



	MGT-MDE-3-003		
	V1.02		
			2024-12-12



1

1.1

1.2

	Pl c()
M:5000, M:5100	
M:Creator	M:5000 M
	M:Creator

2

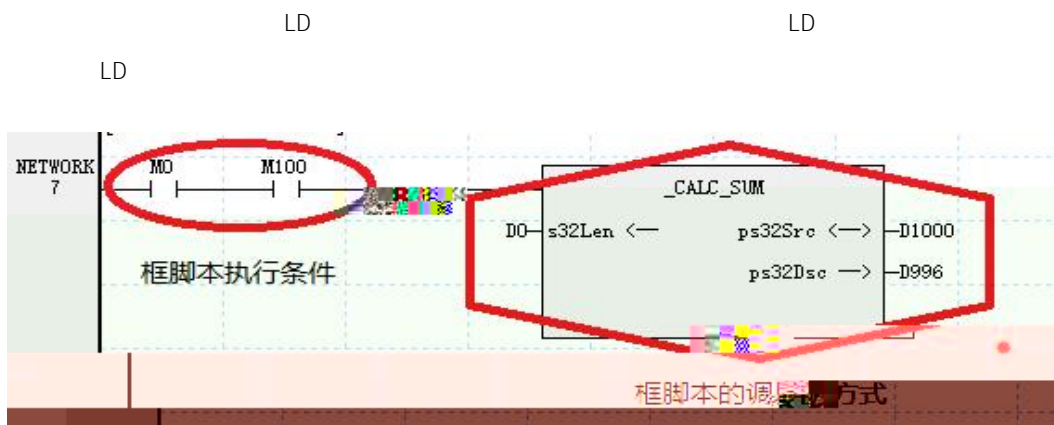
2.1

- M:5x00 Pl c
- 1> C C ,
- 2> Pl c , X, Y, M S, SM T, C D, R SD, Z, F
-

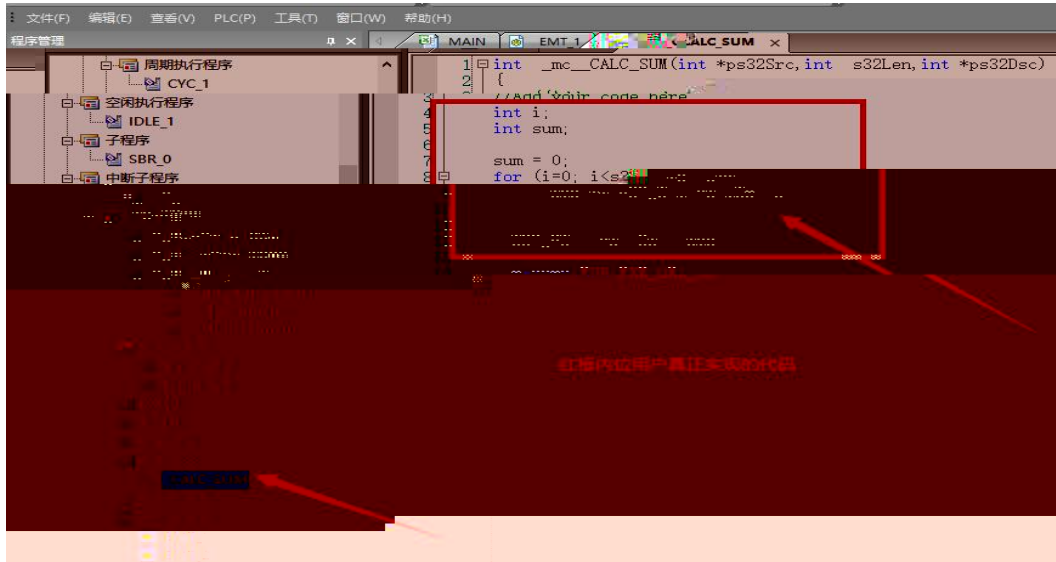
- 3> X , D
- 4> ANSI C , C
- 5> C ;
- 6>

2.2

1>

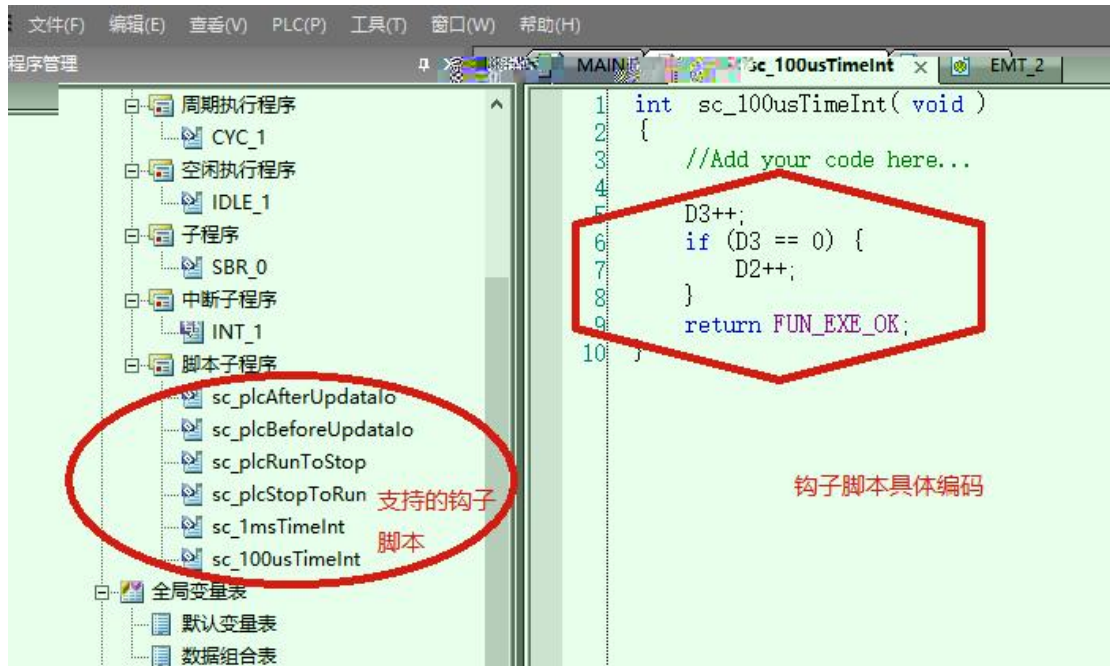


1



2

1>



3

2.3

C

pl c

export_nodule.h	Pl c
user_common.c	
user_common.h	

3

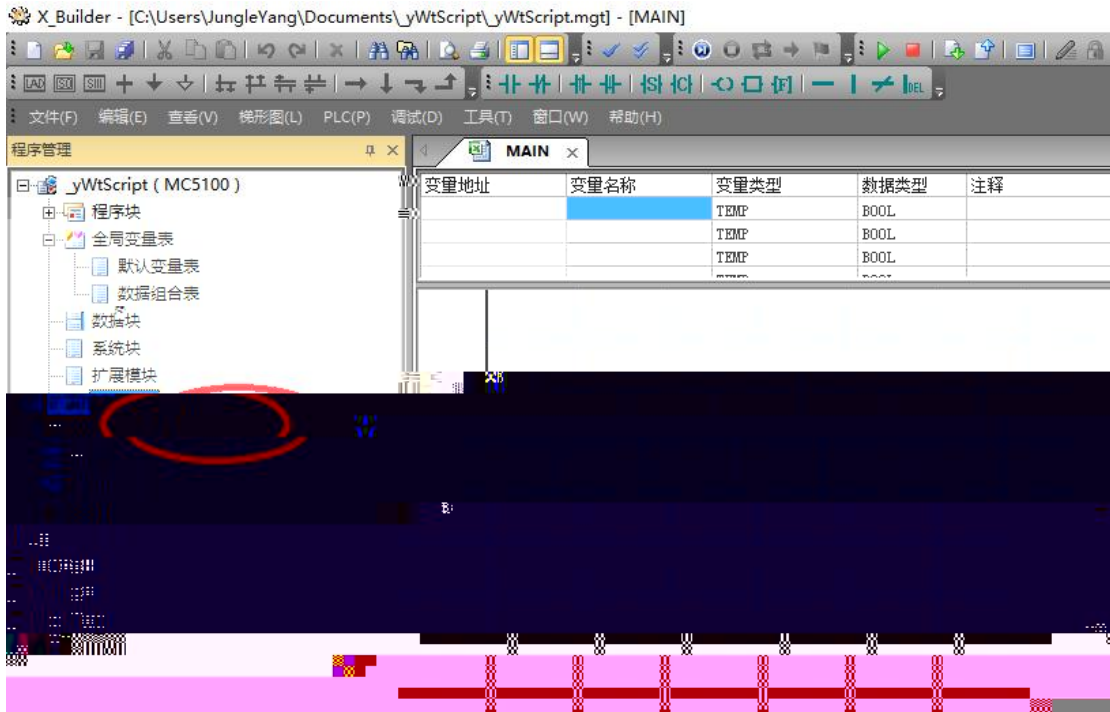
xBuild

C

D996() D1000 20000 D998()

3.1

" " " " " "

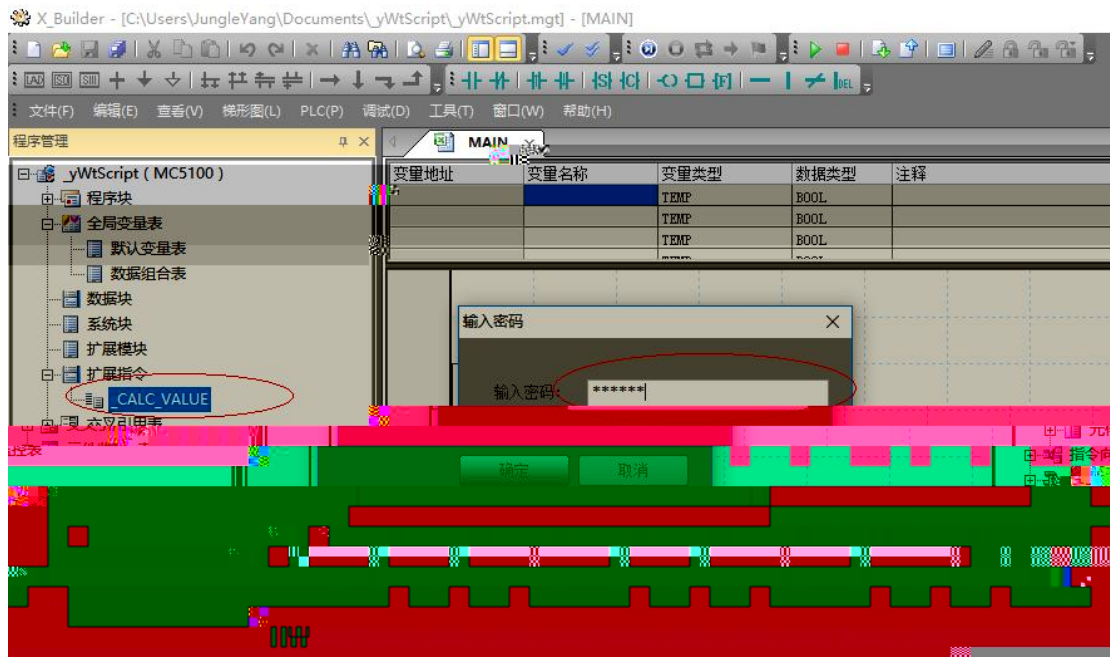


3

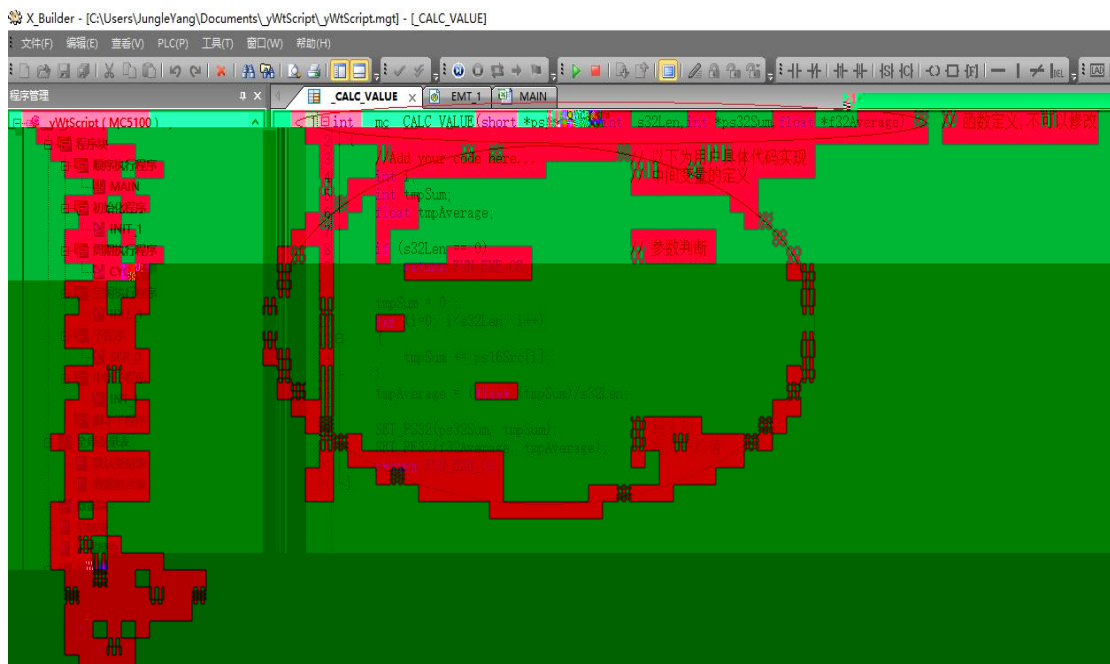
3.6

6

3.3

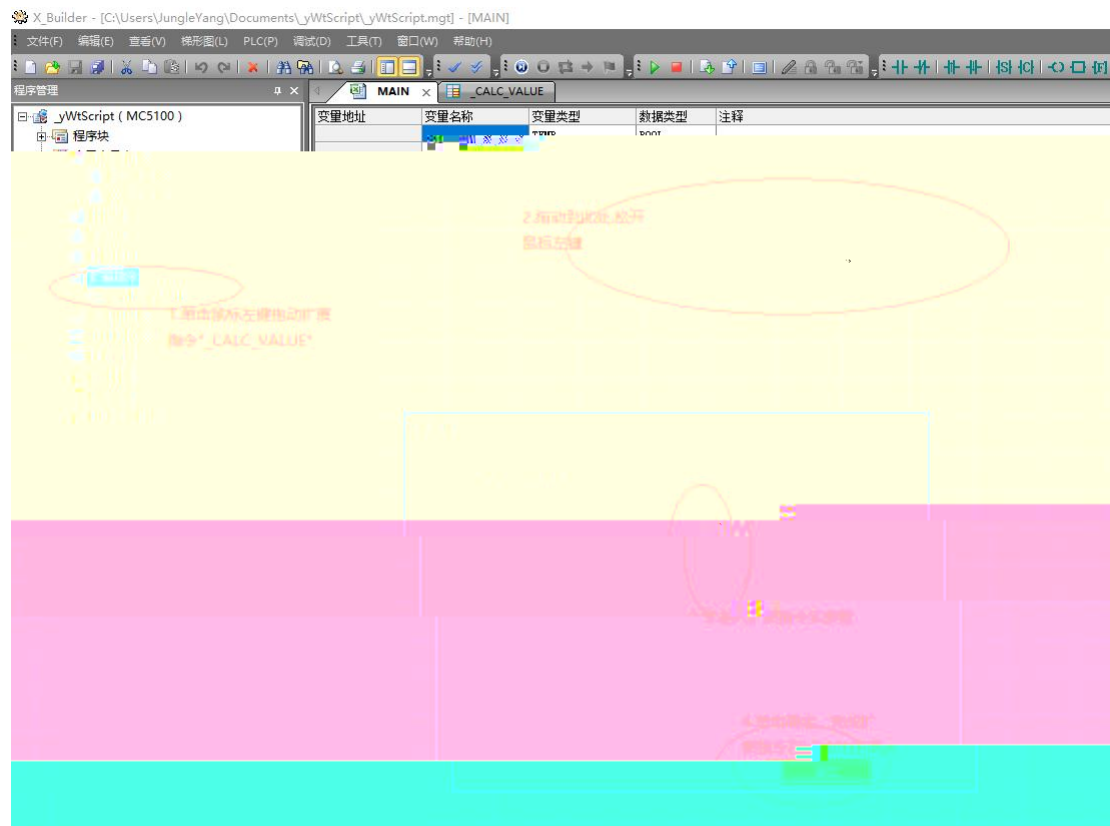


6

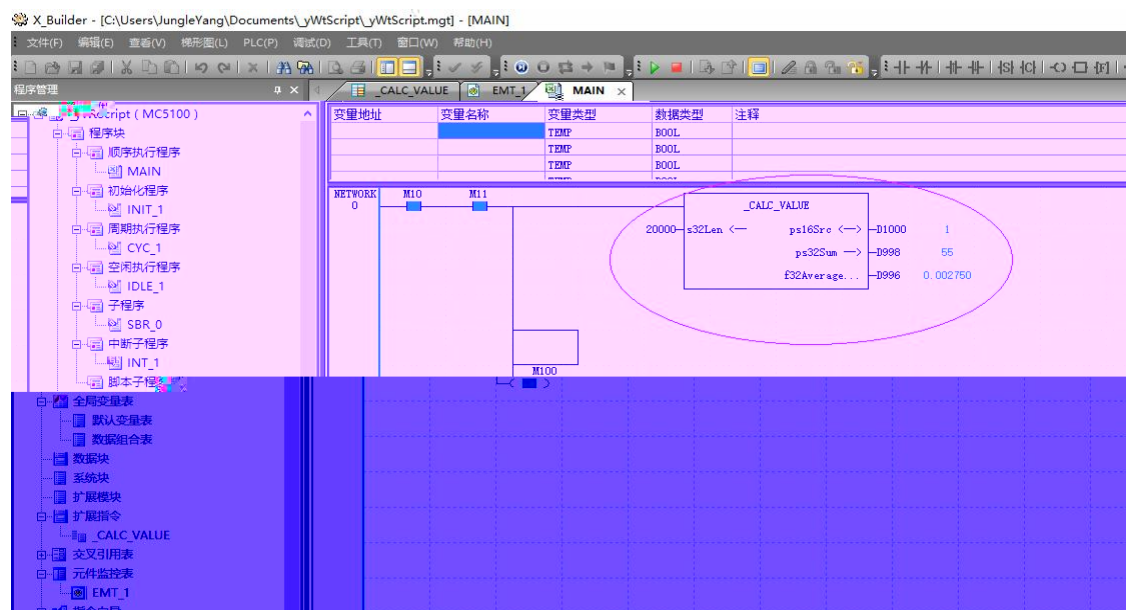


7

3.4

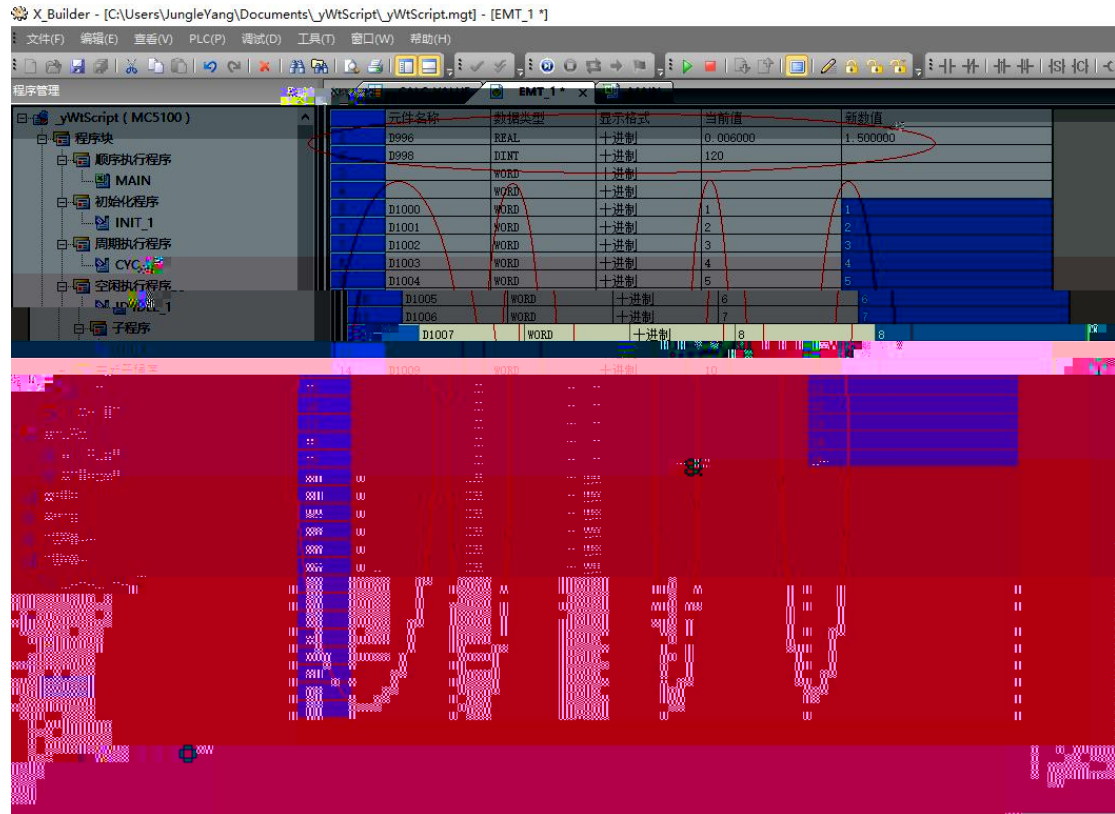


8



9

3.5



10

4

4.1

4.1.1 X


```
int _mc_BitOp()
{
    //Add your code here...
    if ( X4 )
        Y10 = 1;
```

8进制编号

4.1.2 Y


```
int _mc_BitOp()
{
    //Add your code here...
    if ( X4 )
    {
        Y10 = 1;
```

Y位元件输入，编号位8进制

4.1.3 SM


```
int _mc_BitOp()
{
    //Add your code here...
    if ( X4 )
    {
        SM[40]=1;
        SM[41]=1;
```

SM位元件支持SMxx及SM[xx]

4.1.4 S


```
int _mc_BitOp()  
{  
    //Add your code here...  
    if ( X4 )  
    {  
        S[100]=1;  
        S101 = 1;  
    }  
}
```

S位元件支持Sxx及S[xx]输入，编号为十进制

4.1.5 T


```
int _mc_BitOp()  
{  
    //Add your code here...  
    if (T10)  
    {  
        D[102] =20;  
    }  
}
```

T元件位变量，支持!xx及!|xx|输入，十进制编号

4.1.6 C


```
int _mc_BitOp()  
{  
    //Add your code here...  
    if (Cxx)  
    {  
        C[xx]=1;  
    }  
}
```

C位元件输入格式支持!xx及C[xx]十进制编号

4.1.7 M


```
int _mc_BitOp()  
{  
    //Add your code here...
```

```
    if ( X4 )  
    {  
        M位元件支持M及M(x)输入! 详细编品
```

4.1.8 SD


```
int _mc_BitOp()  
{  
    //Add your code here...
```

```
    if ( X4 )  
    {  
        D110 = SD101;  
        D[111] = SD [102];
```

SD支持SDxx及SD[xx]

4.1.9 Z


```
int _mc_BitOp()  
{  
    //Add your code here...
```

```
    if ( X4 )  
    {  
        Z110 = 10;  
        Z[4095] = 100;
```

Z字元件支持Zxx及Z[xx]读写操作

4. 1. 10 D


```
int _mc__BitOp()  
{  
    //Add your code here...  
    if ( X4 )  
    {  
        D110 = SD101;  
        D[111] = SD [102];  
    }  
}
```

D字单元直接读写支持Dxx及D[xx]

4. 1. 11 R


```
int _mc__BitOp()  
{  
    //Add your code here...  
    if ( X4 )  
    {  
        R[4095] = 100;  
    }  
}
```

R字变量支持Rxx及R[xy]直接读写操作

4. 2

4. 2. 1

	int GET_DD(unsigned short stNum)
	“ ”
	stNum

--	--

```
int _mc_BitOp()
{
    //Add your code here...
    if ( X4 )
    {
        long tmp;
        tmp = GET_DD(1000);
    }
}
```

读取D1000长整型数据到tmp

4.2.2

	void SET_DD(unsigned short stNum, int val)
	" "

```
int _mc_BitUp()
{
    //Add your code here...
    if ( X4 )
    {
        long tmp;
        tmp = GET_DD(1000);
        SET_DD(1500, tmp);
    }
}
```

将tmp的值写入到长整数D1500中

4.2.3

	int GET_MultiDD(int stNum, int len, int *ps32Dsc)
	" "
	stNum
	Len :
	ps32Dsc:

4.2.4

	int SET_MultiDD(int stNum, int len, int *ps32Src)
	" "
	stNum
	Len :

	ps32Dsc:	D

The screenshot shows a debugger interface. On the left, assembly code is visible with comments in Chinese. The middle section shows a register window with registers D300 through D310, each containing a decimal value (300, 300, 300, 400, 500, 600). The right section shows a disassembled instruction: `MOV EAX, 0`. A red circle highlights the value 0 in the register window and the value 0 in the instruction. Below the registers, a diagram shows a box labeled `_DwordData` with a `dWORD` field pointing to `D400` and a value of `0`.

```

1          GET_Miti DD(int stNum int len, int *ps32Dsc)
SET_Miti DD(int stNum int len, int *ps32Src)          D
              dWORD    D400          D400          10

2          int *ps32Dsc  int *ps32Src

```

4. 2. 5

	float GET_FD(unsigned short stNum)
	" "
	stNum

4.2.6

	void SET_FD(unsigned short stNum, float val)
	" "

```
int _mc_DwordData(OUT int32 *dWORD)
{
    //Add your code here...
    uchar utmp;
    int32 *dtmp;
    float fTmp, *pfTmp;
    fTmp = GET_FD(600);
    SET_FD(700, fTmp);
```

读取d600内浮点数存入变量fTmp中

将浮点数fTmp的值写入D700中

4.2.7

	int GET_MultiFD(int stNum, int len, float *pf32Dsc)
	" "
	stNum
	Len :
	ps32Dsc:

4.2.8

	int SET_MultiFD(int stNum, int len, float *pf32Src)
	" "
	stNum
	Len :
	ps32Dsc: D

```

int _mc_DwordData(OUT int32 *dWORD)
{
    //Add your code here...
    uchar utmp;
    int32 *dtmp;
    float fTmp; *pfTmp;
    int i = 610;
    GET_MutiFD(i, 5, pfTmp);
    SET_MutiFD(i+20.5, pfTmp);
}

```

读取从D610开始的5个浮点数,存入指针变量pfTmp中
 将指针变量pfTmp中连续5个浮点数存入D630开始地址中

4.2.9

	int GET_DR(unsigned short stNum)
	" "
	stNum R

4.2.10

	void SET_DR(unsigned short stNum, int val)
	" "

4.2.11

	int GET_MutiDR(int stNum, int len, int *ps32Dsc)
	" "
	stNum
	Len :
	ps32Dsc:

4. 2. 16

	int SET_Miti FR(int stNum, int len, float *pf32Src)
	" "
	stNum
	Len :
	ps32Dsc: R

4. 2. 17

	int GET_DF(int stNum)
	" "
	stNum F

4. 2. 18

	void SET_DF(int stNum, int val)
	" "

4. 2. 19

	int GET_Miti DF(int stNum, int len, int *ps32Dsc)
	" "

	stNum
	Len :
	ps32Dsc:

4. 2. 20

	int SET_Miti DF(int stNum, int len, int *ps32Src)
	" "
	stNum
	Len :
	ps32Dsc: F

4. 2. 21


	float GET_FF(unsigned short stNum)
	" "
	stNum F

4. 2. 22

	void SET_FF(unsigned short stNum, float val)
	" "


4. 2. 26

	void SET_DF0(int stNum, int val)
	void SET_DF1(int stNum, int val)
	void SET_DF2(int stNum, int val)
	void SET_DF3(int stNum, int val)
	void SET_DF4(int stNum, int val)
	void SET_DF5(int stNum, int val)
	void SET_DF6(int stNum, int val)
	void SET_DF7(int stNum, int val)
	void SET_DF8(int stNum, int val)
	void SET_DF9(int stNum, int val)
	" "



4. 2. 27

	int GET_MultiDF0(int stNum, int len, int *ps32Dsc)
	int GET_MultiDF1(int stNum, int len, int *ps32Dsc)
	int GET_MultiDF2(int stNum, int len, int *ps32Dsc)
	int GET_MultiDF3(int stNum, int len, int *ps32Dsc)
	int GET_MultiDF4(int stNum, int len, int *ps32Dsc)
	int GET_MultiDF5(int stNum, int len, int *ps32Dsc)
	int GET_MultiDF6(int stNum, int len, int *ps32Dsc)
	int GET_MultiDF7(int stNum, int len, int *ps32Dsc)
	int GET_MultiDF8(int stNum, int len, int *ps32Dsc)
	int GET_MultiDF9(int stNum, int len, int *ps32Dsc)
	" "
	stNum
	Len :
	ps32Dsc:



4. 2. 28

	int SET_MultiDF0(int stNum, int len, int *ps32Src)
	int SET_MultiDF1(int stNum, int len, int *ps32Src)
	int SET_MultiDF2(int stNum, int len, int *ps32Src)
	int SET_MultiDF3(int stNum, int len, int *ps32Src)
	int SET_MultiDF4(int stNum, int len, int *ps32Src)
	int SET_MultiDF5(int stNum, int len, int *ps32Src)
	int SET_MultiDF6(int stNum, int len, int *ps32Src)
	int SET_MultiDF7(int stNum, int len, int *ps32Src)
	int SET_MultiDF8(int stNum, int len, int *ps32Src)
	int SET_MultiDF9(int stNum, int len, int *ps32Src)
	" "
	stNum
	Len :
	ps32Dsc: F

4. 2. 29

	float GET_FF0(unsigned short stNum)
	float GET_FF1(unsigned short stNum)
	float GET_FF2(unsigned short stNum)
	float GET_FF3(unsigned short stNum)
	float GET_FF4(unsigned short stNum)
	float GET_FF5(unsigned short stNum)
	float GET_FF6(unsigned short stNum)
	float GET_FF7(unsigned short stNum)
	float GET_FF8(unsigned short stNum)
	float GET_FF9(unsigned short stNum)
	" "
	stNum Fx

```

#define ID *(int32 *)&D
#define FD *(float *)&D
#define DR *(int32 *)&R
int _mc_pointerOP(IN int32 InPra, IN_OUT uint16 *IOPra, OUT uint16 *OPra)
{
    //Add your code here...

    int *Adr1,*Adr2,Adr3 = 620;
    long dInt1,*dInt2;

    float fData1,*fData2;
    float fTemp = 568.12;
    long DTemp = 654321;
    long temp;

    Adr1 = &D600;
    Adr2 = &R550;
}

```

写入目标寄存器指定的地址
被写数据为立即数

4. 2. 36

	int GET_PS32(int *ps32Src)
	ps32Src:

```

#define ID *(int32 *)&D
#define FD *(float *)&D
#define DR *(int32 *)&R
int _mc_pointerOP(IN int32 InPra, IN_OUT uint16 *IOPra, OUT uint16 *OPra)
{
    //Add your code here...

    int *Adr1,*Adr2,Adr3 = 620;
    long dInt1,*dInt2;

    float fData1,*fData2;
    float fTemp = 568.12;
    long DTemp = 654321;
    long temp;

    Adr1 = &D600;
    Adr2 = &R550;

    GET_PS32(Adr1, fTemp);
    dInt1 = GET_PS32(&PS=1);
    GET_PS32(Adr1, dInt1);
}

```

操作数为指向地址的指针

GET_PS32(Adr1, fTemp); //操作数为指针，操作数为立即数，操作数为指向地址（立即数地址）
dInt1 = GET_PS32(&PS=1); //操作数为立即数，操作数为指向地址（立即数地址）
GET_PS32(Adr1, dInt1); //操作数为立即数，操作数为指向地址（立即数地址）

4. 2. 37

	int GET_S32(int s32Src)
	s32Src:


```

#define DD *(int32 *)&D
#define FD *(float *)&D
#define ...

// ...

int
long

float
float
long
long

SET_PS32
uint1 = GET_PS32(Addr), //从指针IOPr指向的地址的值读出来, 赋给dInt1
SET_PS32(Addr+1, dInt1); //将dInt1的值经大小端调整后赋给指针(Addr+1)指向的地址
dInt1 = 654321;
temp = GET_S32(dInt1); //将十进制dInt1的值经大小端调整后转换为uint16_t
uint16_t u = temp; //将经过大小端调整的十进制整数16位值直接赋给D650
dInt1 *= -2;
SET_D6(Addr, dInt1&10); //将dInt1经大小端调整后赋给指针Addr指向的D6地址

```

4. 2. 38

	void SET_PU32(unsigned int *pu32Dsc, unsigned int u32Src)
	u32Src pu32Dsc
	u32Src:
	pu32Dsc:

4. 2. 39

	unsigned int GET_PU32(unsigned int *pu32Src)
	pu32Src:

4. 2. 40

	unsigned int GET_U32(unsigned int u32Src)
	u32Src:

```

#define DD *(int32 *)&D
#define FD *(float *)&D
#define GET_U32(addr) (*(uint32_t *)addr)
#define GET_S32(addr) (*(int32_t *)addr)
#define GET_U16(addr) (*(uint16_t *)addr)
#define GET_S16(addr) (*(int16_t *)addr)
#define GET_U8(addr) (*(uint8_t *)addr)
#define GET_S8(addr) (*(int8_t *)addr)

int
long
float
float
long
long

GET_U32
//将指针IOPrs指向的地址的值读出来，赋给dInt1
//将dInt1的值经大小端调整后赋给指针（Adr+1）指向的地址
dInt1 = GET_U32(IOPrs);
SET_PS32(Adr+1, dInt1);
dInt1 = -654321;
temp = GET_S32(dInt1); //将十进制dInt1的值经大小端调整后赋给变量Temp
//将经过大小端调整的十进制结果Temp的值直接赋给D650
dInt1 *= -2;
SET_DS(Adr+3, dInt1&10); //将dInt1+3后的值经大小端调整后赋给指针IOPrs指向的地址
//将dInt1+3后的值经大小端调整后赋给指针IOPrs指向的地址

```

4. 2. 41

	void SET_PF32(float *pf32Dsc, float f32Src)
	f32Src pf32Dsc
	f32Src:
	pf32Dsc:

4. 2. 42

	float GET_PF32(float *pf32Src)
	pf32Src:

5

5.1.1

	unsigned short _ycrcModbus(unsigned char *data, unsigned int length)
	data: Crc
	Length: Crc

5.1.2

	unsigned short _ycrcCi tt(unsigned char *ptr, unsigned int len)
	data: Crc
	Length: Crc

6

The screenshot displays a software development environment with a code editor and a dialog box. The code editor shows the following code:

```
10 #define *int32*&D
11 #define F3 *(float*)&D
12 #define DR *(int32*)&R
13 int _mc_pointerOP(IN int
14 {
15 //Add your code here..
16
17 int *Adr1,*Adr2,Adr3 =
18 long dInt1,*dInt2;
19
20
21 float fData1,*fData2;
22 float fTemp = 568.12;
23 long DTemp = 654321,dI
24 long temp;
25 short sImp =123;
26
27 Adr1 = &D600;
28 Adr2 = &R550;
29
30 SET_PU32(Adr2,sImp*200
31 SET_PU32(Adr1+20,dImp)
32
33 fData1 = GET_F32(fTemp
34 FD[40] = fData1 ;
35 SET_PF32(Adr2+10,100.1
36 fTemp=GET_PF32(Adr2+10
37 SET_PF32(Adr2+12,fTemp
38
```

The dialog box, titled "导出自定义指令" (Export Custom Commands), contains the following elements:

- 标题: 导出的自定义程序 (Exported Custom Program)
- 目录: 自定义程序包名称 (Custom Program Package Name)
- 保存的路径: 保存的路径 (Save Path)
- 复选框列表: BitOp, DwordData, FmemoryOp, PointerOp

Red arrows point to the "自定义程序包名称" and "保存的路径" fields, with the label "导出程序包名称" (Export Program Package Name) and "保存的路径" (Save Path) respectively. Another red arrow points to the "自定义程序" field with the label "勾选要导出的自定义程序" (Select Custom Programs to Export).