Incorporation, LLC Agreement, Partnership Agreement, Certificate of Incumbency or other organizational document demonstrating the authority of the person listed below who is certifying this resolution.

Name of Legal Entity:		
	(insert name of legal entity opening Account)	
I.		
-)	(insert full name of person signing/certifying this Form)	
in my official capacity as		
	(insert title of person signing/certifying this Form)	

hereby certify that the following Resolutions were duly adopted by the Board of Directors/Officers/Managers/Partners of the entity named above and are now in full force and effect:

RESOLVED, that the corporation (or limited liability company, partnership or other entity), on its own behalf, or, if the Account is in the name of another entity, of which the corporation (or limited liability company, partnership or other entity) is a general partner, managing member or other authorized representative, on behalf of that entity, has authorized and directed the officer(s) or agent(s) below to establish and maintain one or more accounts (each, an "Account"), and to engage in any of the transactions hereinafter described, with or through Interactive Brokers UK and/or its current or future affiliated brokerage companies (collectively "Interactive Brokers").

RESOLVED, that the corporation (or limited liability company, partnership or other entity), on its own behalf, or, if the Account is in the name of another entity, of which the corporation (or limited liability company, partnership or other entity) is a general partner, managing member or other authorized representative, on behalf of that entity is hereby authorized and empowered to purchase, hold, pledge, exercise, convert, tender, redeem, exchange, transfer, assign, sell (including short, when-issued and forward sales), enter into, write, issue and otherwise deal and trade, singly or in combination, in any of the investment or trading products selected during the Interactive Brokers Account application or any time thereafter, including but not limited to: securities, debt securities, equity securities, other securities, commodities, metals, futures, mutual funds, hedge funds and other collective investments, exchange-traded products, indices, foreign currencies and related instruments of any kind, options, warrants, derivatives, contracts for differences, exchanges-for-physicals, swaps, international transactions in any of the foregoing and any transaction that is similar to any of the transactions described above (including an option with respect to any of them), any combination of these transactions or any other transaction, whether or not described in this resolution.

If the Account is authorized to trade using margin please check the box below:

	Without limiting the foregoing it is further RESOLVED that the entity shall hold a Margin Account and may enter transactions that involve or create margin and/or financing, including but not limited to margin purchases, short sales and derivative and other transactions.			
	.VED , that any transactions or agreements of any on of these resolutions are hereby unconditionall	kind relating to any Account effected prior to the y ratified in all respects.		
partne • •	rship or other entity that is opening the Account to give to and receive from Interactive Brokers regarding the Account; to have complete authority at all times to bind to partnership or other entity that is opening the Account, including but not limited to providing receiving disclosures, viewing or changing Account funds; to order the transfer or delivery in or out of any any person or entity, including to/from the office to sign for and on behalf of the corporation, limit that is opening the Account all releases, assignment connection with any Account or transaction; to appoint any other person or persons to do an empowered to do and to grant electronic Account	che corporation, limited liability company, Account in any and all respects relating to the Account information, signing relevant agreements, ount information, trading, and disposing of positions y securities, contracts, money or other property to cers or agents listed herein; ited liability company, partnership or other entity ments, powers of attorney or other documents in ny and all things that such officer or agent is hereby ant access (including trading access) to any additional sted as authorized officers or agents on this Form; or agent may deem necessary or desirable to		
	Name of Officer or Agent	Title and Name of Firm		
<i>above</i> In witr	for the Account to be activated. CERTIFIC	and ratify each of the resolutions, representations,		
vv ar 1 d1	X(signature of person signing/certifying this For			

(date)