

Xiao Deming  
Form 4  
April 06, 2010

**FORM 4**

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

OMB APPROVAL

OMB Number: 3235-0287  
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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)  
6409 GUADALUPE MINES ROAD  
(Street)

3. Date of Earliest Transaction (Month/Day/Year)  
04/05/2010

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

SAN JOSE, CA 95120  
(City) (State) (Zip)

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

**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 Ownership (Instr. 4)
				Code V Amount (A) or (D) Price			
Common Stock	02/16/2010		J <sup>(1)</sup>	V 1,112 A \$ 18.411	48,940	D	
Common Stock	04/05/2010		S <sup>(2)</sup>	2,766 D \$ 22.65	106,174	D	
Common Stock					15,610	I	by Spouse

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

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number.

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

Table with 10 columns: 1. Title of Derivative Security, 2. Conversion or Exercise Price of Derivative Security, 3. Transaction Date, 3A. Deemed Execution Date, 4. Transaction Code, 5. Number of Derivative Securities, 6. Date Exercisable and Expiration Date, 7. Title and Amount of Underlying Securities, 8. Price of Derivative Security, 9. Number of Derivative Securities. Includes sub-headers for Date Exercisable and Expiration Date, and Amount or Number of Shares.

Reporting Owners

Table with 2 main columns: Reporting Owner Name / Address and Relationships. Relationships sub-headers include Director, 10% Owner, Officer, and Other. Example entry for Xiao Deming at 6409 GUADALUPE MINES ROAD, SAN JOSE, CA 95120, with relationship: Pres. of MPS Asia Operations.

Signatures

By: Rick Neely For: Deming Xiao 04/06/2010
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) Acquired through the Company's qualified ESPP program.
(2) Shares sold to pay tax obligations resulting from the vesting of restricted stock.

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, see Instruction 6 for procedure. Potential persons who are to respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB number.