

Check this box if no longer subject to Section 16. Form 4 or Form 5 obligations may continue. See Instruction 1(b).

STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934 or Section 30(h) of the Investment Company Act of 1940

1. Name and Address of Reporting Person*			2. Issuer Name and Ticker or Trading Symbol			5. Relationship of Reporting Person(s) to Issuer (Check all applicable)			
<u>Xiao Deming</u>			<u>MONOLITHIC POWER SYSTEMS INC</u>			Director 10% Owner			
(Last)	(First)	(Middle)	[MPWR]			X Officer (give title below) Other (specify below)			
79 GREAT OAKS BLVD			3. Date of Earliest Transaction (Month/Day/Year)			Pres. of MPS Asia Operations			
8/09/2012			4. If Amendment, Date of Original Filed (Month/Day/Year)			6. Individual or Joint/Group Filing (Check Applicable Line)			
(Street)	(City)	(State)	(Zip)				X Form filed by One Reporting Person		
SAN JOSE	CA	95119				Form filed by More than One Reporting Person			

Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned

1. Title of Security (Instr. 3)	2. Transaction Date (Month/Day/Year)	2A. Deemed Execution Date, if any (Month/Day/Year)	3. Transaction Code (Instr. 8)		4. Securities Acquired (A) or Disposed Of (D) (Instr. 3, 4 and 5)			5. Amount of Securities Beneficially Owned Following Reported Transaction(s) (Instr. 3 and 4)	6. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	7. Nature of Indirect Beneficial Ownership (Instr. 4)
			Code	V	Amount	(A) or (D)	Price			
Common Stock	08/09/2012		S ⁽¹⁾		1,915	D	\$20.46	126,986	D	
Common Stock	08/10/2012		S ⁽¹⁾		1,786	D	\$20.7344	125,200	D	
Common Stock	08/09/2012		M ⁽²⁾		12,108	A	\$8.05	22,108	I	by Spouse
Common Stock	08/09/2012		S ⁽²⁾		12,108	D	\$20.9	10,000	I	by Spouse
Common Stock	08/09/2012		M ⁽²⁾		14,329	A	\$8.05	24,329	I	by Spouse
Common Stock	08/09/2012		S ⁽²⁾		14,329	D	\$20.9	10,000	I	by Spouse

Table II - Derivative Securities Acquired, Disposed of, or Beneficially Owned (e.g., puts, calls, warrants, options, convertible securities)

1. Title of Derivative Security (Instr. 3)	2. Conversion or Exercise Price of Derivative Security	3. Transaction Date (Month/Day/Year)	3A. Deemed Execution Date, if any (Month/Day/Year)	4. Transaction Code (Instr. 8)		5. Number of Derivative Securities Acquired (A) or Disposed of (D) (Instr. 3, 4 and 5)	6. Date Exercisable and Expiration Date (Month/Day/Year)		7. Title and Amount of Securities Underlying Derivative Security (Instr. 3 and 4)	8. Price of Derivative Security (Instr. 5)	9. Number of Derivative Securities Beneficially Owned Following Reported Transaction(s) (Instr. 4)	10. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	11. Nature of Indirect Beneficial Ownership (Instr. 4)	
				Code	V		Date Exercisable	Expiration Date						Title
Incentive Stock Option (right to buy)	\$8.05	08/09/2012		M ⁽²⁾		41,329	03/28/2006	04/26/2015	Common Stock	41,329	\$0.0	0.0	I	by Spouse
Non-Qualified Stock Option (right to buy)	\$8.05	08/09/2012		M ⁽²⁾		12,108	03/28/2005	04/26/2015	Common Stock	12,108	\$0.0	0.0	I	by Spouse

Explanation of Responses:

- 1. Shares sold to pay tax obligations resulting from the vesting of restricted stock units.
- 2. In accordance with the reporting person's 10b5-1 trading plan.

By: Meera Rao For: Deming 08/10/2012
Xiao

** Signature of Reporting Person Date

Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly.

* If the form is filed by more than one reporting person, see Instruction 4 (b)(v).

** Intentional misstatements or omissions of facts constitute Federal Criminal Violations See 18 U.S.C. 1001 and 15 U.S.C. 78ff(a).

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, see Instruction 6 for procedure.

Persons who respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB Number.