



Beijing Winner Microelectronics Co., Ltd.

WM_W60X_QFLASH Management Guide

V1.2

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V1.0	2018/9/6	Initial Release	Cuiych	
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1 Introduction

1.1 Purpose

This document describes the management of QFLASH integrated in W60X.

1.2 Readers

For SDK developers, testers, and final users.

1.3 Abbreviations and acronyms

No.	Term/Abbreviation	Explain/Definition
1	QFLASH	W60X inner Quad-SPI FLASH
2	IMG	Image
3	RF	Radio Frequency
4	MAC	Media Access Control
5	SECBOOT	Second Boot
6	ROM	Read-Only Memory
7	UPD	Upgrade area

1.4 Reference

None

2 QFLASH Space Management

Address Space: 0x8000000-0x80FFFFFF, size 1MByte

Parameters Management:

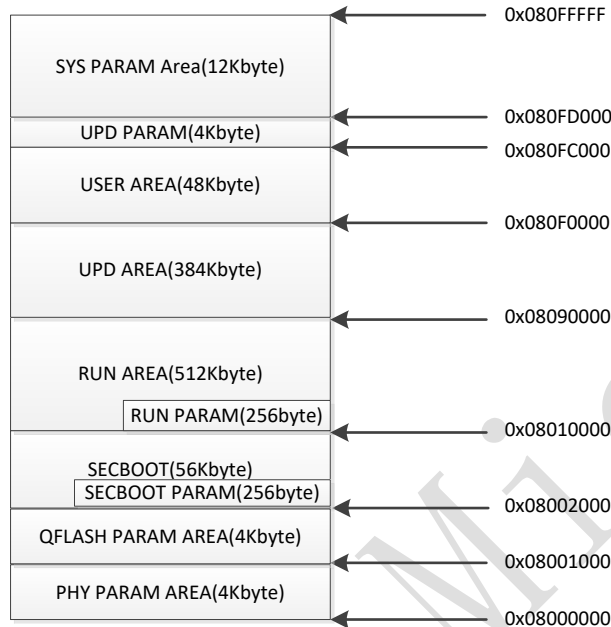


Figure 2-1

2.1 Physical Layer Parameter Space

Address Space: 0x8000000-0x8000FFF, size 4Kbyte

Parameter Content:

MAC address and RF parameters.

Parameters Arrangement:

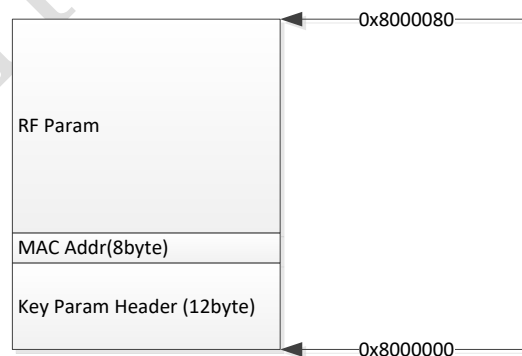


Figure 2-2

2.2 QFLASH Parameter Space

Address Space: 0x8001000-0x8001FFF, size 4KByte

Parameter Content:

QFLASH parameter header, Security Level, chip ID and QFLASH parameters.

Parameter Arrangement:

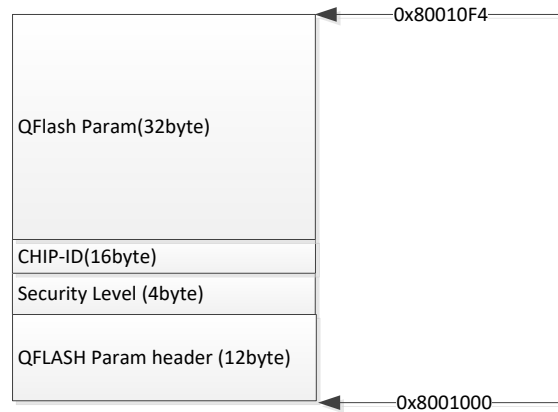


Figure 2-3

2.3 SECBOOT Parameter Space

Address Space: 0x8002000-0x80020FF, size 256Byte

Parameter Content:

Secboot image startup parameter and checksum value.

Parameter Arrangement:

MAGIC Number:4byte	
Image Type:2byte	reserved:2byte
Image address (SECBOOT startup address) :4byte	
Image Length:4byte	
Original Image checksum:4byte	
reserved:4byte	
reserved:4byte	
reserved:4byte	
reserved:4byte	
Version Number:16byte	
Header Checksum:4byte	

2.4 SECBOOT Storage Address

Address Space: 0x8002100-0x8009FFF, size 58KByte -256Byte

Parameter Content:

SECBOOT Image

Parameter Arrangement:

Plain SECBOOT Image

2.5 Run-time Image Parameter Space

Address Space: 0x8010000-0x80100FF, size 256Byte

Parameter Content:

Run-time image startup parameter and checksum value.

Parameter Arrangement:

MAGIC Number:4byte	
Image Type:2byte	Zip Type:2byte
Run-time Image address:4byte	
Run-time Image Length:4byte	
Run-time Image checksum:4byte	
Upgrad image address:4byte	
Upgrad Image Length:4byte	
Upgrad Image Checksum:4byte	
Image Update Number (one of choice conditions for starting IMG): 4byte	
Version Number:16byte	
Header Checksum:4byte	

2.6 Run-time Image Storage Space

Address Space: 0x8010100-0x808FFFF, size 512KByte-256Byte

Parameter Content:

Plain run-time Image

2.7 Upgrade Image Storage Space

Address Space: 0x8090000-0x80EFFFF, size 384KByte

Parameter Content:

Compressed image file for OTA upgrade.

2.8 User Parameter Space

Address Space: 0x80F0000-0x80FBFFF, size 48KByte

Parameter Content:

For user to store self-defined parameter.

The size of user parameter space is dependent on the size of image.

When the image size is less than 512KByte, user's parameter size can increase.

See < WM_W60X_Parameter Space Guide >

Parameter Arrangement:

Self-defined by user.

2.9 Upgrade Image Parameter Space

Address Space: 0x80FC000-0x80FCFFF, size 4KByte

Parameter Content:

The header of compressed Image for OTA

Parameter Arrangement:

MAGIC Number:4byte	
Image Type:2byte	Zip Type:2byte
Run-time Image address:4byte	
Run-time Image Length:4byte	
Run-time Image checksum:4byte	
Upgrade image address:4byte	
Upgrade Image Length:4byte	
Upgrade Image Checksum:4byte	
Image Update Number (one of choice conditions for starting IMG): 4byte	
Version Number:16byte	
Header Checksum:4byte	

2.10 System Parameter Space

Address Space: 0x80FD000-0x80FFFFFF, size 12KByte

Parameter Content:

The parameters for system running.

Parameter Arrangement:

MAGIC Number:4byte	
PARTITION_NUM:2byte	MODIFY_CNT:2byte
RESERVED:4byte	
RESERVED:2byte	Length:2byte (size of total parameters, include CRC value)
Data Content ()	
CRC Value:4byte (the content value before CRC)	

- (1) 1st area of system parameter: 0x80FD000-0x80FDFFF
- (2) 2nd area of system parameter: 0x80FE000-0x80FEFFF
- (3) 3rd area of system parameter: 0x80FF000-0x80FFFFF