

EG06&EG12&EG18 Series

VoLTE Reference Design

LTE-A Module Series

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About the Document

Revision History

Version	Date	Author	Description
1.0	2020-06-22	Archibald JIANG	Initial

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1 Reference Design

1.1. Introduction

This document is a reference design of the EG06, EG12 and EG18 series modules for realizing VoLTE function with the Le9643 Subscriber Line Interface Circuit (SLIC) device.

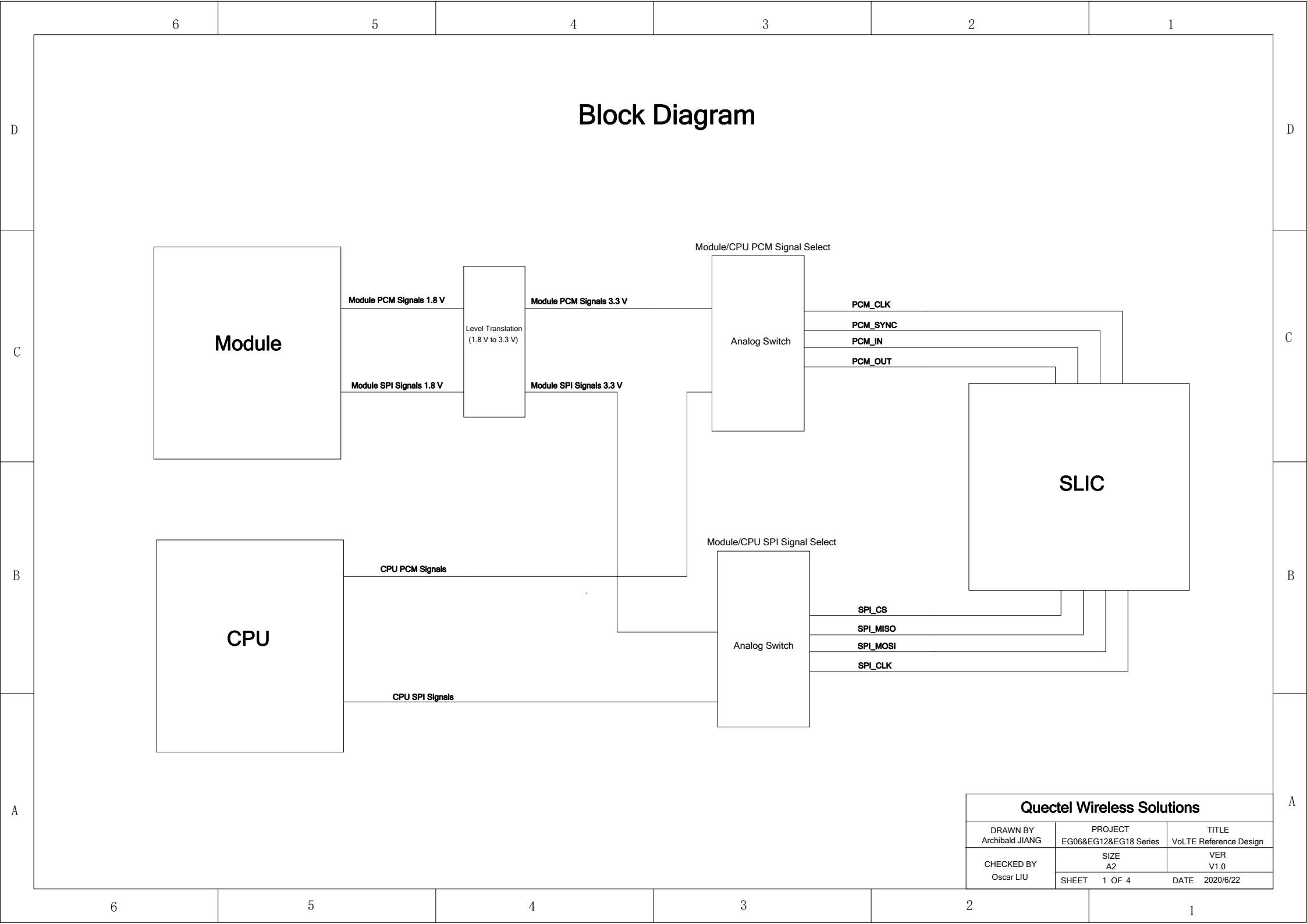
Based on the design for VoLTE with Le9643, you can also achieve VoIP on host CPU through an analog switch circuit. For more details, see the schematics in the following pages.

This document is applicable to the following modules:

- EG06 series
- EG12 series
- EG18 series

1.2. Schematics

The schematics in the following pages are for reference only.

[illegible]

This diagram illustrates the signal connections between a **Module** and a **CPU** for PCM and SPI signals, passing through an **SLIC** (Subscriber Line Interface Circuit).

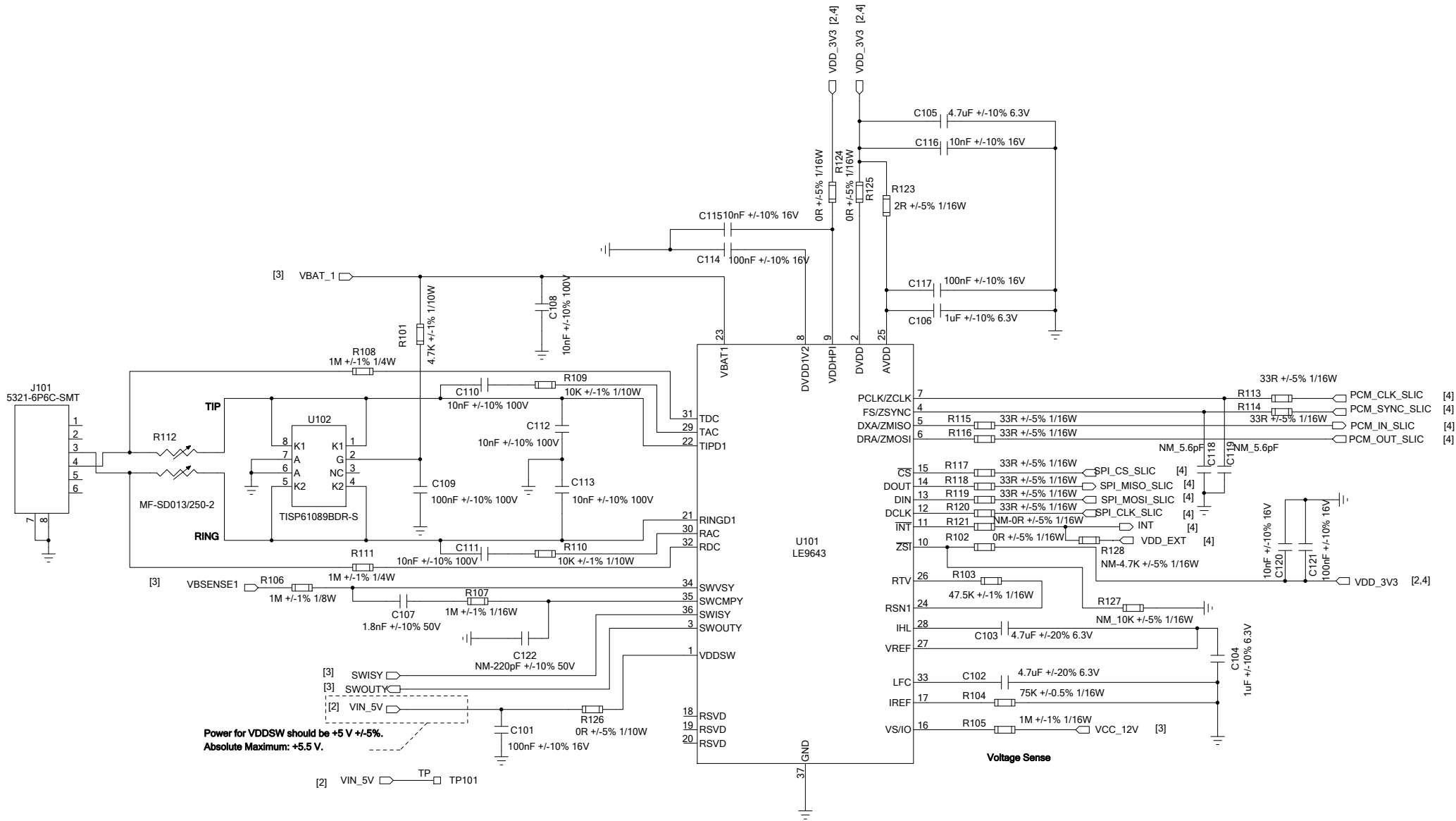
Signal Connections:

- PCM Signals:** The **Module** outputs **Module PCM Signals 1.8 V** and **Module PCM Signals 3.3 V**. These signals pass through a **Level Translation (1.8 V to 3.3 V)** block. The **CPU** outputs **CPU PCM Signals**. Both paths lead to the **Module/CPU PCM Signal Select** block, which then outputs **PCM_CLK**, **PCM_SYNC**, **PCM_IN**, and **PCM_OUT** to the **SLIC**.
- SPI Signals:** The **Module** outputs **Module SPI Signals 1.8 V** and **Module SPI Signals 3.3 V**. The **CPU** outputs **CPU SPI Signals**. These signals pass through an **Analog Switch** block (labeled **Module/CPU SPI Signal Select**) and then output **SPI_CS**, **SPI_MISO**, **SPI_MOSI**, and **SPI_CLK** to the **SLIC**.

Legend:

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CHECKED BY Oscar LIU	SIZE A2	VER V1.0	
SHEET	1 OF 4	DATE	2020/6/22

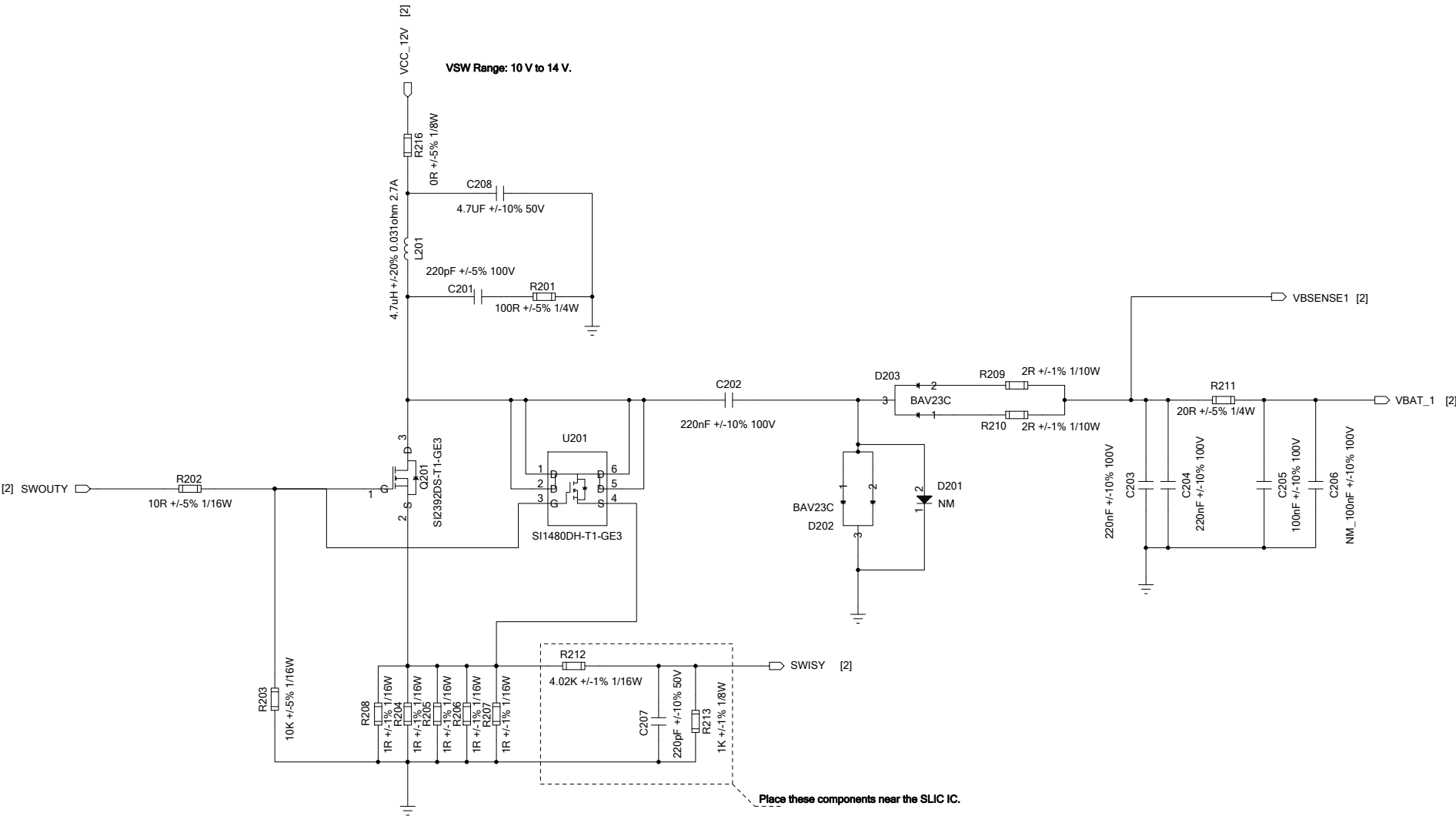
Le9643 SLIC



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Le9643 Power Supply

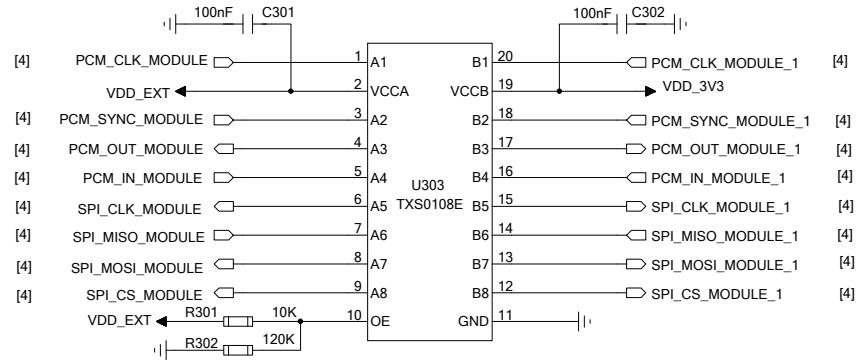


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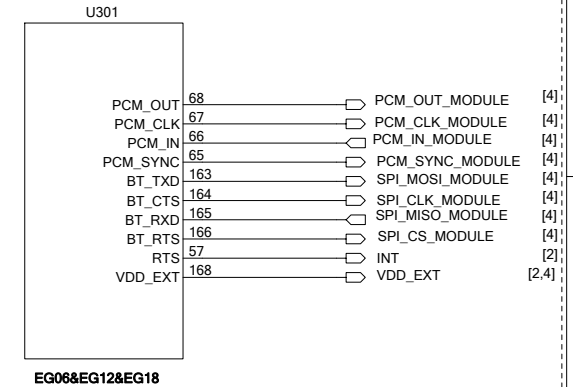
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Analog Switch for VoLTE and VoIP Function Selection

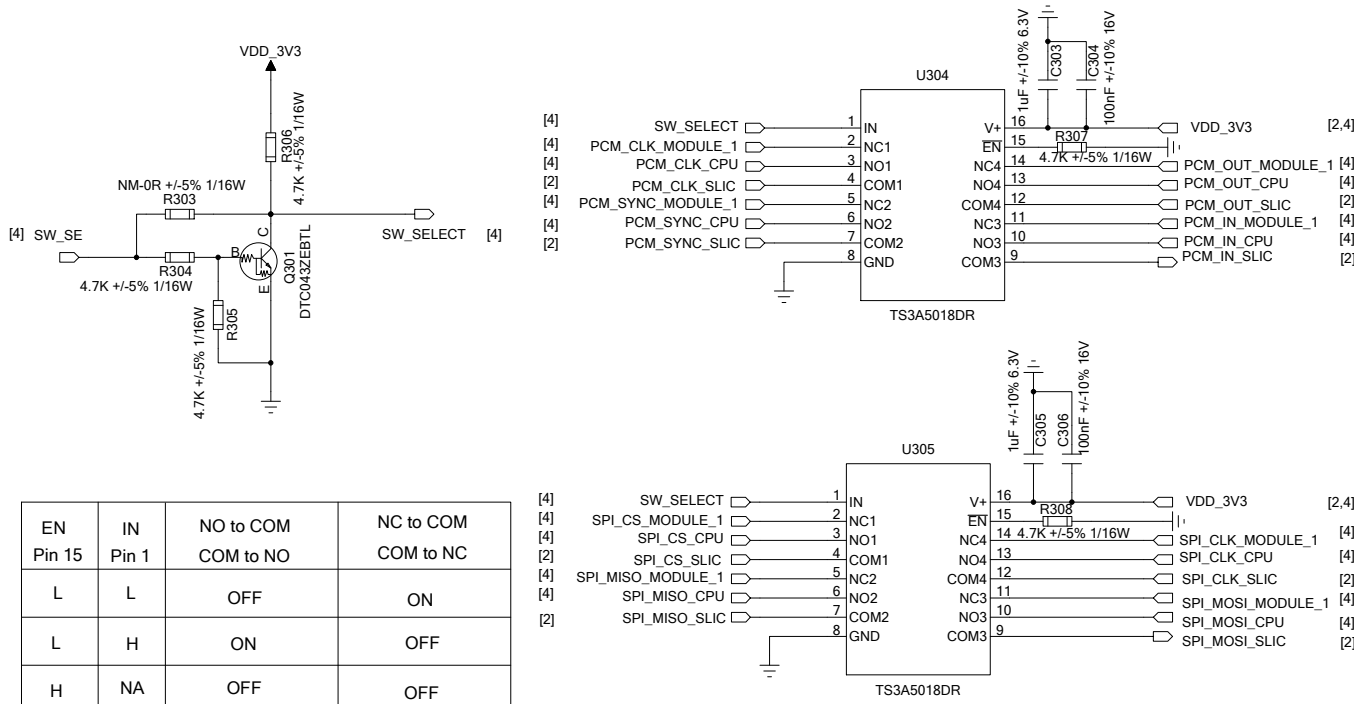
Module PCM/SPI Level Translation - IC Solution (Recommended)



Module Interface



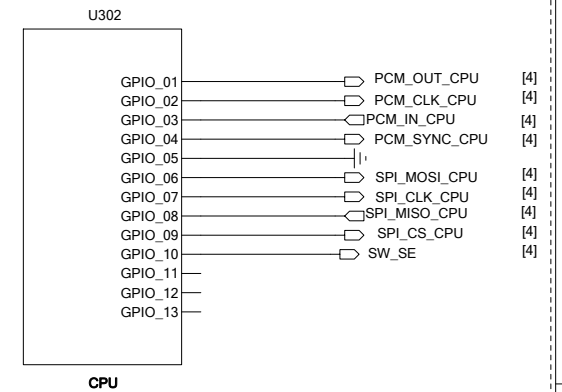
Module/CPU PCM/SPI Signal Selection



EN Pin 15	IN Pin 1	NO to COM COM to NO	NC to COM COM to NC
L	L	OFF	ON
L	H	ON	OFF
H	NA	OFF	OFF

When the SLIC chip connects to the module, the module realizes the VoLTE function.
When the SLIC chip connects to the host CPU, the CPU realizes the VoIP function.

CPU Interface



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