

## SAR Test Plan

### Device description:

**FCC ID:** ROSTEMPUSIC-2

#### - Module Included:

- **GSM - FCC ID:** QIPMC55i
- **Bluetooth - FCC ID:** QOQWT11
- **Wi-Fi - FCC ID:** MQ4SDW11G

The **Tempus IC** is a multi-parameter vital signs monitor which connects to a dedicated Response Centre. Connection is achieved using different communications technologies:

The device under test supports the following technologies listed below

1. GSM850 Voice\*, GPRS850 Class 10 Data with a maximum of 2-uplink timeslot
2. PCS1900 Voice\*, GPRS1900 Class 10 Data with a maximum of 2-uplink timeslot
3. Wi-Fi 802.11b/g data allocated mode
4. Bluetooth Basic Rate / EDR data allocated mode (Bluetooth is only used for connecting to peripheral devices e.g. headset and not used as a method to connect to the response centre)

GSM850 and PCS1900 voice calls, although possible within the hardware are not available to the end user within the software application that runs on the device (no access to any other application is available to the end user). All voice communication undertaken by the end user is done via VOIP on pre-defined and configured data connections setup and controlled by the application the EUT runs.

GSM and WIFI cannot be run at the same time as each other, refer to the Modes Menu on your Tempus for details of what communications systems it can be used with.

A physician may use the **Tempus IC** as a stand-alone diagnostic device (without it being connected to the Response Centre).

The **Tempus IC** provides the following information about the patient from its sensors:

- Pulse rate, Oxygen saturation ( $SpO_2$ ), Blood pressure, 12 lead Electrocardiograph (ECG), End tidal  $CO_2$  (ETCO<sub>2</sub>), Respiration rate, Temperature, Blood glucose level

These readings are transmitted via a communications link to a computer at a response centre which enables the physician to see all the vital signs data.

Additionally, the **Tempus IC** includes a colour video camera which is capable of sending colour still images to the response centre.

The following sections describe how each of the sensors, the camera and communications systems work.

The **Tempus IC** consists of an enclosure which is over-moulded with rubber to make it resistant to shock. The enclosure also includes a rear clip which provides storage for the  $SpO_2$  sensor, the NIBP cuff and communications cable.

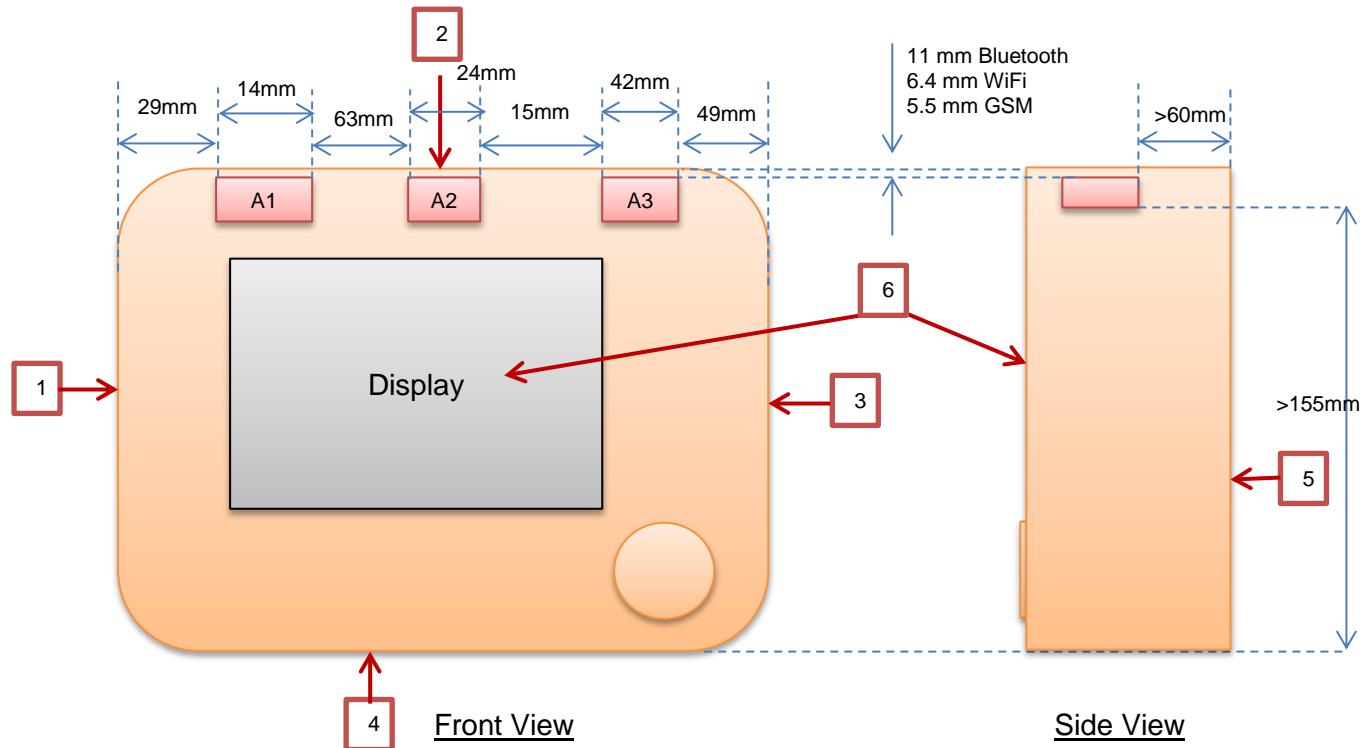


The front of the **Tempus IC** has a large screen which is fitted with a touch-screen.

The front panel houses two keypads which are graphically labelled with their function. Also present is a jog wheel which can be used to scroll through instructions.

The screen orientation of the device is fixed and does not rotate: Hence the user can only use the device as per the photo above

### Device Antenna Location and Dimensions:



**Table 1: Key:**

Configuration Edge	Left-Edge	Top-Edge	Right-Edge	Primary-Landscape	Base	Display
Number Reference	(1)	(2)	(3)	(4)	(5)	(6)

**Table 2: Antenna Type:**

Antenna	Bluetooth	Wi-Fi	GSM
Antenna Reference	A1	A2	A3

### Standalone Transmission SAR test consideration:

The device under test supports the following technologies listed below

1. GSM850 /GPRS
2. PCS1900 /GPRS
3. Wi-Fi 802.11b/g
4. Bluetooth

### Simultaneous Transmission SAR test consideration:

The device under test support simultaneous transmission and the following combination below are applicable to the device operation:

**Table 3: Simultaneous Transmission Support:**

GSM	Wi-Fi	Bluetooth	Simultaneously Transmit
x	x	x	No
x	x		No
x		x	Yes
	x	x	Yes

Table 4: Device Test Details:

Exposure Position	Technology	Band (MHz)	Modes	Config Edge	Max Avg. Output power Including Tolerance		Threshold Power for exclusion at 0mm (mW)	Test Separation Device Edge-to-User (mm)	Antenna-to-Edge Separation for Test (mm)	SAR Evaluation required (Yes / No)
					dBm	mW				
Lap-held	GSM	850	Data	(5)	32.56	1803	16	0	>60mm	Yes
	GSM	1900	Data	(5)	29.99	998	11	0	>60mm	Yes
	Wi-Fi	2450	Data	(5)	11.89	15.4	10	0	>60mm	Yes
	Bluetooth	2400	Data	(5)	13.4	22	10	0	>60mm	Yes
Hand-held	GSM	850	Data	(1)	32.56	1803	16	0	145mm	No
				(3)				0	49mm	Yes
	GSM	1900	Data	(1)	29.99	998	11	0	145mm	No
				(3)				0	49mm	Yes
	Wi-Fi	2450	Data	(1)	11.89	15.4	10	0	106mm	No
				(3)				0	106mm	YES
	Bluetooth	2400	Data	(1)	13.4	22	10	0	29mm	Yes
				(3)				0	193mm	No
Body-Worn	GSM	850	Data	(4)	32.56	1803	16	0	>155mm	No
				(5)				0	>60mm	Yes
	GSM	1900	Data	(4)	29.99	998	11	0	>155mm	No
				(5)				0	>60mm	Yes
	Wi-Fi	2450	Data	(4)	11.89	15.4	10	0	>155mm	No
				(5)				0	>60mm	Yes
	Bluetooth	2400	Data	(4)	13.4	22	10	0	>155mm	No
				(5)				0	>60mm	Yes

**Note:**

1. The device will be evaluated with consideration for the Lap-held, hand-held and body-worn configurations
2. The applicable edges are indicated in table 4 above and the most conservative edge per technology antenna and user scenario will be tested.
3. As hand-held most conservative edges are (1) and (3) these edges will be considered for evaluation.
4. With the device in the lap-held configuration the body worn configuration must be addressed for edges (4) and (5). The most conservative configuration is evaluated as indicated in table 4 above.
5. The screen orientation is fixed; therefore the separation distance from the user to the top is greater than 155mm. this configuration is therefore not considered for SAR evaluation.

**Proposed Test setup:**

The device under test will be evaluated with all accessories attached as per photo below in the configuration listed in table 4 of this document. The top of the device is not evaluated as the screen orientation is fixed, therefore the separation distance from the user to the top is greater than 155mm.

