

# Analysis Report

The Equipment Under Test (EUT) is a Bluetooth version 4.0 BLE for a RC Robot Car operating from 2402-2480MHz with 2MHz channel spacing. The EUT is powered by 4X1.5V AAA batteries. After switch on the EUT and paired with smart device, the EUT can be controlled to move forward, backward, turn left/right.

Antenna Type: Internal antenna

Antenna Gain: 0Bi

Nominal rated field strength: 86.8dB $\mu$ V/m at 3m

Maximum allowed field strength of production tolerance: +/- 3dB

According to the KDB 447498:

Based on the Maximum allowed field strength of production tolerance was 89.8dB $\mu$ V/m at 3m in frequency 2.4GHz, thus;

The EIRP =  $[(FS * D)^2 * 1000 / 30] = 0.286\text{mw}$

Conducted power = Radiated Power (EIRP) – Antenna Gain

So;

Conducted Power = 0.286mW.

The SAR Exclusion Threshold Level:

=  $3.0 * (\text{min. test separation distance, mm}) / \text{sqrt}(\text{freq. in}$

GHz) =  $3.0 * 5 / \text{sqrt}(2.480) \text{ mW}$

= 9.53 mW

Since the above conducted output power is well below the SAR Exclusion threshold level, so the EUT is considered to comply with SAR requirement without testing.

## **NST nRF51822 BLE/2.4G Module (KNRF51822 A24)**



### Description

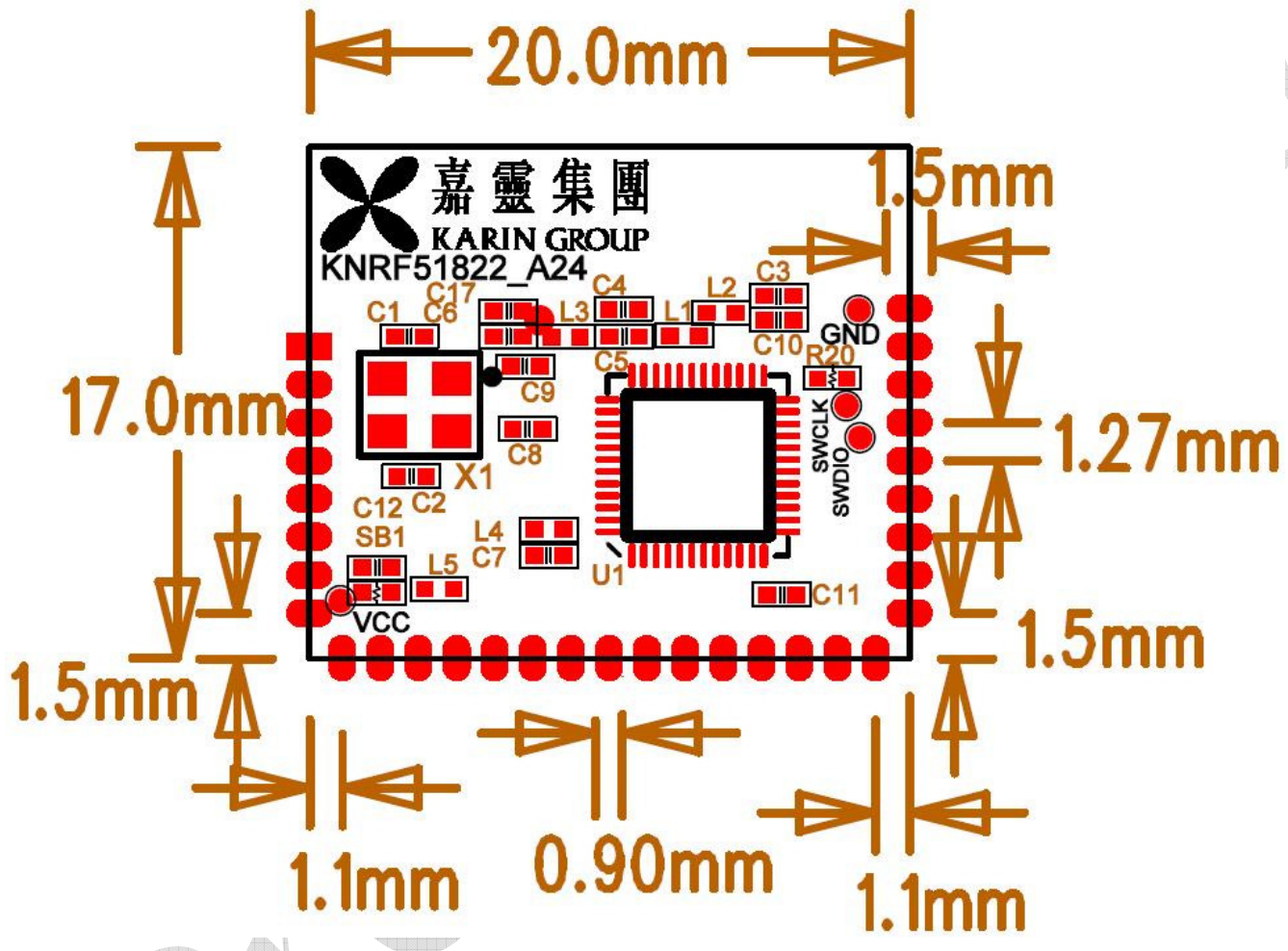
- BLE / 2.4GHz Multi-Protocol Device
- 32-bit ARM Cortex M0 CPU Core
- 256/128KB Flash, 16KB RAM
- Supports S110/120/130 Bluetooth Low Energy Protocol Stack
- On Air Compatible with nRF24L series
- 3 Data Rates (2Mbps/1Mbps/250Kbps)
- +4 to -20dBm Output Power
- -93 dBm Sensitivity, BLE
- Configurable I/O mapping for Analog and Digital I/O
- Event Driven API
- PPI System

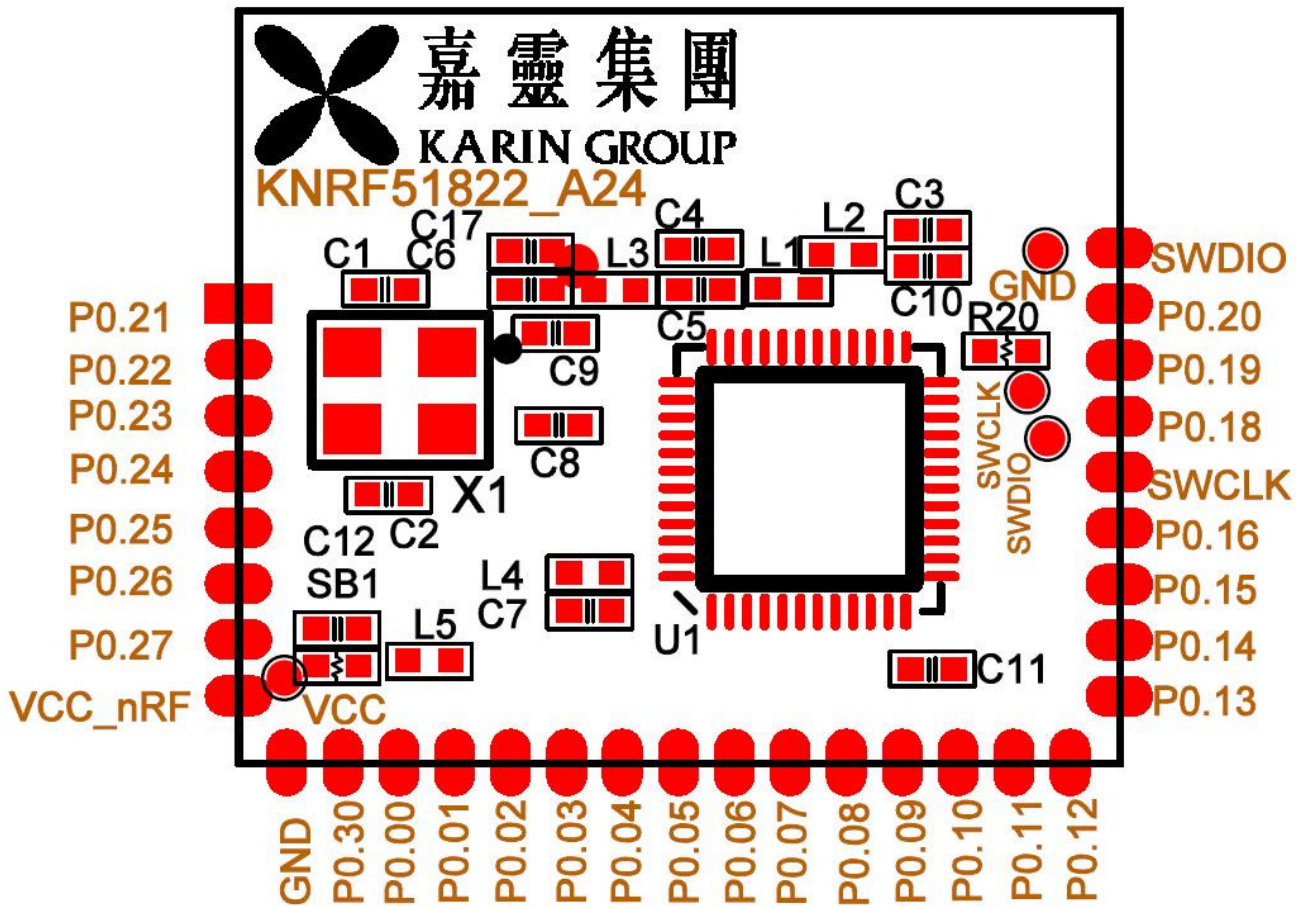
### Application

- Mobile Phone Accessories
- PC Peripherals
- Consumer Electronic Remote Control
- Proximity / Alert / Sport / Fitness / Healthcare Sensors
- Toys and Electronic Games

## Module Information

Part No.	Description
KNRF51822_A24	Core IC Nordic : nRF51822





## Technical Specifications

新靈集團  
NST

Parameters	
Supply voltage	1.8~3.6V DC
Current consumption	13mA typ
PCB Size	20mm x 17mm
Operating temperature	-25 to + 75 °C
Frequency range	2400 – 2483.5 MHz
Tx power	+4 to -20 dBm
Rx sensitivity	-93 dBm typ
Antenna	PCB Antenna

This product specification contains final product specifications. We reserve the right to make changes at any time without notice in order to improve design and supply the best possible product.