



SIM7500_SIM7600 Series Jamming Detection_Application Note

LTE Module

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Version History

Version	Date	Owner	What is new
V2.00	2020.8.6	Xiuyi.Mei	Update the format

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1. Introduction

1.1 Purpose of the document

This document provides a technical description of how to implement Jamming Detection for automotive devices.

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2. Overview

This chapter describes how Jamming Detection works.

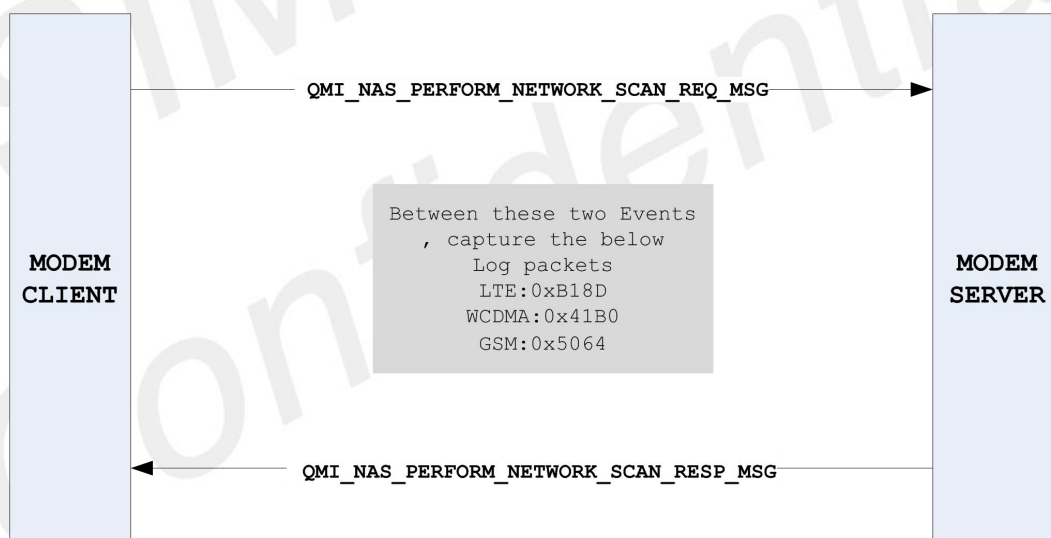
2.1 Feature Description

The following could imply the presence of a jammer.

- The User Equipment (UE) detects high RSSI on a frequency, but does not detect any cell
- PBCH decode fails

Jamming can be detected by implementing QMI_NAS_PERFORM_NETWORK_SCAN to scan LTE/WCDMA/GSM bands at a time.

The following block diagram illustrates the use of QMI API and the log packets used to infer possible jamming.

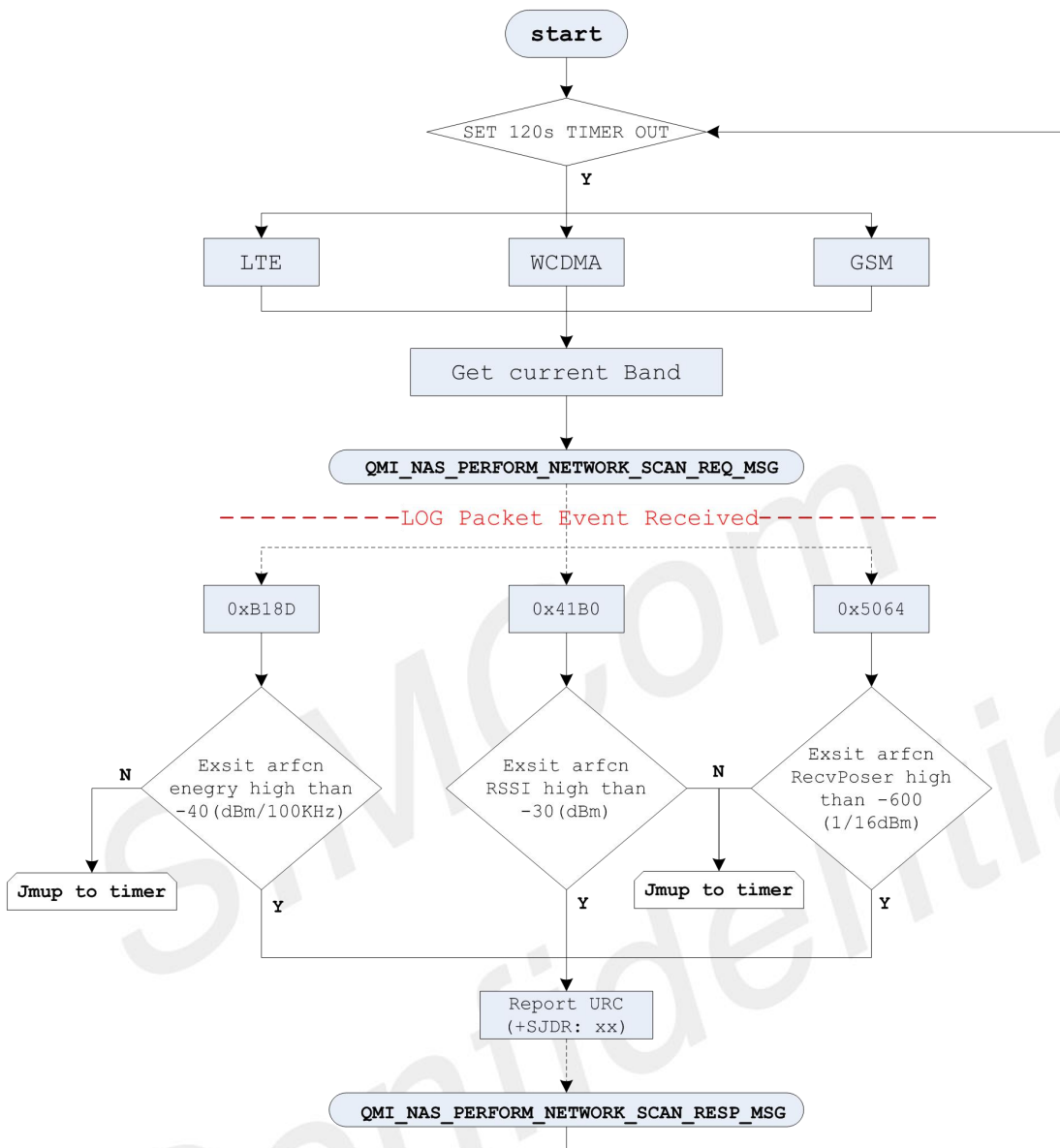


The value in Log packets can be used to get energy estimate.

If no cell is found on a band, no PLMN is reported. However, if the energy estimate is high, then it can be inferred as possible jamming.

2.2 Jamming Detection Methods

The jamming detection URC report methods as follow figure:



3. AT flow

```
// Init jamming detection parameters(QMI,timer)
AT+SJDR=1
OK

+SJDR:
QMI_NAS_GET_NET_SCAN_INIT_FINISHED
// Start jamming detection
AT+SJDR=2 //Send message, Start timer(120s), Get network para
OK
// Detect jam, report URC
+SJDR: 30
+SJDR: 60
+SJDR: 80
+SJDR: 80
+SJDR: 100
// Stop jamming and clean relevant settings
AT+SJDR=0
OK
```

NOTE

- 1) If you have executed "AT+SJDR=1" or " AT+SJDR=2", it not allowed execute again before input "AT+SJDR=0".
- 2) During jamming detection, the timer was set 120s, so the URC maybe not report continuously.