

1

Description Software (Section 2.944 (c))

1.1

General software operational description.

1.2

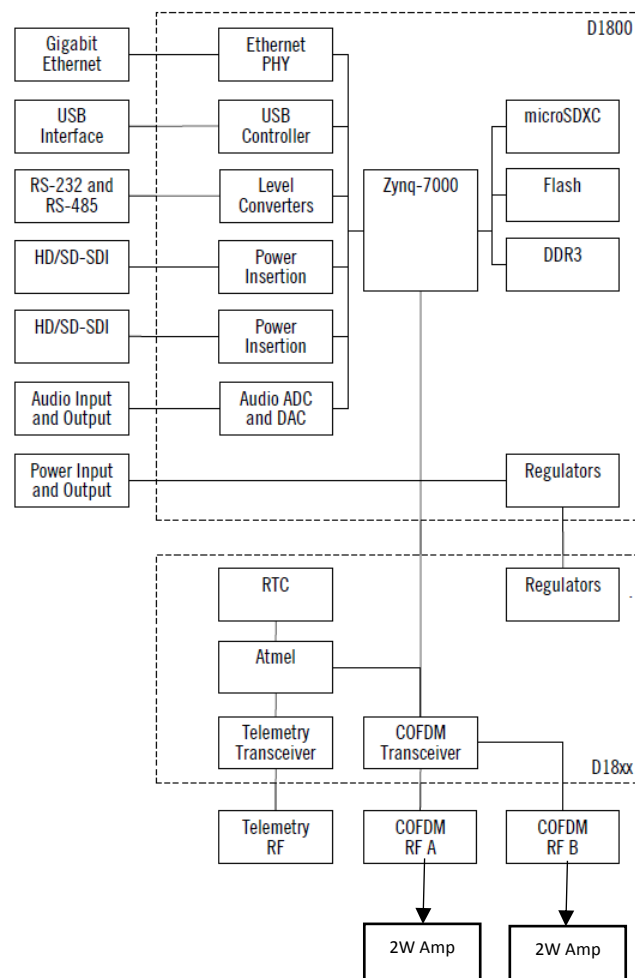
Describe all the radio frequency parameters that are modified by the software without any hardware changes.

DTC permit the changing of unit Frequency within the band selected (usually limited to 500MHz). The user is also able to change the output power and attenuation levels along with the transmission bandwidth. All other elements of the SDR are locked with no user accessible elements. The SDR code is also loaded at source within our factory and is not available for editing or amending.

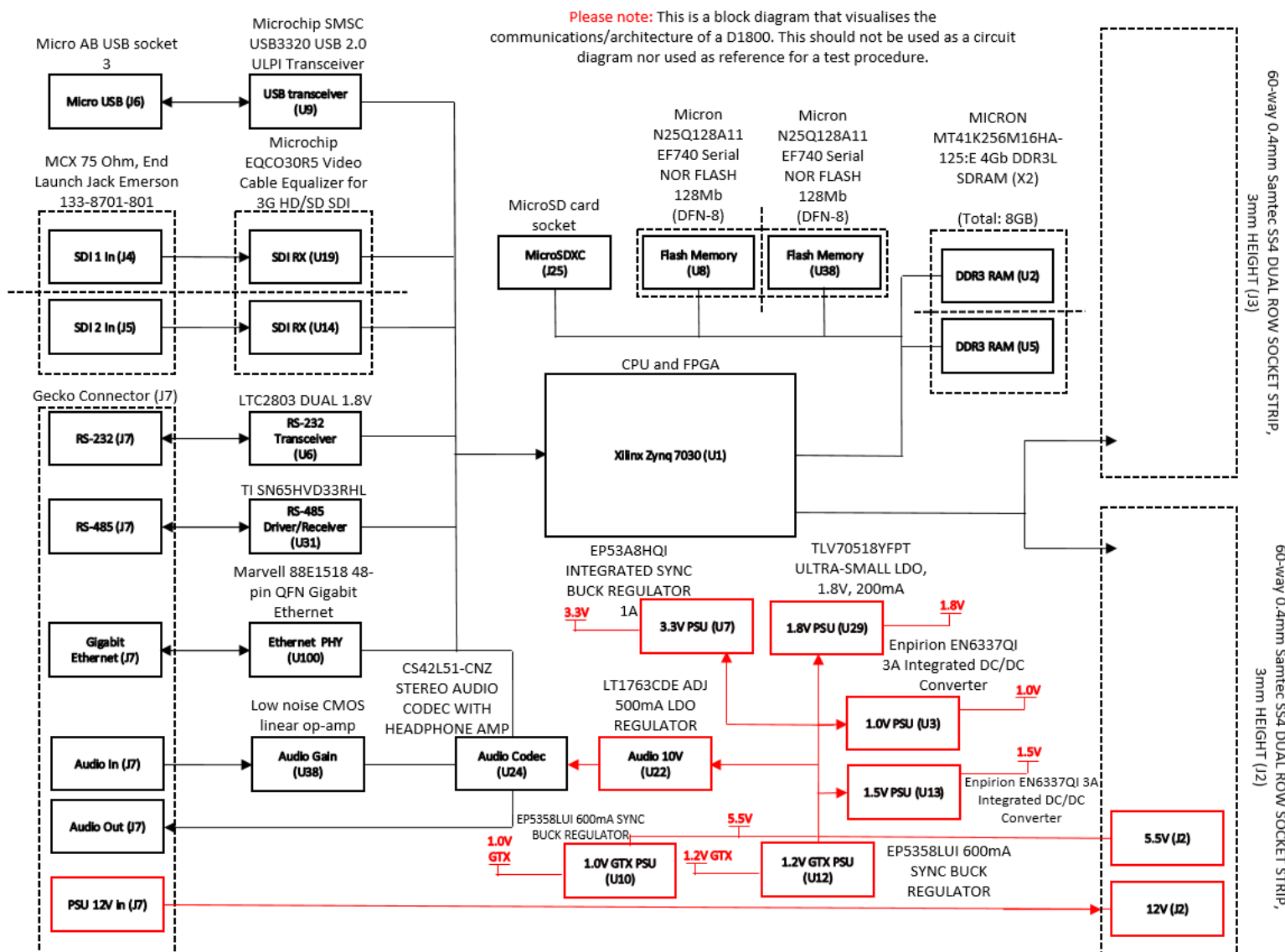
1.3

High level (simplified) block diagram of the software architecture.

#### System Components



**Figure 1 – Architecture/Block Diagram**



2

Labelling

2.1

How is the device to be labeled? Will the device have a single label or will it use an electronic label per Section 2.925 (e)?

Single exterior label

SOL8SDR-C-470043  
FCC ID: XRF SOL8SDR C470043

**DTC**  
Made in the UK



SOL8SDR-C-234091  
FCC ID: XRF SOL8SDRC234091

**DTC**  
Made in the UK



**DTC** SOL8SDR2x2W-P-234091  
This unit contains module FCC part:  
XRF SOL8SDRC234091

Made in the UK

FCC ID: XRF SOL8SDRP234091

IC ID: 8638A-SOL8SDR2x2W-P



8-18V 85W

## 2.2

How can the FCC verify, in the field, that the correct version of the software is running in the device? Submit a description of this capability and instructions for the FCC to use in the field to verify that proper software is operating in the device.

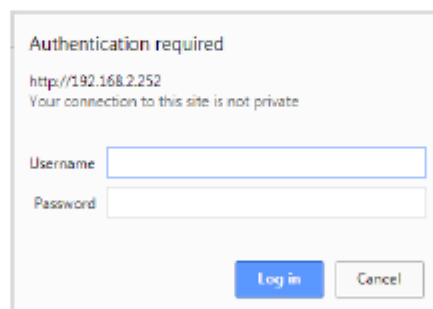
The software can only be loaded at the Factory and DTC do not permit customers to load their own software. The SDR code is not Open Source, and is locked.

Software verification can take place by using the Ethernet terminal and reviewing the Software level on the global; information tab as below:- The Engineering page will display the software level.

## 4.5 Using a Web Browser Application

### Connect Using a Web Browser Application

1. On your PC, open a **web browser** application.
2. In the **Address Bar**, enter the IP address of the SOL8SDR that was discovered using Node Finder.
3. The **Windows Security** dialog box opens.



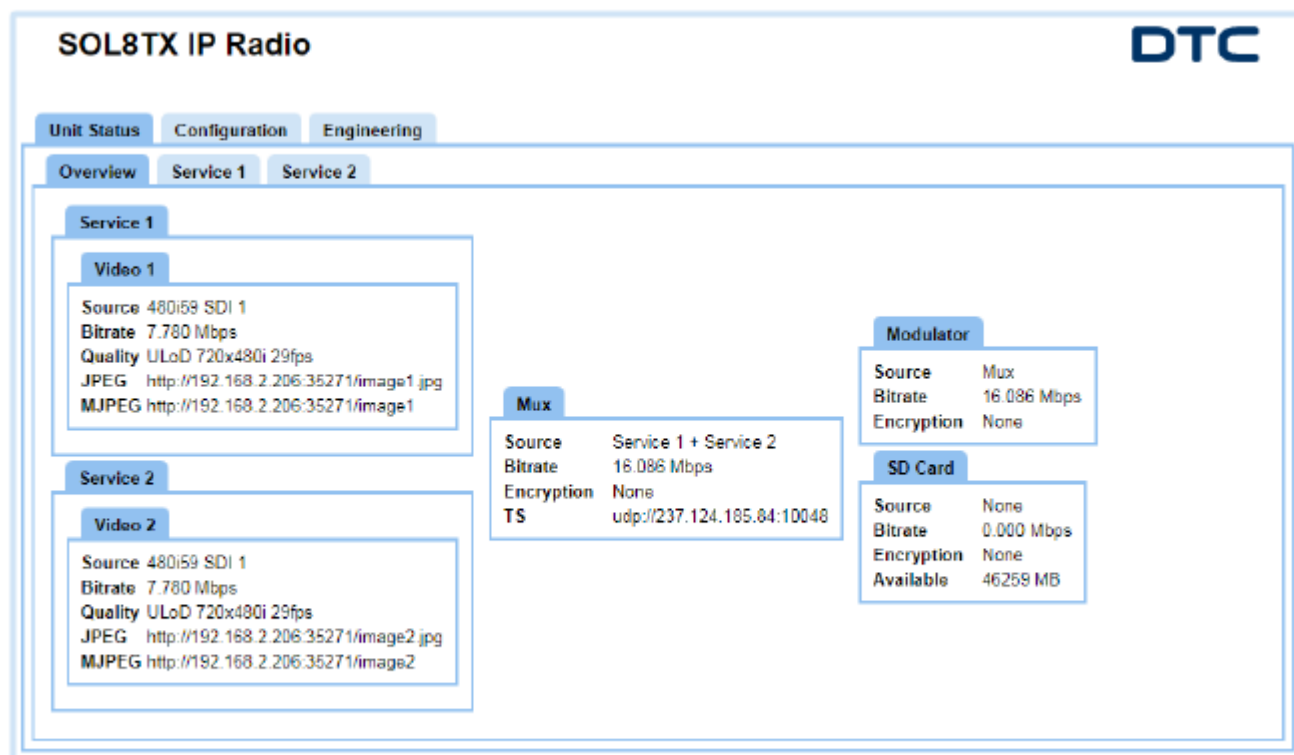
Authentication required  
http://192.168.2.252  
Your connection to this site is not private

Username

Password

4. Leave the **Username** blank and enter the **Password** as **Eastwood** (this is case sensitive).
5. Click **OK**.
6. Your **SOL8SDR Control Page** opens.

The actual appearance of the web browser will depend on the SDR application that is configured in the **Configuration>Global** tab. This is an example of a SOL8SDR configured as a transmitter.



**SOL8TX IP Radio** **DTC**

Unit Status Configuration Engineering

Overview Service 1 Service 2

**Service 1**

**Video 1**

Source 480i59 SDI 1  
Bitrate 7.780 Mbps  
Quality ULoD 720x480i 29fps  
JPEG http://192.168.2.206:35271/image1.jpg  
MJPEG http://192.168.2.206:35271/image1

**Service 2**

**Video 2**

Source 480i59 SDI 1  
Bitrate 7.780 Mbps  
Quality ULoD 720x480i 29fps  
JPEG http://192.168.2.206:35271/image2.jpg  
MJPEG http://192.168.2.206:35271/image2

**Mux**

Source Service 1 + Service 2  
Bitrate 16.086 Mbps  
Encryption None  
TS udp://237.124.185.84:10048

**Modulator**

Source Mux  
Bitrate 16.086 Mbps  
Encryption None

**SD Card**

Source None  
Bitrate 0.000 Mbps  
Encryption None  
Available 46259 MB

Figure 4-4 SOL8SDR Web Browser Application

## 2.3

Describe the means by which software version numbers can be related to any future Class III permissive changes. For example: v01.01 was the software version for the Initial grant. Version v17.01 was for the first Class III Change. Any Version between V01.001 to V16.99 is assumed to be representative of the equipment exhibits in the initial grant. Version V22.15 would represent the version as modified by the Class III change.

Hardware cannot be changed, hence only changes are SW. Software Versions numbers are recorded using an SVN repository with DTC. The SOL8SDR-C is undergoing continual development and increased feature set on a monthly basis. In all cases the version number will increment in minor updates as features are added ie 3.1.1 to 3.2. If new Modes are added then a significant update in Version number is applied eg 3.4 to 4.0.2.

[3.0.1](#)      New token passing algorithm

[3.1.0](#)      New bits and bug fixes

[3.1.1](#)      Fix to address hang with corrupted channel bandwidth

[3.2.0](#)      USB audio and fix for video

[3.3.0](#)      Unicast return for multicast data channel

[3.4.0](#)      Manual multicast routing added

[4.0.2](#)      Added Receiver mode

[4.2.0](#)      G.726 audio coded, various bug fixes

[4.3.1](#)      Fixes for low temperature operation

[4.3.4](#)      New IA algorithm VLAN fix and RF cals fix

## 3

### Security

#### 3.1

Describe the procedure that ensures that third parties (Professional installers, qualified personnel, authorized certified technicians, end users, etc. – not direct employees) cannot operate US sold devices on any other regulatory domain frequencies, or in any manner that is in violation of the certification.

Units can only have adjustments to frequency and bandwidth and output power as stated previously, users are able to configure these settings. To change these setting the user would need the password to allow entry to the unit, which only the purchaser would have. If the purchaser decides to move the units frequency outside the FCC band of 2.4-2.48, then they would need to utilise the relevant license to operate in this band.

### 3.2

Explain if any third parties have the capability to operate a US sold device on any other regulatory domain frequencies, or in any manner that is in violation of the certification. As above.

### 3.3

Describe how the software updates are distributed for all regulatory domains and what procedures ensures that a product sold in the US can only operate as granted on US frequencies and at authorized radio parameters.

DTC offer a web portal only to customers who have purchased units and have approved and vetted access to the portal. DTC recommend frequency settings inline with the compliance of FCC however given the secure nature of most customers DTC is unable to confirm what exact frequency the end customer uses within the 2.0-2.7Ghz band.

### 3.4

If the product cannot be modified by third parties and can only operate as granted on US frequencies and with authorized radio parameters, explain how this is achieved.

The unit can only operate on the appropriate frequency band as defined earlier.

### 3.5

What stops third parties from loading non-US versions of software onto products intended for US sale?

No access is permitted to load non DTC software.

### 3.6

Can third parties make factory level changes to reload non-US domain codes, etc. No.

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## 4

Unauthorized changes (hack) to the software (i

### 4.1

Describe how open source is the operating code for granted RF properties. Describe the difficulty and proprietary nature of the code that controls the RF parameters as granted.

DTC code is not OPEN SOURCE it is locked and installed at the factory and is under password control by the user/purchaser. The frequency information is set at the factory as a unit type, and this cannot

be over ridden. RF control is shown as below, where the user is only able to select a frequency from the allowed band and likewise with the bandwidth from a drop down box.

Click **Apply** at the bottom of the page to save the settings. These settings **must** be matched at the receiver.

SOL8TX IP Radio

DTC

Unit StatusConfigurationEngineering

Global12345678910111213141516

UnitEncoder 1Encoder 2AudioDataStreamerModulator

Mod

Modulation ModeDVB-T

Modulation On☒

Frequency2300MHz

Output Attenuation17dB

RF Output PortA

PA LinearityHigh

DVB-T Settings

Bandwidth8 MHz

Constellation16-QAM

FEC Rate5/6

Guard Interval1/32

Dual PedestalOff

Spectrum Inversion☐

ApplySaveRefresh