



Application Note (Migration Document)

KSZ8895MQ/RQ/FMQ/ML/MLU To

KSZ8895MQX/RQX/FQX/ML/MLUB

Introduction

This application note summarizes the differences between the KSZ8895MQ/RQ/FMQ/ML/MLU and KSZ8895MQX/RQX/FQX/ML/MLUB devices. The KSZ8895MQX/RQX/FQX/ML/MLUB devices provide a functional drop in replacement to KSZ8895MQ/RQ/FMQ/ML/MLU devices. Specific part numbers for the pin-compatible replacements are shown in Table 1 below. Table 2 shows major commonality between two families. Table 3 shows the differences between the two product families.

Part Numbers for the Pin-Compatible Replacements (Table 1)

Discontinued Devices	Replacement Devices
KSZ8895FMQ	KSZ8895FQXCA
KSZ8895FMQI	KSZ8895FQXIA
KSZ8895MQ	KSZ8895MQXCA
KSZ8895MQI	KSZ8895MQXIA
KSZ8895RQ	KSZ8895RQXCA
KSZ8895RQI	KSZ8895RQXIA
KSZ8895ML (Rev A3)	KSZ8895ML (Rev B2)
KSZ8895MLU (Rev A3)	KSZ8895MLUB
SPNU801112 (KSZ8895MLU Rev A4)	KSZ8895MLUB

Summary of major commonality between the two product families (Table 2):

KSZ8895MQ/RQ/FMQ/ML/MLU	KSZ8895MQX/RQX/FQX/ML/MLUB
Pins Configurations	Same
Strap-in Pins Functions	Same
Features	Supports existing features plus new features
Package	Same
MII/RMII interface	Same
VDDC, VDDIO, VDDAT Voltage	Same
Registers set	Same, except LinkMD & Fiber versions. For details, please see below Table 3.

Summary of differences between the two product families (Table 3)

Descriptions	KSZ8895MQ/RQ/FMQ/ML/MLU	KSZ8895MQX/RQX/FQX/ML/MLUB
Process Technology	0.13um	0.11um
Identification	Register 137 (0x89) bits [7:4]=0x1 to 0x3 for 0.13um silicon	Register 137 (0x89): Bits [7:4] = 0x4 for MQX/RQX/FQX Rev. A2 and ML/MLUB Rev.B2. Bits [7:4] = 0x5 for MQX/RQX/FQX Rev. A3 and ML/MLUB Rev.B3.
LinkMD Cable Diagnostic	No	Yes Note: Add the Port PHY Special Control/Status registers (0x1A to 0x5A) and Port LinkMD Result registers (0x1B to 0x5B).
Digital I/O current strength	4/8/12/16mA in Register 132 bits [7:6]	4/8/10/14mA in Register 132 bits [7:6]
HBM ESD Rating	4KV	5KV
Internal I/O Pull-Up Resistor	1.8V VDDIO: 100Kohm 2.5V VDDIO: 59Kohm 3.3V VDDIO: 43Kohm	1.8V VDDIO: 99Kohm 2.5V VDDIO: 61Kohm 3.3V VDDIO: 45Kohm
Internal I/O Pull-Down Resistor	1.8V VDDIO: 100Kohm 2.5V VDDIO: 60Kohm 3.3V VDDIO: 43Kohm	1.8V VDDIO: 99Kohm 2.5V VDDIO: 59Kohm 3.3V VDDIO: 43Kohm
Using Internal 1.2V LDO Controller and an external MOSFET	Pin 126 voltage enable the internal 1.2V LDO controller threshold voltage >0.58V. Recommend using resistor divider on pin 126 and using 3.3K-4.3K pull-up and 1K pull-down for this resistor divider.	Pin 126 voltage enable the internal 1.2V LDO controller threshold voltage >1V. Recommend using resistor divider on pin 126 and using 4K pull-up and 2K pull-down for this resistor divider.
Fiber Mode	KSZ8895FMQ supports 3 copper ports and 2 fiber ports	KSZ8895FQX supports 4 copper ports and 1 fiber ports as default
	KSZ8895FMQ need to set the Register 165 (0xa5) bit [5] = 0	KSZ8895FQX doesn't need to set the Register 165 (0xa5) bit [5] (default)
	KSZ8895FMQ port 3 and port 4 support fiber mode only.	KSZ8895FQX port 4 is fiber mode only. Port 3 default is copper mode that can be configured to fiber mode by setting Register 239 bit [7] = 1.

Conclusion

For the detail device information, please refer to the relevant datasheets at www.micrel.com