United States District Court, S.D. California.

QUALCOMM INCORPORATED, Plaintiff. v. BROADCOM CORPORATION, Defendants. Broadcom Corporation, Counter-Claimant. v. Qualcomm Incorporated, Counter-Defendant.

Civil No. 05CV1392-B(BLM)

May 2, 2006.

Adam Arthur Bier, Christian E. Mammen, James R. Batchelder, Day Casebeer Madrid and Batchelder, Kevin Kook Tai Leung, Law Office of Kevin Kook Tai Leung, Cupertino, CA, Barry Jerome Tucker, David E. Kleinfeld, Brandon Hays Pace, Heller Ehrman, James T. Hannink, Kathryn Bridget Riley, Randall Evan Kay, Brooke Beros, DLA Piper US, Heidi Maley Gutierrez, Higgs Fletcher and Mack, San Diego, CA, E. Joshua Rosenkranz, Heller Ehrman, Evan R. Chesler, Richard J. Stark, Cravath Swaine and Moore, Richard S. Taffet, Bingham McCutchen, New York, NY, Nitin Subhedar, Jaideep Venkatesan, Heller Ehrman, Menlo Park, CA, Jason A. Yurasek, Bingham McCutchen, San Francisco, CA, Patrick Taylor Weston, McCutchen Doyle Brown and Enersen, Walnut Creek, CA, William F. Abrams, Bingham McCutchen, East Palo Alto, CA, for Plaintiff.

Alejandro Menchaca, Andrew B. Karp, Brian C. Bianco, Christopher N. George, Consuelo Erwin, George P. McAndrews, Gregory C. Schodde, Joseph F. Harding, Lawrence M. Jarvis, Leonard D. Conapinski,
Matthew A. Anderson, Ronald H. Spuhler, Scott P. McBride, Stephen F. Sherry, Thomas J. Wimbiscus, Jean Dudek Kuelper, McAndrews Held and Malloy, Chicago, IL, Allen C. Nunnally, Daniel M. Esrick, John J. Regan, John S. Rhee, Joseph F. Haag, Kate Saxton, Louis W. Tompros, Richard W. O'Neill, Stephen M. Muller, Vinita Ferrera, Wayne L. Stoner, William F. Lee, Wilmer Cutler Pickering Hale and Dorr, Boston, MA, James Sullivan McNeill, Robert S. Brewer, Jr., McKenna Long and Aldridge, San Diego, CA, James L. Quarles, III, William J. Kolasky, Wilmer Cutler Pickering Hale and Dorr, Alina D. Eldred, Mark W. Nelson, Steven J. Kaiser, Cleary Gottleib Steen and Hamilton, Washington, DC, Maria K. Vento, Mark D. Selwyn, Wilmer Cutler Pickering Hale and Dorr, Palo Alto, CA, for Defendant.

## CLAIM CONSTRUCTION ORDER FOR UNITED STATES PATENT NUMBER 5,627,412

RUDI M. BREWSTER, Senior District Judge.

Pursuant to Markman v. Westview Instruments, Inc., 517 U.S. 370 (1996), on March 27-30, 2006, and April 3, 2006, the Court conducted a Markman hearing concerning the above-titled patent infringement action regarding construction of the disputed claim terms for U.S. Patent Number 5,627,412 ("the BC '412 patent"). Plaintiff Qualcomm, Inc. was represented by the law firm of Heller Ehrman LLP, and Defendant Broadcom Corp. was represented by the law firm of McAndrews, Held & Malloy, Ltd.

At the Markman hearing, the Court, with the assistance of the parties, analyzed the claim terms in order to prepare jury instructions interpreting the pertinent claims at issue in the BC '412 patent. Additionally, the Court prepared a case glossary for terms found in the claims and specification for the BC '412 patent considered to be technical in nature which a jury of laypersons might not understand clearly without a specific definition.

After careful consideration of the parties' arguments and the applicable statutes and case law, the Court **HEREBY CONSTRUES** the claims in dispute for the BC '412 patent and **ISSUES** the relevant jury instructions as written in Exhibit A, attached hereto. Further, the Court **HEREBY DEFINES** all pertinent technical terms as written in Exhibit B, attached hereto.

#### IT IS SO ORDERED.

#### EXHIBIT A FN1

FN1. All terms appearing in bold face type and underlined have been construed by the court and appear with their definitions in the glossary in Exhibit B. The definition for each construed term appears in italics after its first use in the patent.

VERBATIM CLAIM LANGUAGE	COURT'S CONSTRUCTION
Claim 1	Claim 1
1. A dynamically switchable power supply in an electronic system having varying power requirements, said dynamically switchable power supply comprising:	A <i>dynamically switchable power supply</i> [ a unit capable of supplying a power output that can be switched from one level to another during operation ] in an electronic system having varying power requirements, said dynamically switchable power supply <i>comprising</i> [ <i>including but not limited to</i> ]:
(a) a central processing unit, said central processing unit capable of operating at a plurality of voltages;	(a) a <i>central processing unit</i> [ ( <i>CPU</i> ), <i>circuitry controlling the</i> <i>interpretation and execution of instructions</i> ], said <i>central</i> <i>processing unit</i> capable of operating at a <i>plurality</i> [ <i>two or</i> <i>more</i> ] of voltages;
(b) a plurality of voltage converters, said plurality of voltage converters supplying a plurality of operational voltages to said central processing system and to the electronic system;	(b) a <i>plurality</i> of <i>voltage converters</i> [ <i>a voltage converter is a circuit which is capable of converting an input voltage to a specified output voltage</i> ], said <i>plurality</i> of <i>voltage converters</i> supplying a <i>plurality</i> of <i>operational voltages</i> [ <i>voltage at which a particular electronic component operates</i> ] to said <i>central processing system</i> [ <i>i.e. central processing unit</i> ] and to the electronic system;
(c) a frequency synthesizer said frequency	(c) a <b>frequency synthesizer</b> [ a circuit capable of generating

## UNITED STATES PATENT NUMBER 5.627.412-CLAIM CHART

(c) a frequency synthesizer, said frequency (c) a *frequency synthesizer* [ a circuit capable of generating

signal of multiple variable frequencies to said central processing unit and to the electronic system; and (d) said central processing unit capable of dynamically switching the supply of operational voltages from said voltage	said <i>frequ</i> signal tha componen successive <b>processing</b> (d) said <b>ce</b> switching operation	re output frequencies from a reference frequency ], ency synthesizer providing a timing control signal [ a t controls the timing of the operation of electronic ts ] of multiple variable frequencies [ two or more frequency values over time ] to said central g unit and to the electronic system; and ntral processing unit capable of dynamically [ switching from one level to another during ] the supply of operational voltages from said voltage and the timing control signal of said frequency
		<i>r</i> supplied to said <i>central processing unit</i> and to the system wherein <i>operational voltages</i> and the <i>timing</i>
system wherein operational voltages and the timing control signals are selected according to the varying power	<i>control sig</i> requireme <i>consumpt</i>	gnals are selected according to the varying power ints of the electronic system such that <i>power</i> <i>ion of the electronic system is minimized</i> [ <i>power</i>
that power consumption of the electronic		on is reduced to the lowest practicable level with the current operating demands ].
system is minimized.		
Claim 2		
2. The dynamically switchable power supply		2. The <i>dynamically switchable power supply</i> of claim
claim 1 wherein said central processing unit capable of operating at 5.0 volts.		wherein said <i>central processing unit</i> is capable of perating at 5.0 volts.
Claim 3		Claim 3
3. The dynamically switchable power supply		The <i>dynamically switchable power supply</i> of claim
claim 1 wherein said central processing unit		wherein said <i>central processing unit</i> is capable of
capable of operating at 3 .3 volts.		perating at 3.3 volts.
Claim 4		Claim 4
4. The dynamically switchable power supply	of 4	. The <i>dynamically switchable power supply</i> of claim
claim 1 wherein said central processing unit		wherein said <i>central processing unit</i> is capable of
capable of operating at 2.7 volts.		perating at 2.7 volts.
Claim 5	(	Claim 5
5. The dynamically switchable power supply	of 5	. The <i>dynamically switchable power supply</i> of claim
claim 1 wherein said plurality of voltage con		wherein said <i>plurality</i> of <i>voltage convertors</i> includes
includes a 5.0 volt converter.		5.0 volt convertor.
Claim 6		Claim 6
6. The dynamically switchable power supply		. The dynamically switchable power supply of claim
claim 1 wherein said plurality of voltage con		wherein said <i>plurality</i> of <i>voltage convertors</i> includes
includes a 3.3 volt converter.		3.3 volt convertor.
Claim 7		Claim 7
7. The dynamically switchable power supply		. The <i>dynamically switchable power supply</i> of claim
claim 1 wherein said plurality of voltage con		wherein said <i>plurality</i> of <i>voltage convertors</i> includes
includes a 2.7 volt converter. Claim 11	Claim	2.7 volt convertor.
11. A method of controlling a dynamically		nethod of controlling a <i>dynamically switchable power</i>
switchable power supply in an electronic		in an electronic system <i>comprising</i> :
system comprising:	supply	in the clock of the comprising.
J	I	

	t a firmt (a) a	anie alle an exacting the surface [ an exacting the surface
(a) nominally operating the system a		ominally operating the system [ operating the system
operational voltage value and a first		rding to its plan or design ] at a first operational voltage
operational frequency value whereby		e and a first <i>operational frequency</i> [ frequency at which
electronic system operates at a first p	•	rticular electronic component operates ] value whereby
level;		lectronic system operates at a first power level;
(b) switching the operational voltage		witching the <i>operational voltage</i> to a second voltage
second voltage value and the operati		e and the <i>operational frequency</i> to a second frequency
frequency to a second frequency value	-	e upon a change in the required <i>operational power</i> [
change in the required operational po	Ť	er at which a particular electronic component operates ]
whereby the electronic system opera		eby the electronic system operates at a second power
second power level; and	level	·
		esetting me operational voltage to the first operational
operational voltage value and the op		ge value and the operational frequency to the first
frequency to the first operational free		ational frequency value whereby the electronic system
value whereby the electronic system	operates opera	ates at the first power level.
at the first power level.		
Claim 12	1 1 1	Claim 12
12. The method or claim 11 further i	•	12. The method or claim 11 further including the step
step of switching the operational vol		of switching the <i>operational voltage</i> to a third voltage
voltage value and the operational fre	1 4	value and the <i>operational frequency</i> to a third
third frequency value upon a change		
operational power whereby the electric	ronic system	operational power whereby the electronic system
operates at a third power level.		operates at a third power level.
Claim 13		Claim 13
13. The method of claim 11 wherein	•	13. The method of claim 11 wherein said switching
step is controlled by a central proces		step is controlled by a <i>central processing unit</i> .
Claim 16	Claim 16	
16. In a portable electronic device	-	le electronic device having electronic circuits
having electronic circuits		<i>powered</i> from a battery power source, a <i>dynamically</i>
operationally powered from a	-	wer supply comprising:
battery power source, a dynamically		
switchable power supply comprising		
(a) a battery for providing	-	or providing <i>operational power</i> to the electronic circuits
operational power to the electronic	of the portable	electronic device;
circuits of the portable electronic		
device;		
(b) a first voltage converter	(b) a first <i>volta</i>	age converter operationally powered by said battery,
operationally powered by said	said first volta	ge converter for providing a first regulated dc supply
battery, said first voltage converter	voltage [ outpu	ut which is set and maintained at a substantially constant
for providing a first regulated dc	voltage ] to the	e electronic circuits of the portable electronic device;
supply voltage to the electronic	~	
circuits of the portable electronic		
device;		
(c) a second voltage converter	(c) a second <i>ve</i>	oltage converter operationally powered by said battery,
operationally powered by said		<i>Itage converter</i> for providing a second <i>regulated dc</i>
battery, said second voltage		to the electronic circuits of the portable electronic
converter for providing a second	device; and	*
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regulated dc supply voltage to the		
electronic circuits of the portable		
electronic device; and		
(d) means for controlling said first	(d) means for controlling said first and said second voltage	
and said second voltage converters	converters [ This is a means plus function limitation. The function of	
wherein said first and said second	this limitation is controlling the first and second voltage converters.	
voltage converters may be	The corresponding structure is a CPU, a microprocessor, a	
	d microcontroller, or a digital signal processor or equivalents thereof ]	
such that the regulated dc supply voltage provided to the electronic	wherein said first and said second <i>voltage converters maybe</i>	
circuits of the portable electronic	<i>dynamically activated or deactivated</i> [ <i>capable of being electronically activated or deactivated during operation</i> ] such that the <i>regulated dc</i>	
device may be thereby selected to	supply voltage provided to the electronic circuits of the portable	
control the operational power	electronic device may be thereby selected to control the <i>operational</i>	
provided by said battery to the	<i>power</i> provided by said battery to the electronic circuits of the portable	
electronic circuits of the portable	electronic device.	
electronic device.		
Claim 17	Claim 17	
17. The dynamically switchable pow	wer 17. The <i>dynamically switchable power supply</i> of claim 16	
supply of claim 16 wherein said con		
	peratively operatively integrated [ included in a larger unit while	
integrated with the electronic circui		
portable electronic device.	of the portable electronic device.	
Claim 18 Claim 18		
18. The dynamically switchable power supply of 18. The <i>dynamically switchable power supply</i> of claim		
claim 17 wherein said central proce		
capable of operating from at least ty	wo dc supply operating from at least two dc supply voltage levels.	
voltage levels. Claim 19	Claim 19	
	19. In a portable electronic device having electronic circuits	
	operationally powered from a battery power source, a dynamically	
-	switchable power supply comprising:	
battery power source, a		
dynamically switchable power		
supply comprising:		
(a) a battery for providing	(a) a battery for providing <i>operational power</i> to the electronic circuits of	
operational power to the electronic		
circuits of the portable electronic		
device;		
(b) a frequency synthesizer for	(b) a <i>frequency synthesizer</i> for providing a <i>variable driving frequency</i> [	
	frequency that controls the timing of the operation of electronic	
	· · ·	
-	electronic circuits of the portable electronic device; and	
and		
(c) means for controlling said	(c) means for controlling said frequency synthesizer [ This is a means-	
riable driving frequency of said synthesizer. The corresponding structure is a CPU, a microprocessor, a microcontroller or a digital signal processor or equivalents thereof 1		
frequency synthesizer may be	microcontroller, or a digital signal processor or equivalents thereof ]	

	wherein the <i>variable driving frequency</i> of said <i>frequency synthesizer</i>
control the operational power	may be thereby <i>dynamically adjusted</i> [ <i>adjusted during operation</i> ] to
provided by said battery to the	control the <i>operational power</i> provided by said battery to the electronic
electronic circuits of the portable	circuits of the portable electronic device.
electronic device.	

Claim 20		Claim 20
20. The dynamically switchable power su		20. The dynamically switchable power supply of claim
claim 19 wherein said controlling means	<b>* * *</b>	19 wherein said <i>controlling means</i> is a <i>central</i>
processing unit operatively integrated wit		processing unit operatively integrated with the
electronic circuits of the portable electron		electronic circuits of the portable electronic device.
Claim 21		Claim 21
21. The dynamically switchable power su	ipply of	21. The dynamically switchable power supply of claim
claim 20 wherein said central processing	unit is	20 wherein said <i>central processing unit</i> is capable of
capable of operating from at least two dc	supply	operating from at least two dc supply voltage levels.
voltage levels.		
Claim 22	Claim22	
22. In a portable electronic device		table electronic device having electronic circuits
having electronic circuits operationally	-	<i>lly powered</i> from a battery power source, a <i>dynamically</i>
powered from a battery power source, a	switchable	power supply comprising:
dynamically switchable power supply		
comprising:		
(a) a battery for providing operational		y for providing <i>operational power</i> to the electronic
power to the electronic circuits of the	circuits of t	he portable electronic device;
portable electronic device;		
• • •		oltage converter operationally powered by said battery,
powered by said battery, said first		<i>ltage converter</i> for providing a first <i>regulated dc</i>
voltage converter for providing a first		<i>age</i> to the electronic circuits of the portable electronic
regulated dc supply voltage to the	device;	
electronic circuits of the portable		
electronic device;	$(d) \circ \mathbf{f}$	and another sizes for providing a unrighted driving
		ency synthesizer for providing a variable driving
a variable driving frequency to the electronic circuits of the portable	device; and	o the electronic circuits of the portable electronic
electronic device; and	device, and	
(e) means for controlling said first and	(a) magns $f$	for controlling said first and said second voltage
÷	-	and said frequency synthesizer [ This is a means plus
e		<i>nitation.</i> The function of this limitation is controlling
	Т	<i>l second voltage converters and the frequency</i>
be dynamically activated or deactivated	•	The corresponding structure is a CPU, a
• •		ssor, a microcontroller, or a digital signal processor or
		<i>thereof</i> ] wherein said first and said second <i>voltage</i>
portable electronic device may be		may be dynamically activated or deactivated such that
L		ed dc supply voltage provided to the electronic circuits
		ble electronic device may be thereby selected and
	-	variable driving frequency of said frequency
		may be thereby <i>dynamically adjusted</i> to control the
•	-	<i>power</i> provided by said battery to the electronic
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circuits of the portable electronic device. circuits of the portable electronic device.

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Claim 23	Claim 23
23. The dynamically switchable power supply of	23. The <i>dynamically switchable power supply</i> of claim
claim 22 wherein said controlling means is a central	22 wherein said <i>controlling means</i> is a <i>central</i>
processing unit operatively integrated with the	processing unit operatively integrated with the
electronic circuits of the portable electronic device.	electronic circuits of the portable electronic device.
Claim 24	Claim 24
24. The dynamically switchable power supply of claim 23 wherein said central processing unit is capable of operating from at least two dc supply voltage levels.	24. The <i>dynamically switchable power supply</i> of claim 23 wherein said <i>central processing unit</i> is capable of operating from at least two dc supply voltage levels.

# EXHIBIT B

## UNITED STATES PATENT NUMBER 5,627,412-GLOSSARY OF TERMS

TERM	DEFINITION
central processing system	central processing unit
central processing unit	( <b>CPU</b> ), circuitry controlling the interpretation and execution of instructions
CPU	central processing unit
controlling means (in Claim	See definition of "means for controlling said first and said second voltage
17)	converters."
controlling means (in Claim	See definition of "means for controlling said frequency synthesizer."
20)	
controlling means (in Claim	See definition of "means for controlling said first and said second voltage
23)	converters and said frequency synthesizer."
dynamically adjusted	adjusted during operation
dynamically switchable	a unit capable of supplying a power output that can be switched from one
power supply	level to another during operation
dynamically switching	switching from one level to another during operation
frequency synthesizer	a circuit capable of generating two or more output frequencies from a
	reference frequency
may be dynamically	capable of being electronically activated or deactivated during operation
activated or deactivated	
means for controlling said	This is a means plus function limitation. The function of this limitation is
first and said second voltage	
converters	structure is a CPU, a microprocessor, a microcontroller, or a digital signal
	processor or equivalents thereof.
means for controlling said	This is a means plus function limitation. The function of this limitation is
first and said second voltage	
converters and said	synthesizer. The corresponding structure is a CPU, a microprocessor, a
frequency synthesizer	microcontroller, or a digital signal processor or equivalents thereof.
means for controlling said	This is a means-plus-function limitation. The function is controlling said
frequency synthesizer	frequency synthesizer. The corresponding structure is a CPU, a
	microprocessor, a microcontroller, or a digital signal processor or equivalents
	thereof.

multiple variable frequencie	nultiple variable frequencies two or more successive frequency values over time		
nominally operating the	operating the system according to its plan or design		
system			
operational frequency	frequency at which a particular electronic component operates		
operational power	power at which a particular electronic component operates		
operationally powered	See definition of "operational power."		
operational voltages	voltage at which a particular electronic component operates		
operatively integrated	included in a larger unit while permitting operation along with		
plurality	two or more		
power consumption of the	power consumption is reduced to the lowest practicable level consistent with		
electronic system is	the current operating demands		
minimized			
regulated dc supply voltage	output which is set and maintained at a substantially constant voltage		
timing control signal	a signal that controls the timing of the operation of electronic components		
variable driving frequency	frequency that controls the timing of the operation of electronic components		
	and that takes on successive values during operation		
voltage converters	a voltage converter is a circuit which is capable of converting an input voltage to a specified output voltage		
	voltage to a specified output voltage		

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