

RF-Buddy

I. INTRODUCTION

IoT- massive scale of devices. Need security to be considered when deploying this huge scale of devices. The IoT nodes are resource constrained and can not incorporate complex cryptographic functions. But these devices have inherent uniqueness which is provided by the hardware imperfections. If we move the authentication task to the IoT gateway is the inherent uniqueness detectable in the way they communicate?

Previous studies have shown that yes this uniqueness can be detected from passively sensing the RF signals (radiometric

signatures) Even more so with modern deep learning techniques. But the lacking points of these studies are:

- Most studies hint that the methods are extendable to other wireless technologies, but in general no studies show that a single method which integrates the classification across technologies. These technologies have different RF specifications. How to capture the inherent uniqueness across technologies with a single methodology
- Can this property be incorporated into a security solution, where it works in tandem with existing security solutions?