

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 ⁽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 |

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Common Stock 08/09/2012 S⁽²⁾ 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.

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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 ⁽²⁾ | 41,329 | 03/28/2006 04/26/2015 | Common Stock 41,329 |
| 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 |

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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