

Support For	Application Firmware		Embedded Stack & Software Drivers IC Vendor Response Time to LM				Hardware Designs		Packaging		Goods Out	
	Audio	Data	Realtek Relationship Manager	Broadcom Relationship Manager	Qualcomm Ticketing Que System	Qualcomm Relationship Manager	Hardware LM Design	IC Vendor Reference Design	SMT Module	Adapter Retail Pack	Hong Kong	London
Working Days	<b>3</b>	<b>1</b>	<b>11</b>	<b>12</b>	<b>5</b>	<b>4</b>	<b>2</b>	<b>7</b>	<b>3</b>	<b>2</b>	<b>3</b>	<b>2</b>
	LMNZ	LMST	ICVR	ICVR	ICVR	ICVR	LMST	ICVR	LMHK	LMST	LMHK	LMST

- LMST = Response by LM London office
- LMHK = Response by LM Hong Kong office
- LMNZ = Response by LM New Zealand -3rd Party Application Partner
- ICVR = Response issued by our vendors relationship manager or their support ticket team.

## Days Stated Above - Guide

LMST = The time stated is a response from one of LM Technologies own engineers or developers in a category that we have control over.

LMHK = The time shown above are the Avg response time from our Hong Kong team.

LMNZ = Our 3rd party Audio firmware development team have been building a range of new firmware for our Audio based Bluetooth modules, so far they have not dealt with support from customers, we have therefore based their number on their development response time.

ICVR = Our IC vendor response times vary due to each vendor responding, our internal support team will pass the reply on the same day as received unless the response is after 5:30pm GMT, in which case our team pass on any information on the following day. As many responses do arrive after 5:30pm this delay has move LM's company average from 2 days to 1 day response when dealing with internal support issues..

## LM First response procedure

As soon as a support ticket is picked up by the support team we categorise the support question into one of the above categories.

Some of the support Items are dealt with directly by an LM engineer or developer, others are passed to the relevant vendors support team either as a support ticket or directly to our relationship manager.

## IC Vendor response procedure

Our vendors relationship managers pass our support question onto their internal support team under their own procedures. In our first response average days as shown in our table. Often first response will not resolve the issue, please ensure the maximum amount of detail is provided with any support question as this will aid in total resolution times.

## IC Vendors - USB Drivers

Driver Software within the wireless technology products designed by LM Technologies cover two main platforms which are; Windows by Microsoft and Linux (Open Source).

### **Windows by Microsoft.**

When using any of our USB Adapters with a Windows based operating system then the product we supply is controlled by the Windows stack or a specific driver issued by the IC Vendor.

Often a new technology will not be available under the existing Windows stack, therefore the IC vendor will issue a software driver with their IC. In time the IC vendor will have his driver included in the Windows Update.

The stack controls the functionality of the product and the driver the interaction between the Windows stack and the USB device.

### **Linux - Open Source**

BlueZ generate a stack and driver based on the Standard issued by the Bluetooth SIG or Wi-Fi Alliance. The IC wireless vendors develop their IC to the same standards.

BlueZ do not qualify any of the IC Vendors products in the same way that Microsoft do for Windows. Therefore if the IC vendors chipset does not work with a BlueZ stack on the Linux platform any compatibility issues is the responsibility of either the Linux Platform Vendor or the IC Vendors.

### **Be Aware**

If it is the IC Vendors agree to generate a software patch to fix any driver issue, any such patch is also subject to updates and possibly limited functionality.

LM has worked with the worlds leading IC vendors and found Qualcomm to be the most stable and proactive at supporting such issues. Specific driver updates for any such issues will take many months to remedy and often not be concluded within 12 months, from the date the IC vendor agrees to the development. Just gaining their agreement will be difficult and is dependant on IC sales volume.

Sales volumes for such developments often require a 1m piece order, or a minimum \$100'000 USD development fee paid by the customer who wishes his product to be supported.