

Xiao Deming  
Form 4  
August 10, 2012

**FORM 4**

**UNITED STATES SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549**

OMB APPROVAL

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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 OF SECURITIES**

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934, Section 17(a) of the Public Utility Holding Company Act of 1935 or Section 30(h) of the Investment Company Act of 1940

(Print or Type Responses)

1. Name and Address of Reporting Person \*  
Xiao Deming

2. Issuer Name and Ticker or Trading Symbol  
MONOLITHIC POWER SYSTEMS INC [MPWR]

5. Relationship of Reporting Person(s) to Issuer  
(Check all applicable)

(Last) (First) (Middle)  
79 GREAT OAKS BLVD  
(Street)

3. Date of Earliest Transaction (Month/Day/Year)  
08/09/2012

\_\_\_\_ Director \_\_\_\_\_ 10% Owner  
 Officer (give title below) \_\_\_\_\_ Other (specify below)  
Pres. of MPS Asia Operations

SAN JOSE, CA 95119

4. If Amendment, Date Original Filed(Month/Day/Year)

6. Individual or Joint/Group Filing(Check Applicable Line)  
 Form filed by One Reporting Person  
 Form filed by More than One Reporting Person

(City) (State) (Zip)

**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 <sup>(1)</sup>	1,915 D \$ 20.46	126,986	D	
Common Stock	08/10/2012		S <sup>(1)</sup>	1,786 D \$ 20.7344	125,200	D	
Common Stock	08/09/2012		M <sup>(2)</sup>	12,108 A \$ 8.05	22,108	I	by Spouse
Common Stock	08/09/2012		S <sup>(2)</sup>	12,108 D \$ 20.9	10,000	I	by Spouse
Common Stock	08/09/2012		M <sup>(2)</sup>	14,329 A \$ 8.05	24,329	I	by Spouse

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Common Stock 08/09/2012 S<sup>(2)</sup> 14,329 D \$ 20.9 10,000 I by Spouse

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

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 control number.

SEC 1474 (9-02)

**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 Underlying Security (Instr. 3 and 4)
Incentive Stock Option (right to buy)	\$ 8.05	08/09/2012		M <sup>(2)</sup>	41,329	03/28/2006 04/26/2015	Common Stock 41
Non-Qualified Stock Option (right to buy)	\$ 8.05	08/09/2012		M <sup>(2)</sup>	12,108	03/28/2005 04/26/2015	Common Stock 12

### Reporting Owners

Reporting Owner Name / Address	Relationships			
	Director	10% Owner	Officer	Other
Xiao Deming 79 GREAT OAKS BLVD SAN JOSE, CA 95119			Pres. of MPS Asia Operations	

### Signatures

By: Meera Rao For: 08/10/2012  
Deming Xiao  
\*\*Signature of Reporting Person Date

### Explanation of Responses:

- \* 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).
- (1) Shares sold to pay tax obligations resulting from the vesting of restricted stock units.

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(2) In accordance with the reporting person's 10b5-1 trading plan.

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

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