Installation ManualInstallation Manual

UNI92K-4DMUNI92K-4DMW

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| --- |
| ***UNI92K - UFS*** |
| ***Software Architecture*** |
| SRS Rev. 0.01 |



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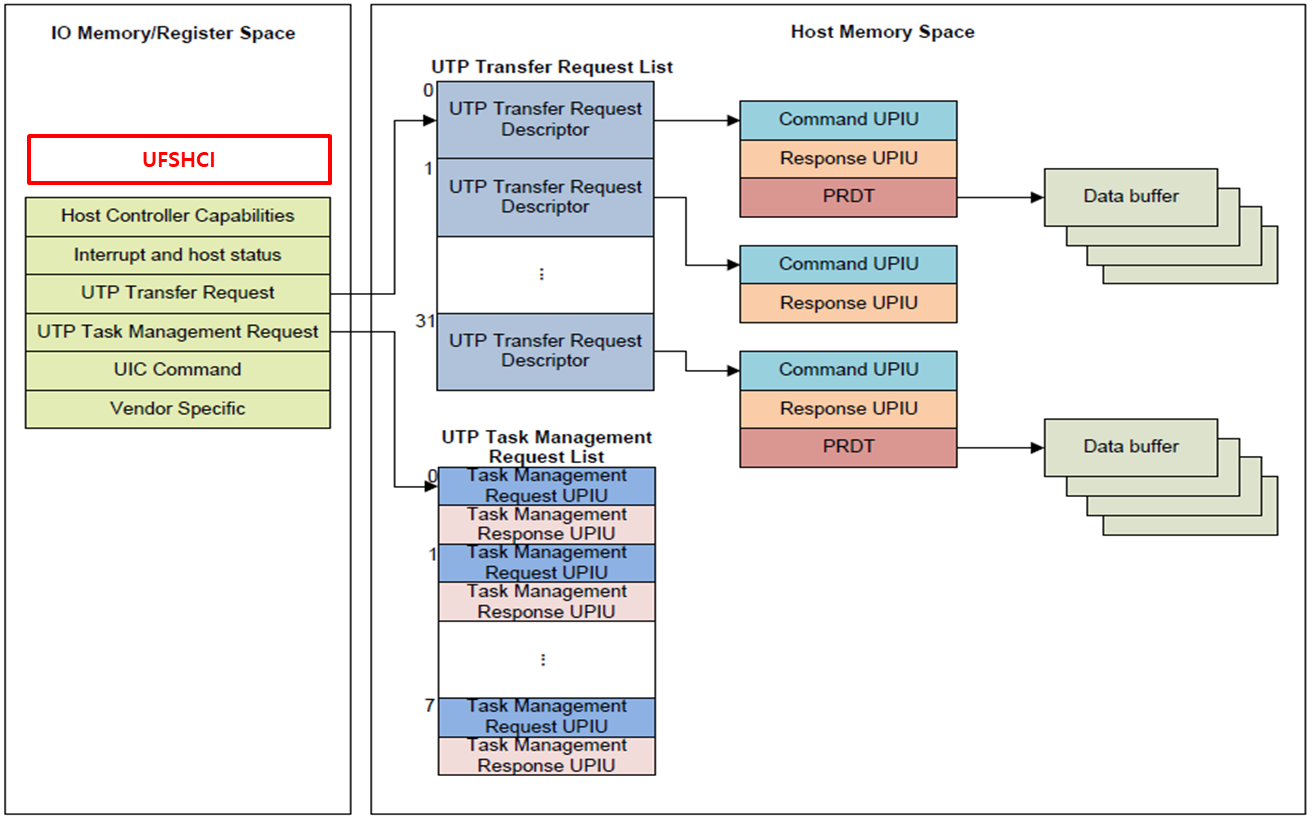
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# UFS Overview

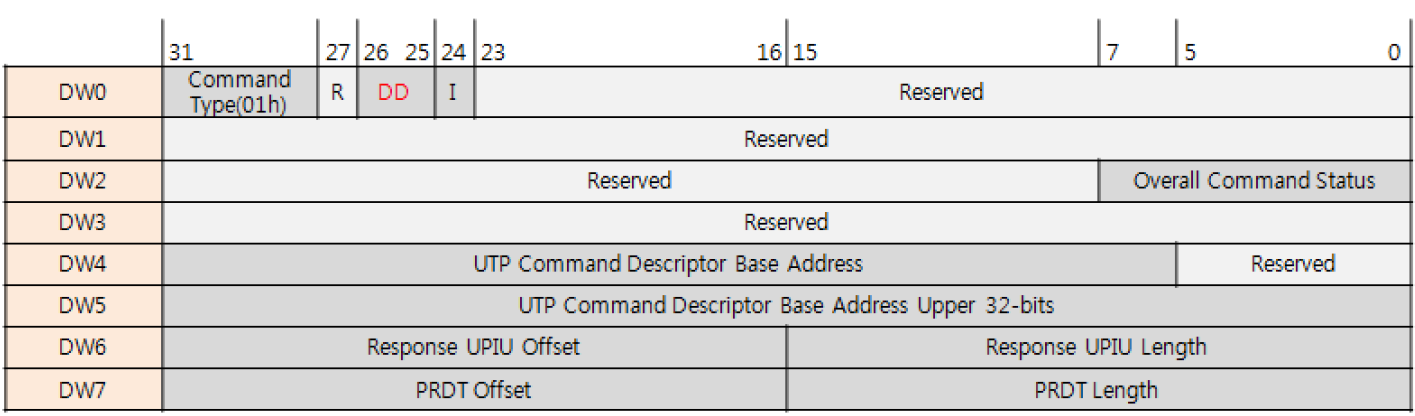
본 문서는 UNI92K-UFS의 기능들을 설명하는 SRS(Software Requirements Specification)이다.

## General architecture of UFS Host Controller Interface

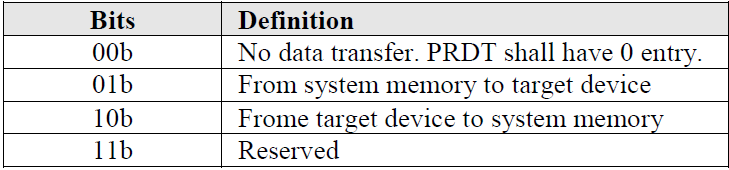


## UFS Transfer Request List

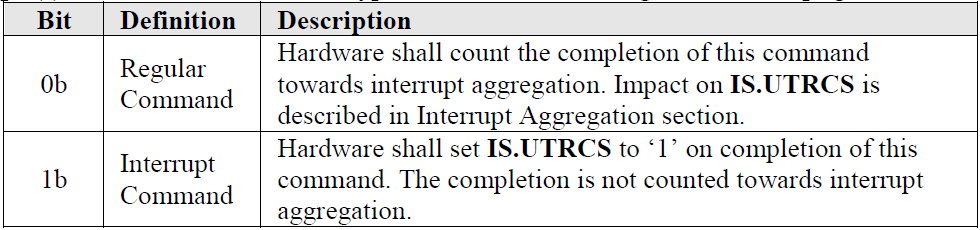
### UTP transfer request descriptor



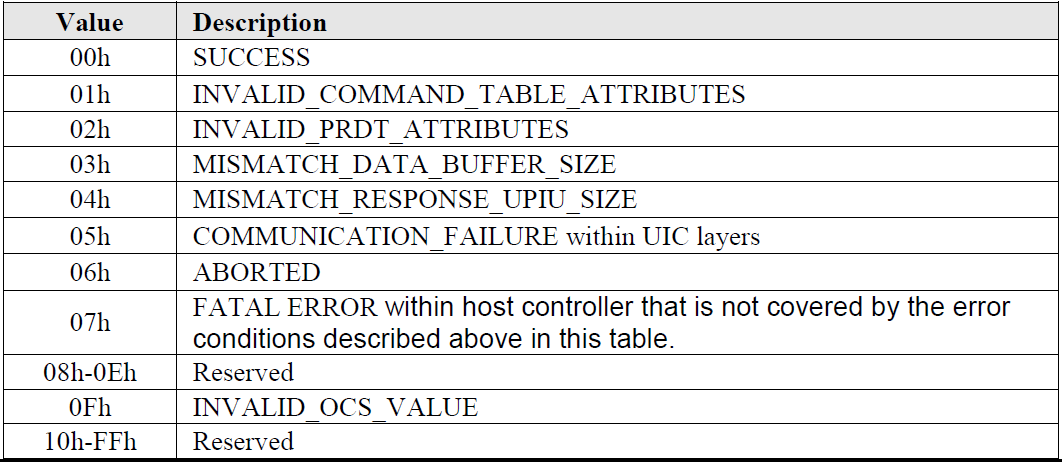
* DD ( Data Direction )



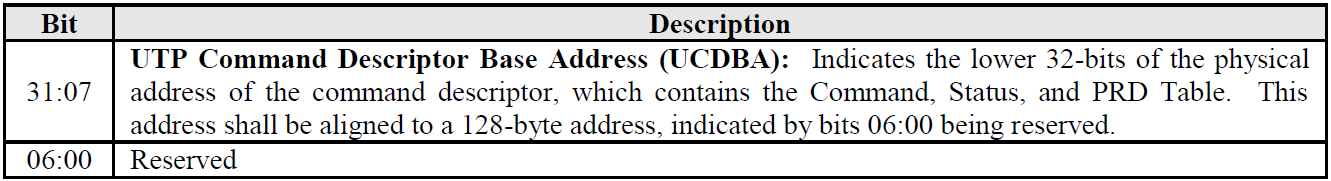
* I ( Interupt )



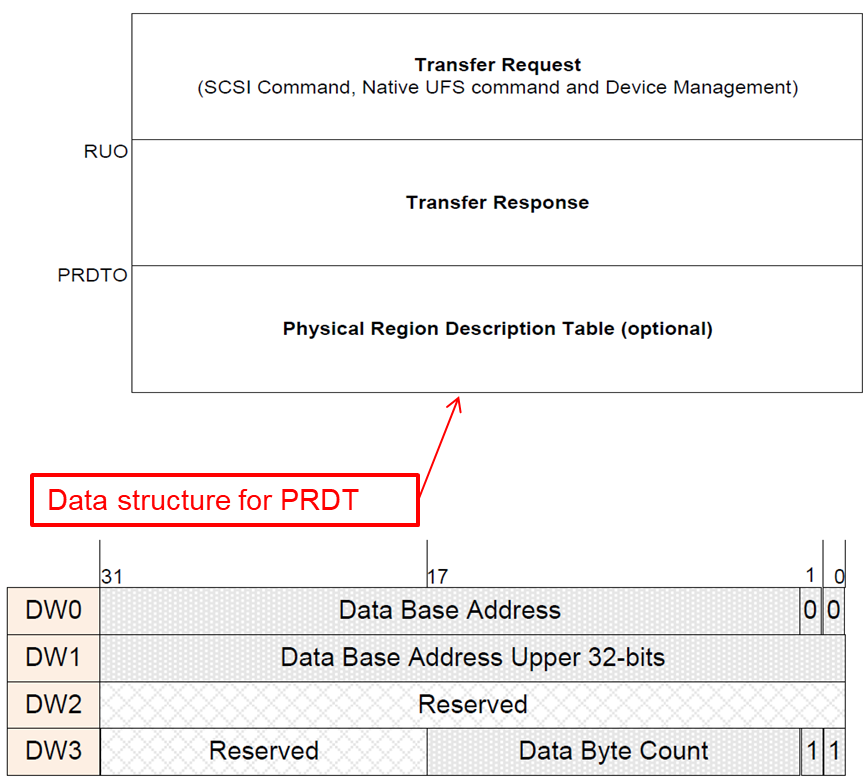
* Overall Command Status



* Contains a pointer for a UTP Command Descriptor (UCD)

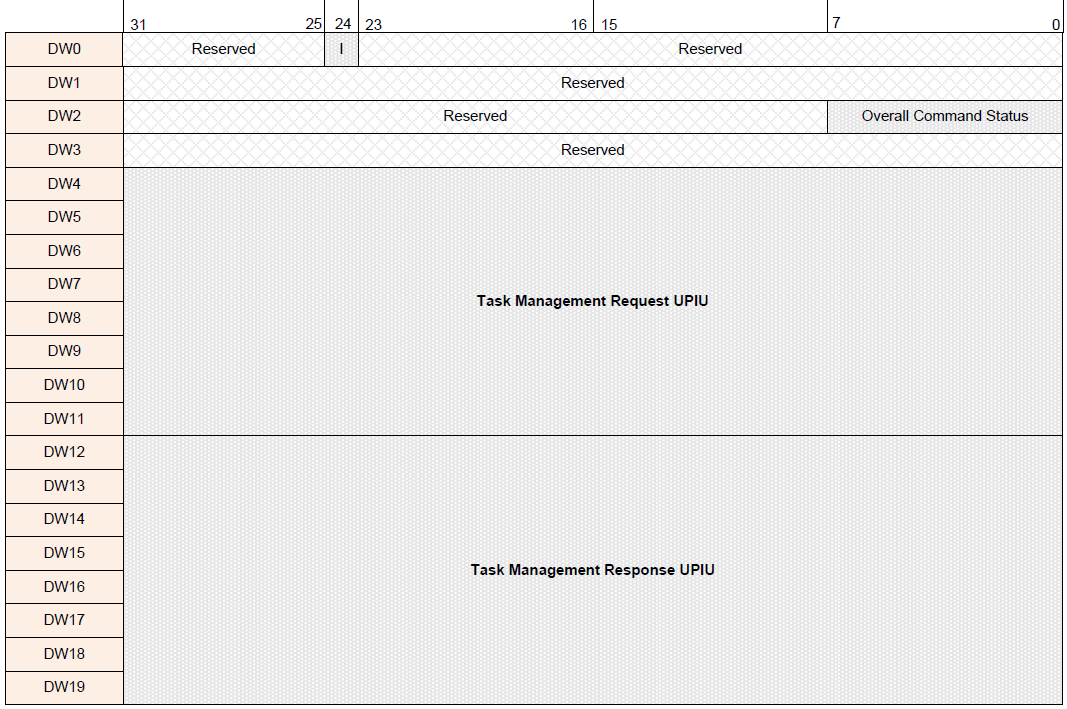


### UTP command descriptor

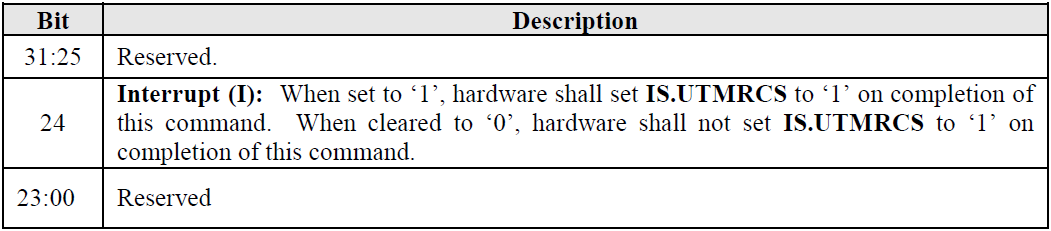


## UTP Task Management Request List

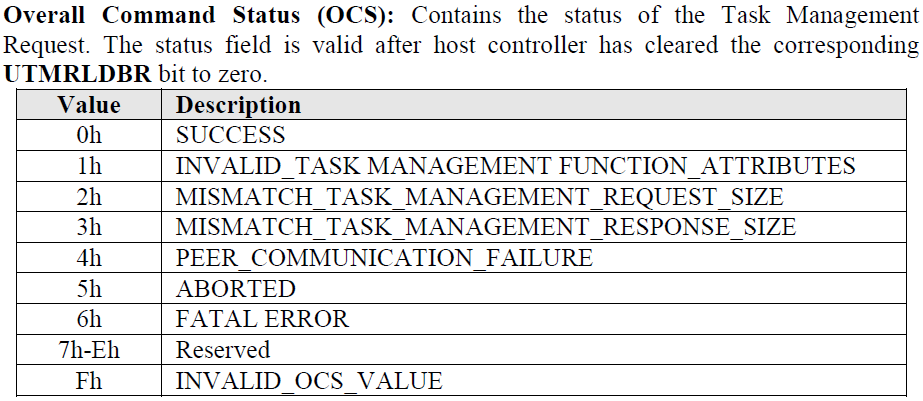
### UTP task management request descriptor



* I ( Interupt )



* Overall Command Status



## UPIU (UFS Protocol Information Unit) format

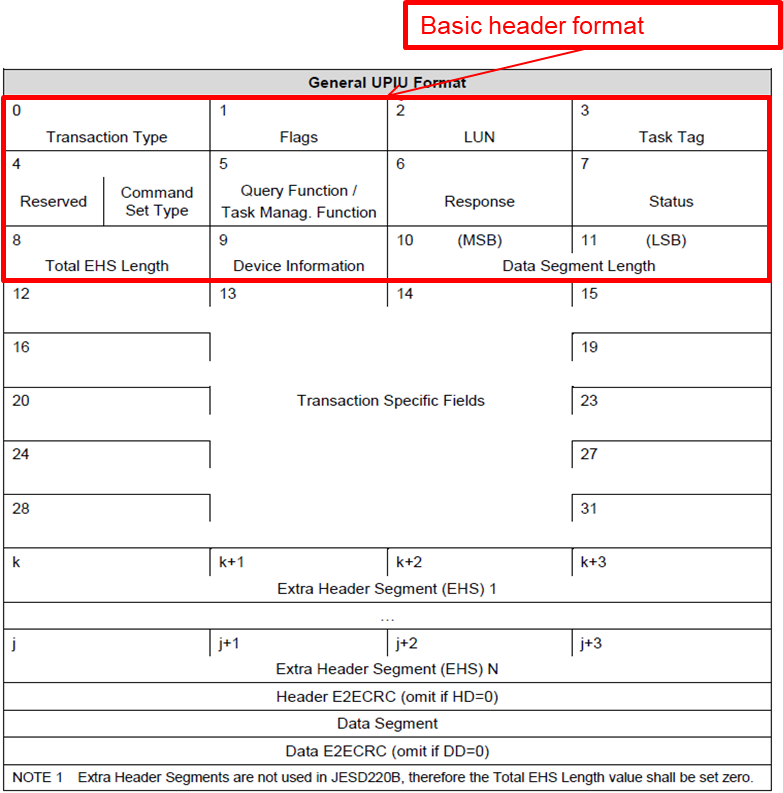
### UPIU total size

* Integer Multiple of 32-bits
* Smallest sized UPIU is 32 bytes

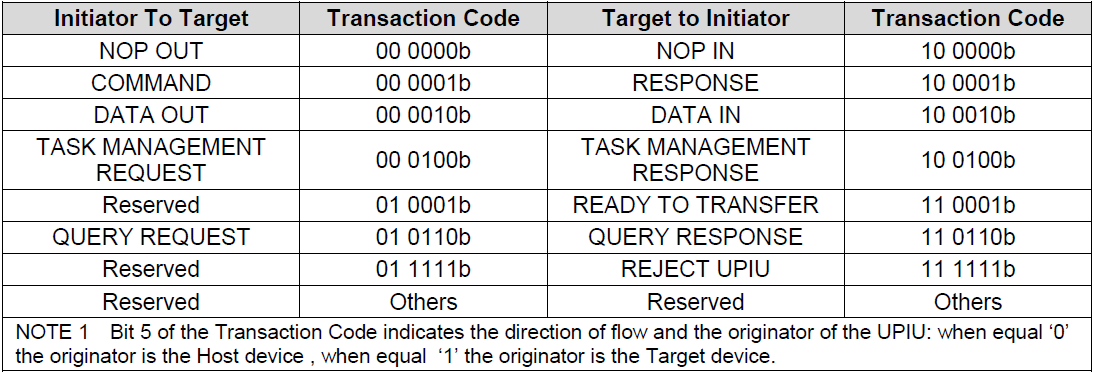
### UPIU types

* COMMAND UPIU
* RESPONSE UPIU
* DATA OUT UPIU
* DATA IN UPIU
* READY TO TRANSFER UPIU
* TASK MANAGEMENT REQUEST UPIU
* TASK MANAGEMENT RESPONSE UPIU
* QUERY REQUEST UPIU
* QUERY RESPONSE UPIU
* REJECT UPIU
* NOP OUT UPIU
* NOP IN UPIU

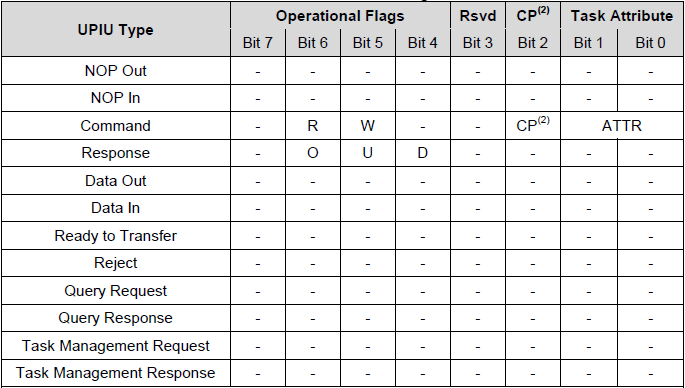
### Basic Header Format



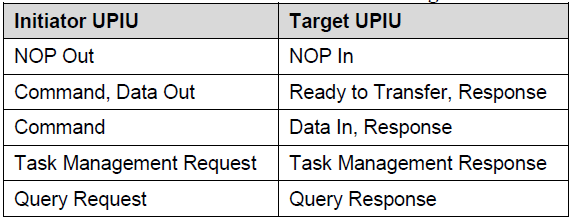
* 0 - Transaction Type



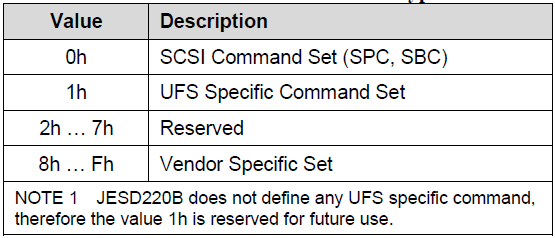
* 1 - Flag: Vary with transaction type



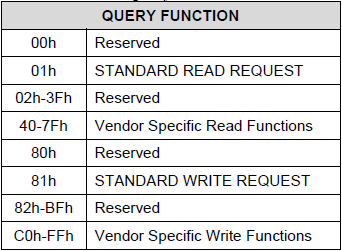
* 2 - Logical Unit Number of target device
* 3 - Task Tag ( Queue )

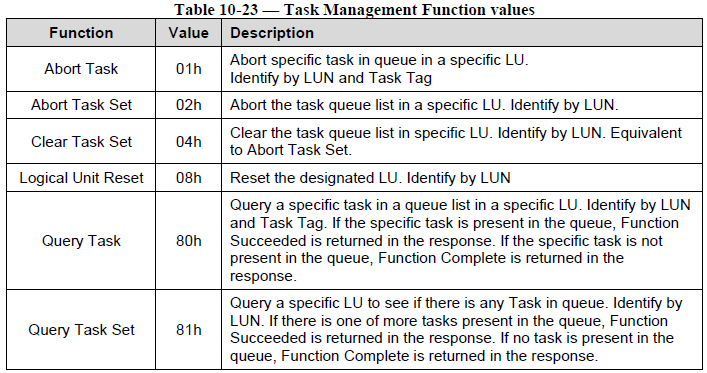


* 4 - Command Set Type

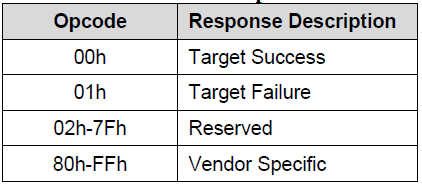


* 5 - Be used in QUERY, TASK MAG. Function





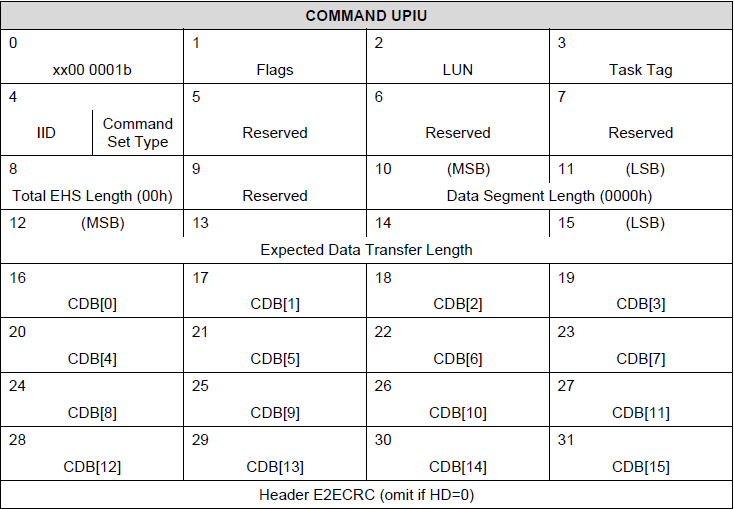
* 6 – Response



* 7 - SCSI status (RESPONSE UPIU with CMD set type = 0x00)

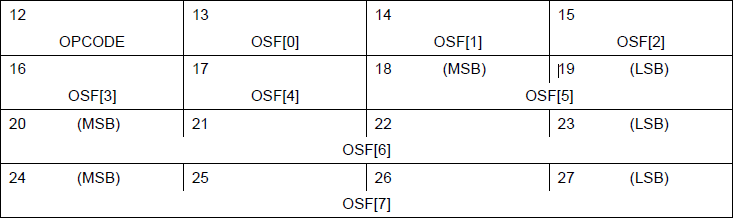
### COMMAND UPIU

* Transaction Specific Fields를 CDB로 구성
* CDB 설정에 따라 SCSI Command 구성



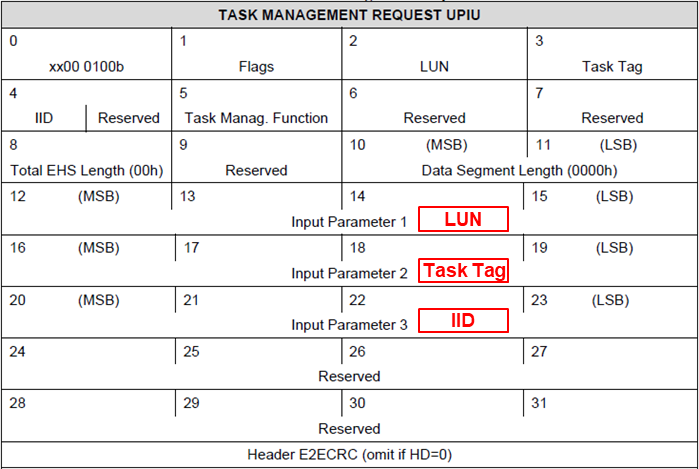
### QUERY REQUEST UPIU

* Transaction Specific Fields를 OPCODE와 OSF 로 구성
* OPCODE와 OSF에 따라 Query Descriptor 구성

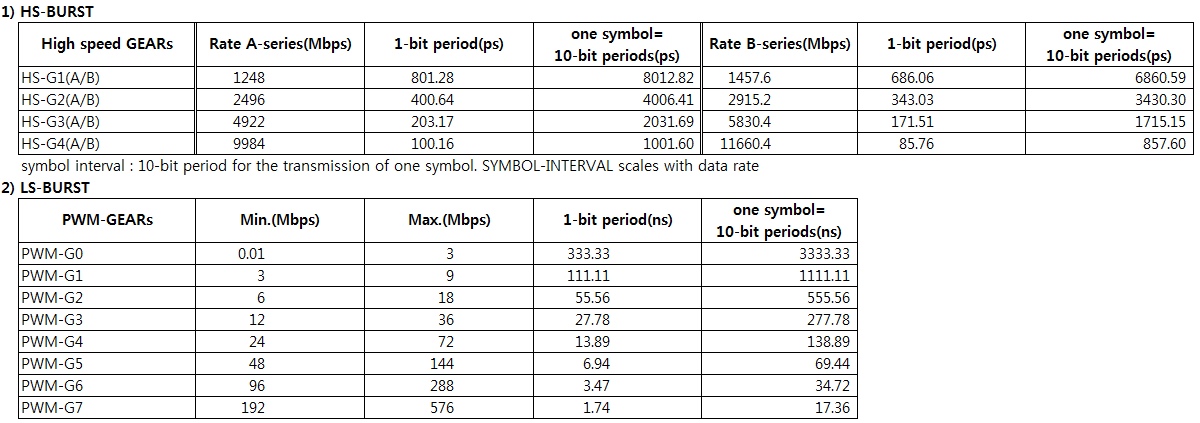


### TASK MANAGEMENT REQUEST UPIU

* Transaction Specific Fields를 Input Parameter 로 구성

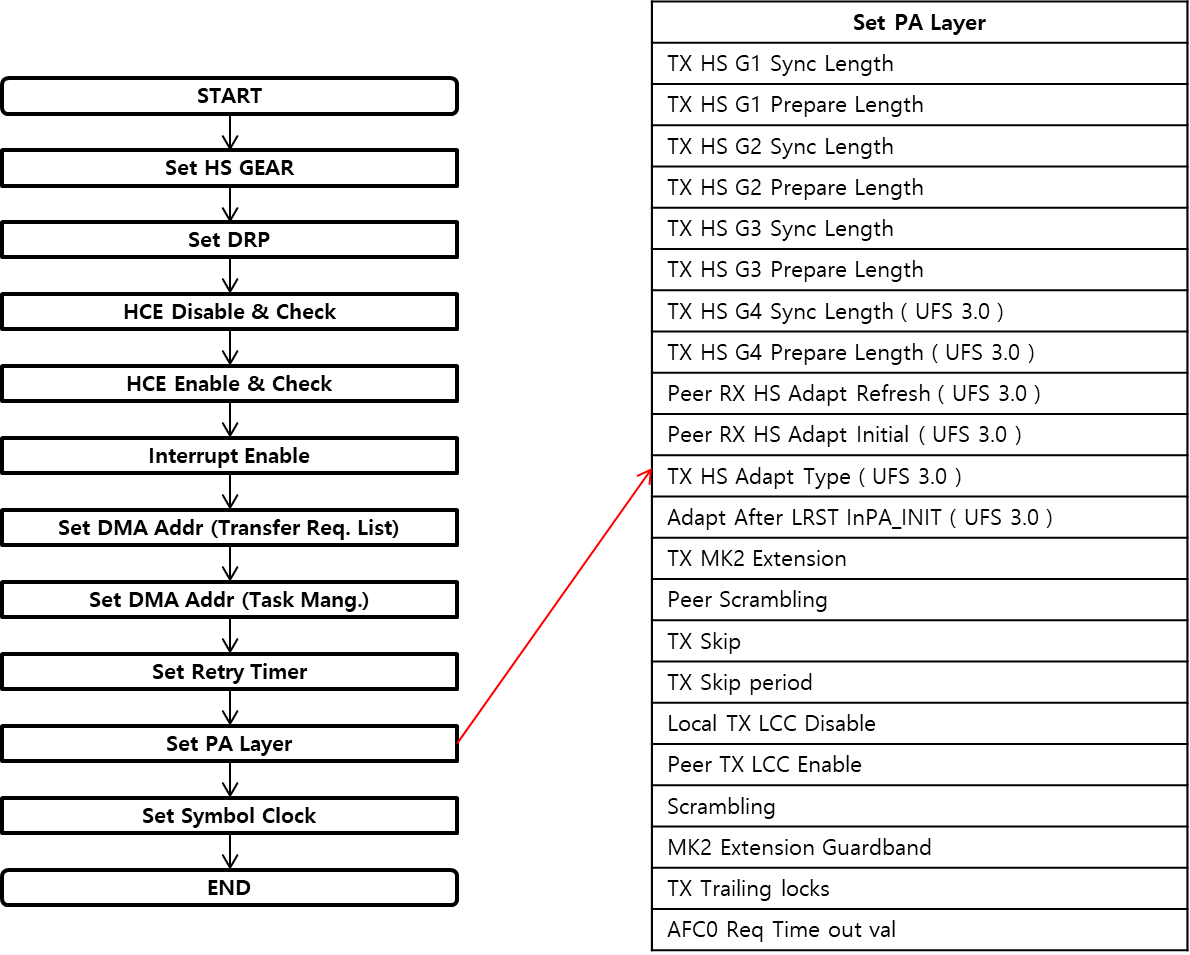


## RATE Series and GEARs



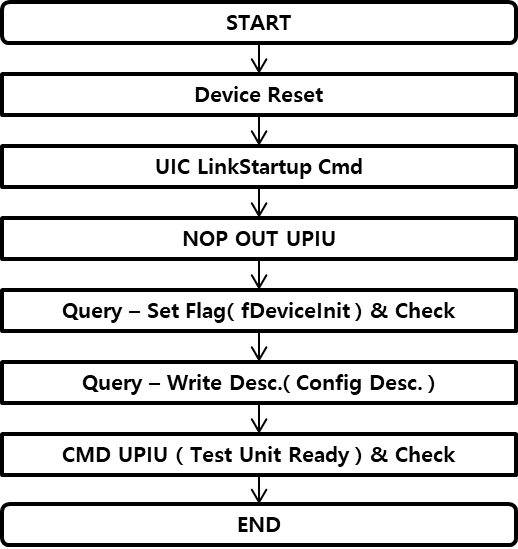
# UFS Initialize Host

## Initialize Host



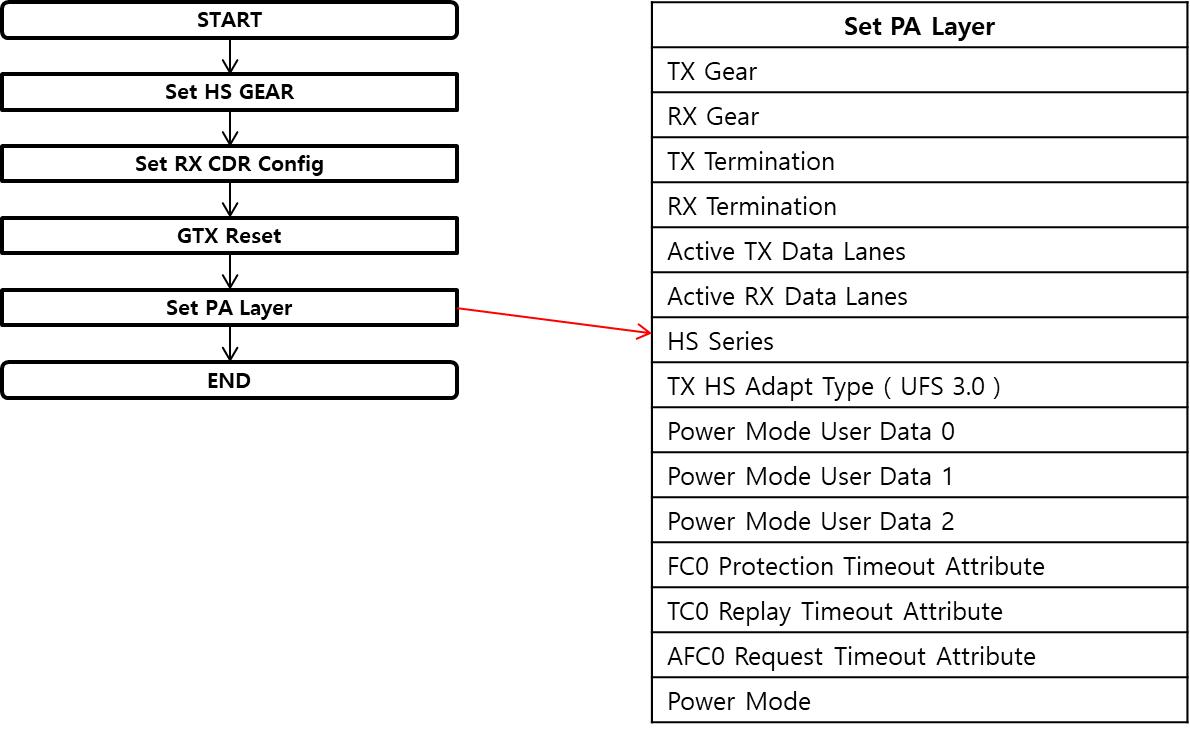
# UFS Link Startup

## Initialize Link Startup



# UFS Set Power Mode

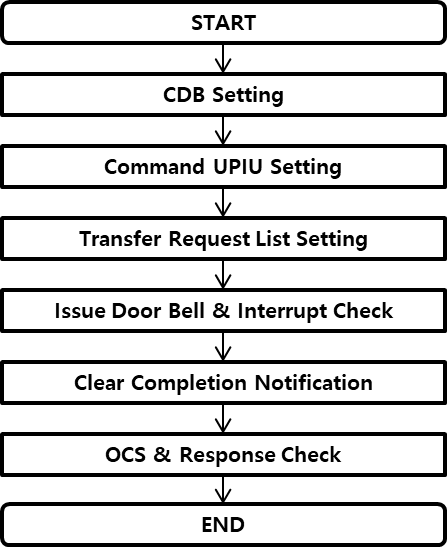
## Set Power mode



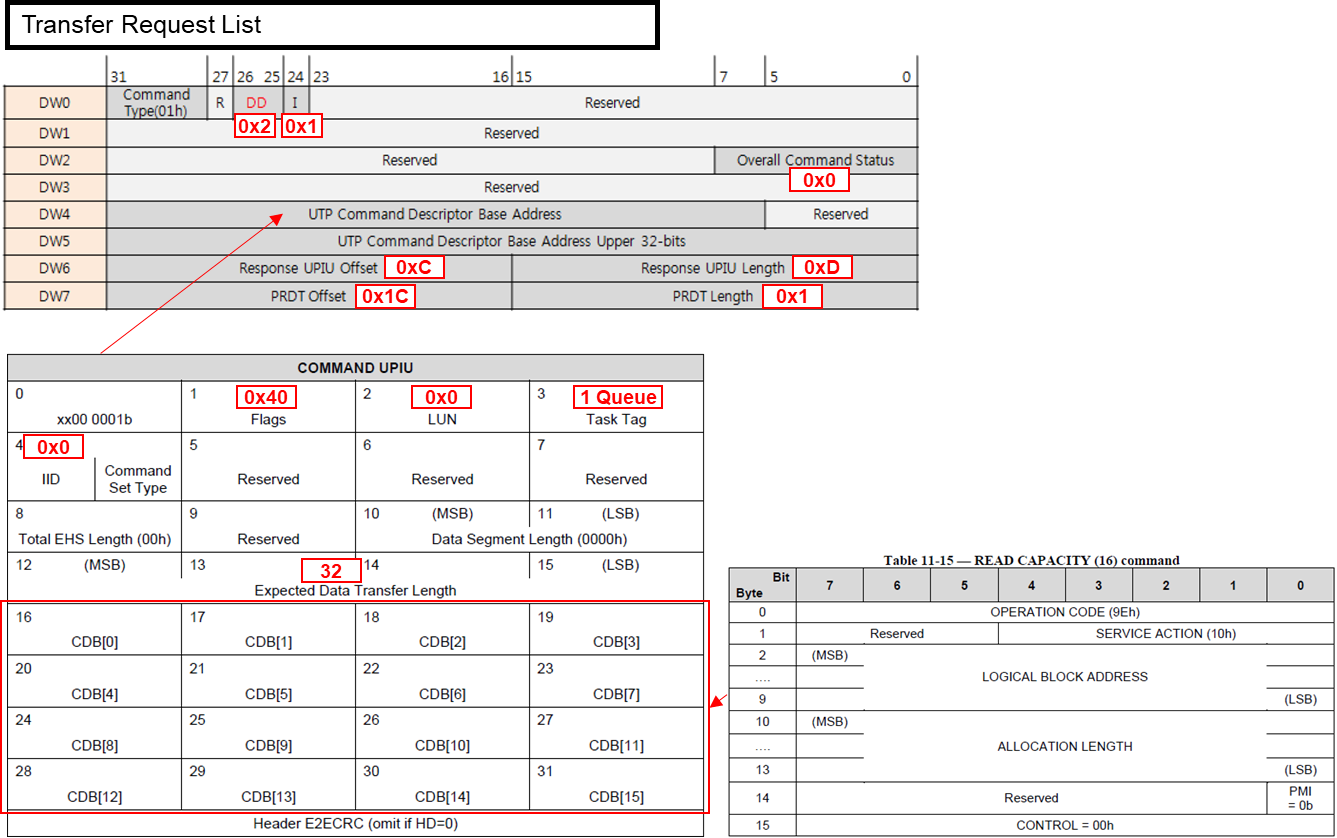
# UFS Command UPIU Operation

## Command UPIU Operation

* Flow



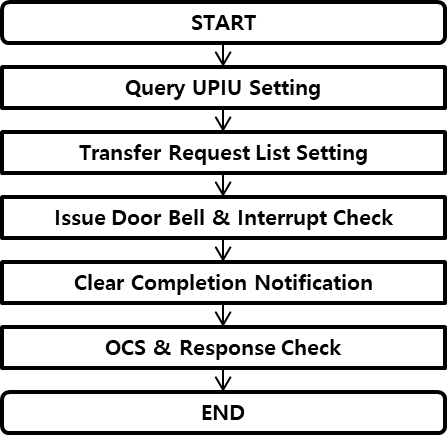
* Example
  + Read Capacity16



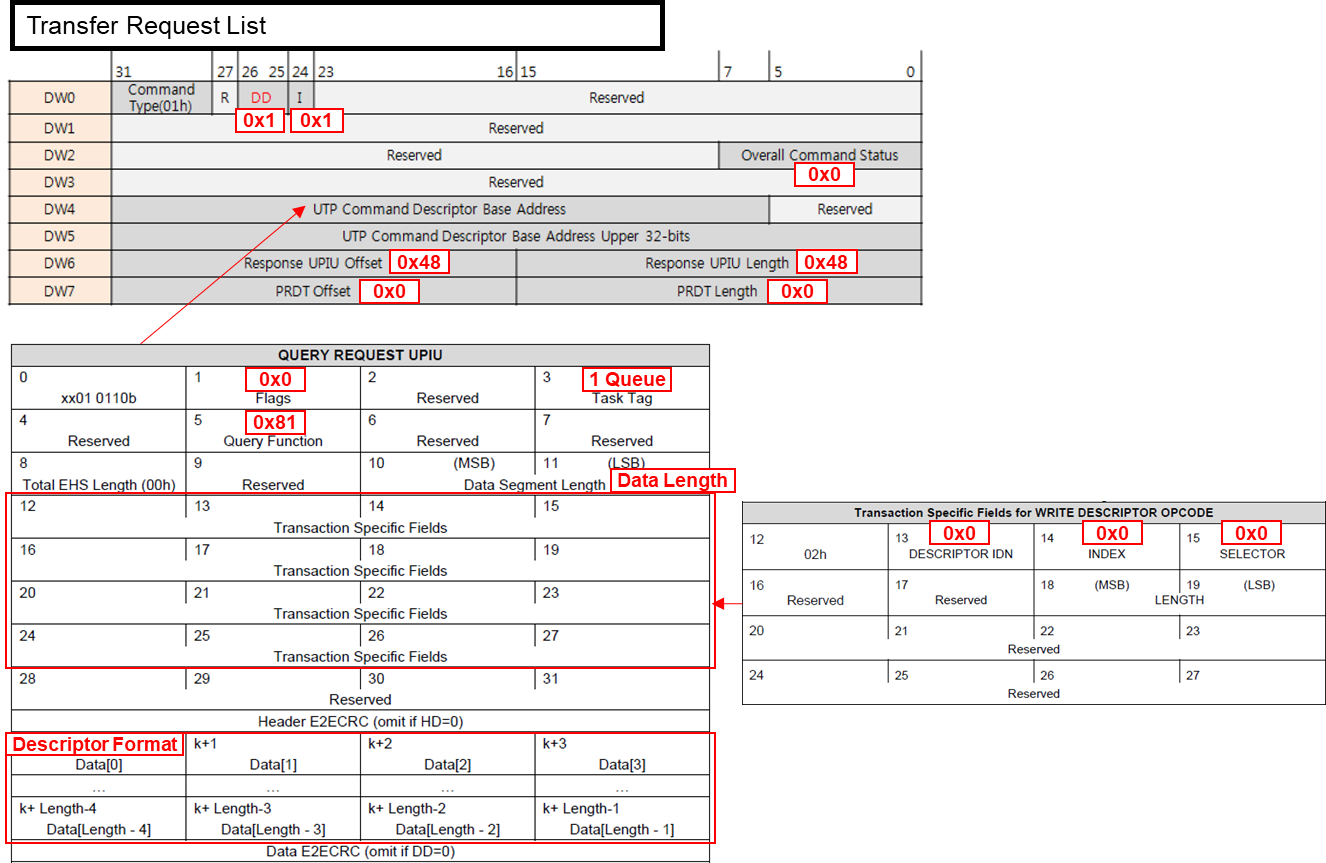
# UFS Query UPIU Operation

## Query UPIU Operation

* Flow



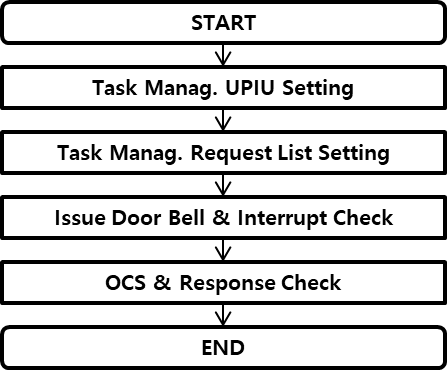
* Example ( Write Descriptor ( Configuration Descriptor ) )



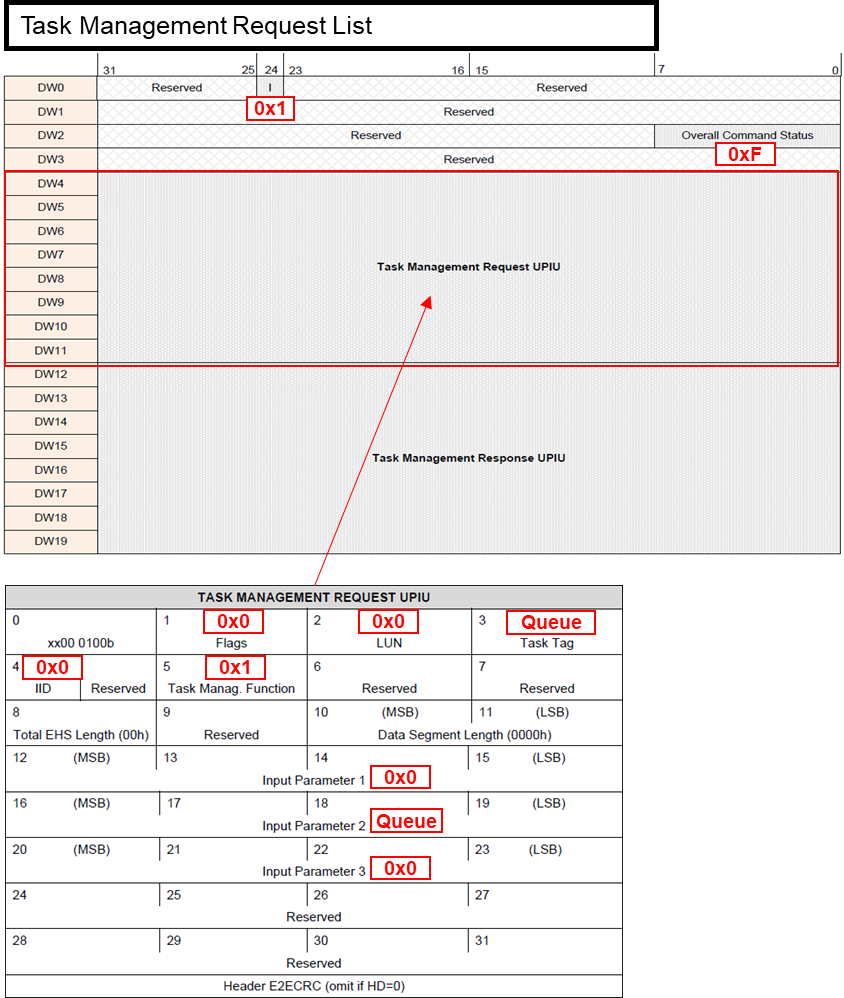
# UFS Task Management UPIU Operation

## Task Management UPIU Operation

* Flow



* Example ( Abort Task Function )



# Supporting Information

## Revision History

|  |  |  |  |
| --- | --- | --- | --- |
| 날짜 | 버전 | 설명 | 작성자 |
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| **UniTest Inc.**  27, Gigok-ro, Giheung-gu, Yongin-si, Gyeonggi-do, Korea  Zip Code: 446-930  Tel : 82-31-547-0300  Fax : 82-31-547-0468 |