### UNITED STATES PATENT AND TRADEMARK OFFICE

### BEFORE THE PATENT TRIAL AND APPEAL BOARD

# ZHONGSHAN BROAD OCEAN MOTOR CO., LTD.; BROAD OCEAN MOTOR LLC; and BROAD OCEAN TECHNOLOGIES, LLC

Petitioners

V.

### NIDEC MOTOR CORPORATION

### Patent Owner

U.S. Patent No. 7,626,349
Issue Date: December 1, 2009
Title: LOW NOISE HEATING, VENTILATING AND/OR
AIR CONDITIONING (HVAC) SYSTEMS

# SECOND PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT NO. 7,626,349

Case No. IPR2015-00762

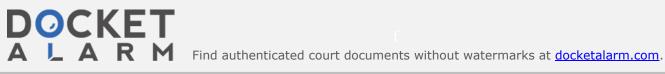


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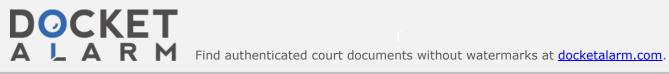
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	C.	C. The Challenged Claims Are Invalid Under 35 U.S.C. §102(b)					
		1. Ground 1 Hideji				11	
			a.	Clair	m 1	11	
				(1)	"A heating, ventilating and/or air conditioning (HVAC)		
					system comprising"	11	
				(2)	"a system controller"	12	



	(3)	"a motor controller"	14	
	(4)	"an air-moving component, and"	15	
	(5)	"a permanent magnet motor having a stationary assembly, a rotatable assembly in magnetic coupling relation to the stationary assembly, and a shaft coupled to the air-moving component,"	17	
	(6)	"wherein the motor controller is configured for performing sine wave commutation, using independent values of q- and d-axis currents, in response to one or more control signals received from the system controller to produce continuous phase currents in the permanent magnet motor for driving the air-moving component."	19	
b.	Claim 2			
	(1)	"The HVAC system of claim I wherein the stationary assembly includes a plurality of phase windings and the motor controller is configured for energizing all of the phase windings at the same time"		
c.	Clair	m 3	28	
	(1)	"The HVAC system of claim 2 wherein the continuous phase currents are substantially sinusoidal."	20	
d.	Clair			
u.	Ciall	m 8	∠9	



	(1)	"The HVAC system of claim 3 wherein the permanent magnet motor is a brushless permanent magnet (BPM) motor."	29	
e.	Clair	m 9	30	
	(1)	"The HVAC system of claim 8 wherein the BPM motor is a back-emf BPM motor."	30	
f.	Clair	m 12	31	
(1)	"The HVAC system of claim 3 wherein the at least one control signal from the system controller represents a desired torque or speed of the permanent magnet motor"			
g.	Clair	m 16	32	
(1)	"A blower assembly for a heating, ventilating and/or air conditioning (HVAC) system, the blower assembly comprising"			
(2)	-	notor controller"		
(3)		35		
(4)	"a permanent magnet motor having a stationary assembly, a rotatable assembly in magnetic coupling relation to the stationary assembly, and a shaft coupled to the blower,"			
h.	Clair	41		
	(1)	"A method for driving an air-moving component of a heating, ventilating and/or air conditioning (HVAC) system in response to a control signal, the HVAC system including a permanent magnet motor having a stationary assembly and a rotatable assembly in		



			magnetic coupling relation to the stationary assembly, said rotatable assembly coupled in driving relation to the air-moving component, the method comprising"	41
		(2)	"receiving at least one control signal from a system controller, and"	43
		(3)	"performing sine wave commutation, using independent values of q and d axis currents, in response to the at least one control signal received from the system controller to produce continuous currents in the permanent magnet motor for driving said air-moving component."	44
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