LOCOSTO PROGRAM

APN222

Application note

RF band arrangement

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Table of content:

REVISION HISTORY

Rev#	Date	Author	Reason for change
1.0	10-19-05	E. N M. V.	Creation
1.1	01-09-06	F. C. M. V.	More comments in section 3: -Reason for chosen configurations. -DRP calibration impact. (input frequency for DCXO calibration) -TPU impact (configuration selection)
1.2	02-14-06	F. C.	-Clearer description for unused RX inputs.
1.3	04-04-06	F. C.	-updated table of section 3 -added section 4
1.4	07-04-06	F. C.	Typo in figures 850=>1900
1.5	04-04-07	F. C.	Added section 7: Hardware configurations for a unique PCB used in Tri-band US and Tri-band EU

Reference documents

[1] TI internal: Locosto/Locostolite SW_implementation_proposal for dual/triple/quad band support

1 Scope:

Scope of this document is to indicate the hardware mapping for dual/triple and quad band support for the Locosto platform.

2 Important notice:

This feature will be embedded in alpha final (drp script 134.00 or newer).

3 Band arrangement for Locosto platform:

To be able to use same PCB for different configurations of dual band or tri band and because some Locosto DRP calibrations are band/RF input dependant, TI has decided to support all following configurations.
These configurations allow supporting all dual/tri/quad band approaches and minimize the complexity of software changes to make DRP calibration functional in all cases.
The software is unique. The configuration choice has to be done in TPU file l1_rf61.h by changing the variable "RF_BAND_SYSTEM_INDEX"
See table here below for correct "RF_BAND_SYSTEM_INDEX" value.

PA module or RX/TX switch TSPACT description in TPU file tpudrv61.h must be aligned with the chosen configuration.

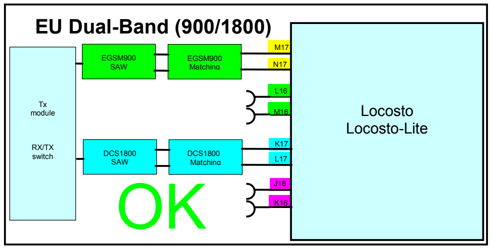
Preferred low band input are M17-N17 (GSM850) and preferred high band input are K17-L17 (DCS) because they are at the edge of the chip while the EGSM900 and PCS1900 are in 2nd row.

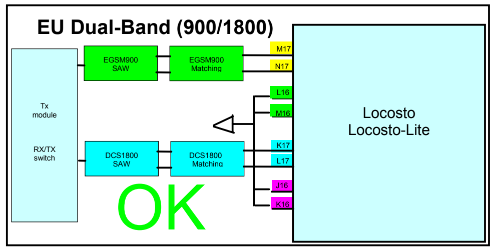
Note that Locosto DCXO calibration (using drpcal 3 ETM command) requires an input signal at 869.2 MHz on GSM850 input (M17-N17)
For Dual-EU and Tri-EU configurations (which do not support 850 band), the input signal frequency must be 925.2 MHz on GSM850 input (M17-N17) for DCXO calibration.

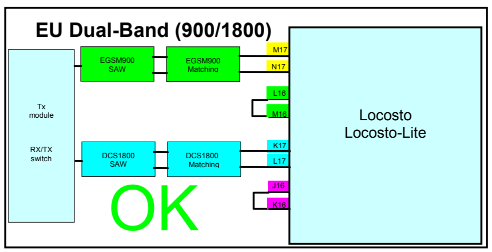
In case inputs are unused they can be kept floating or grounded.

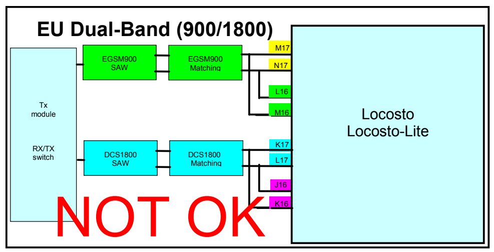
RX inputs from different bands must not be shorted on PCB (unless both are unused).

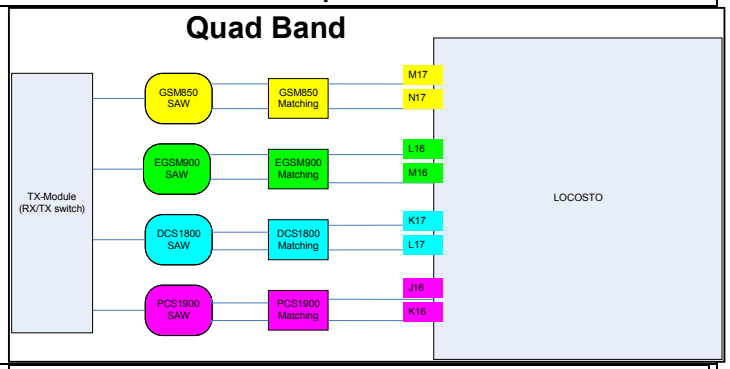
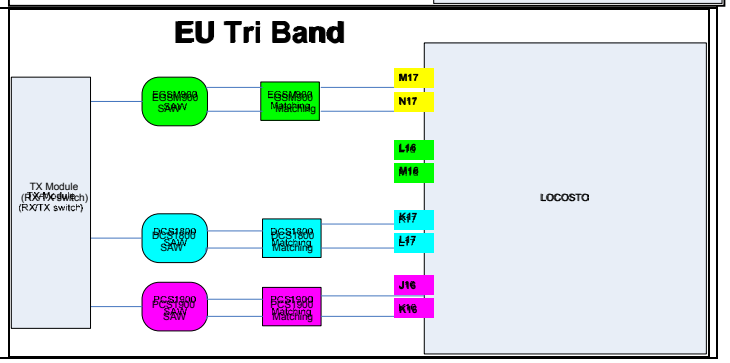
Examples

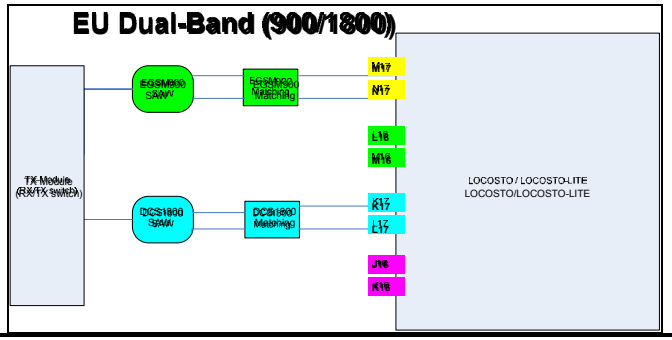
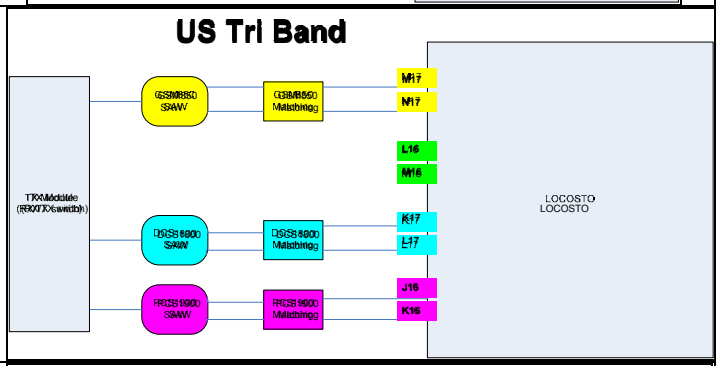
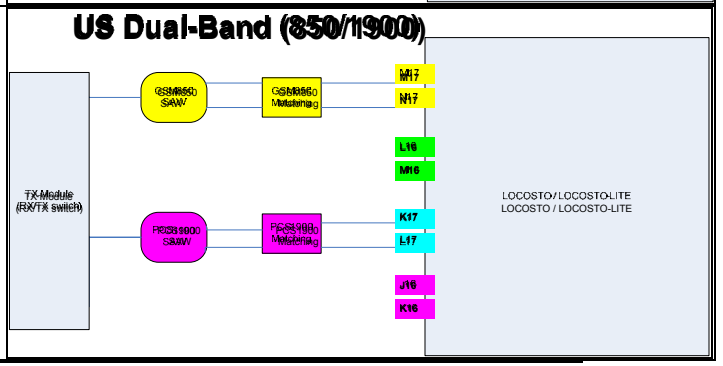

EU Dual-Band (900/1800)
Tx module
RX/TX switch
EGSM900 SAW
EGSM900 Matching
DCS1800 SAW
DCS1800 Matching
M17
N17
L16
M16
K17
L17
J16
K16
Locosto
Locosto-Lite
OK

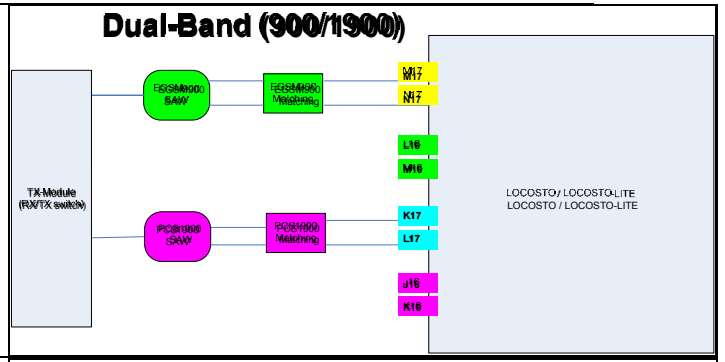
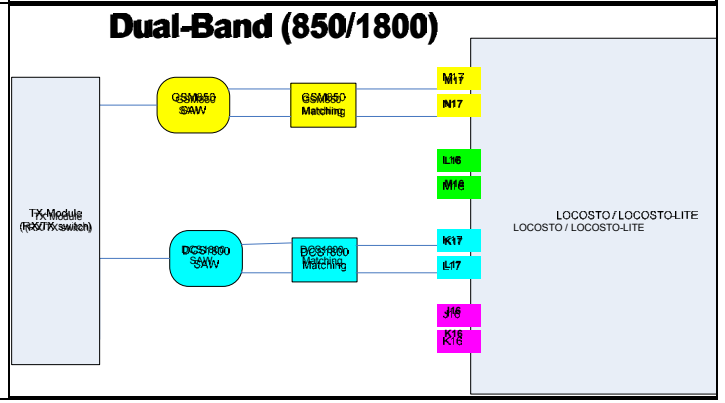

EU Dual-Band (900/1800)
Tx module
RX/TX switch
EGSM900 SAW
EGSM900 Matching
DCS1800 SAW
DCS1800 Matching
M17
N17
L16
M16
K17
L17
J16
K16
Locosto
Locosto-Lite
OK


EU Dual-Band (900/1800)
Tx module
RX/TX switch
EGSM900 SAW
EGSM900 Matching
DCS1800 SAW
DCS1800 Matching
M17
N17
L16
M16
K17
L17
J16
K16
Locosto
Locosto-Lite
OK


EU Dual-Band (900/1800)
Tx module
RX/TX switch
EGSM900 SAW
EGSM900 Matching
DCS1800 SAW
DCS1800 Matching
M17
N17
L16
M16
K17
L17
J16
K16
Locosto
Locosto-Lite
NOT OK

ID	PCB configuration	Note	Platform	RF_BAND_SYSTEM_INDEX	PCB implementation
0	G850+EGSM+DCS+PCS	Quad band	Locosto	RF_QUADBAND	
1	EGSM+DCS+PCS	EU Tri band	Locosto	RF_EU_TRIBAND	

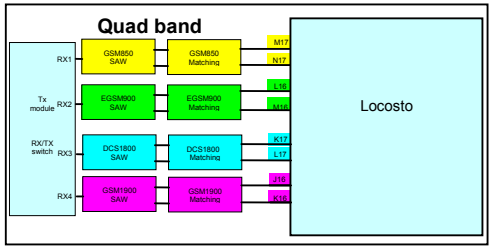
2	EGSM+DCS	Eu dual band	Locosto and Locostolite	RF_EU_TRIBAND in alpha_final software and older (will become RF_EU_DUALBAND In next releases)	
3	G850+DCS+PCS	US Tri band	Locosto	RF_QUADBAND in alpha_final software and older (will become RF_US_TRIBAND In next releases)	
4	G850+PCS	US dual band	Locosto and Locostolite	RF_US_DUALBAND	

5	EGSM+PCS	EGSM/PCS dual band	Locosto and Locostolite	RF_PCS1900_900_DUALBAND	
6	G850+DCS	G850/DCS dual band	Locosto and Locostolite	RF_QUADBAND in alpha_final software and older (will become RF_DCS1800_850_DUALBAND In next releases)	

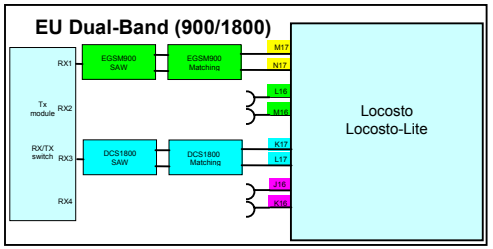
4 Comparison of Quad versus EU Dual configuration in case of Quad band PA Skyworks 77506A

4.1 Hardware implementation

Quad band



EU Dual Band (GSM900-DCS1800)



4.2 PA band definition in TPU file tpudrv61.h is common for both application

⇨ TSPACT definition in tpudrv61.h (example)

```
// - RF signals for Skyworks PAM -
#define BS1           BIT_7     //TSPACT 15
#define BS2           BIT_5     //TSPACT 13
#define TX_EN         BIT_6     //TSPACT 14
#define VL            BIT_4     //TSPACT 12
```

⇨ PA control logic table definition in tpudrv61.h

Table 2. SKY77506 Mode Control Logic

Mode	VLogic	Input Control Bits		
		TX_EN	BS1F	BS2
STANDBY	0	X (1)	X (1)	X (1)
GSM RX1	1	0	0	0
GSM RX2	1	0	0	1
DCS RX3	1	0	1	0
DCS RX4	1	0	1	1
GSM_TX	1	1	0	X (1)
DCS_TX	1	1	1	X (1)

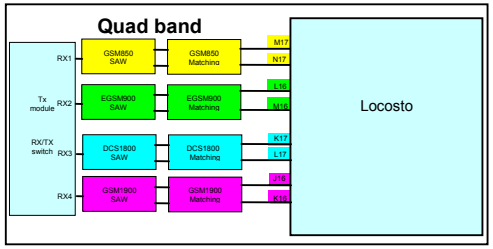
(1) X = Don't care

```
#define RU_900      ( BS2 | VL )
#define RD_900      ( BS2 | VL )
#define TU_900      ( TX_EN | VL )
#define TD_900      ( BS2 | VL )

#define RU_850      ( VL )
#define RD_850      ( VL )
#define TU_850      ( TX_EN | VL )
#define TD_850      ( VL )

#define RU_1800     ( BS1 | VL )
#define RD_1800     ( BS1 | VL )
#define TU_1800     ( BS1 | TX_EN | VL )
#define TD_1800     ( BS1 | VL )

#define RU_1900     ( BS1 | BS2 | VL )
#define RD_1900     ( BS1 | BS2 | VL )
#define TU_1900     ( BS1 | TX_EN | VL )
#define TD_1900     ( BS1 | BS2 | VL )
```

4.3 How it works according to the selection of RF_BAND_SYSTEM_INDEX:

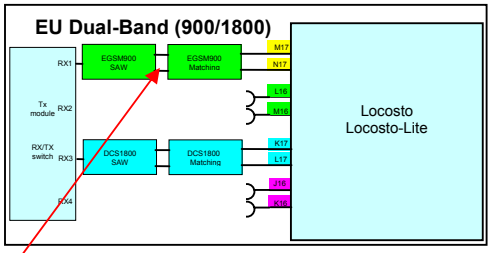
⇨ Configuration is chosen in TPU file l1_rf61.h:

Quad band



When selecting GSM900 in EU-dual, the GSM850 path is selected for both PA and Locosto

EU Dual Band (GSM900-DCS1800)



#define RF_BAND_SYSTEM_INDEX RF_QUADBAND

#define RF_BAND_SYSTEM_INDEX RF_EU_TRIBAND
(Only change to be done in comparison with quad band)

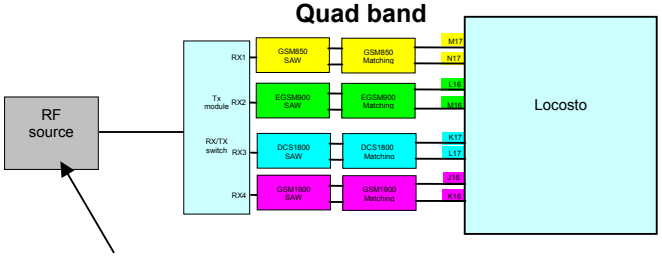
⇨ According to the selected configuration, correct band on hardware is selected in TPU file tpudrv61.c:

```
#if RF_BAND_SYSTEM_INDEX == RF_QUADBAND
struct rf_path_s rf_path[] = {    //same index used as for band_config[] - 1
  { RU_900,  RD_900,  TU_900,  TD_900,  (struct synth_s *)synth_900 }, //EGSM
  { RU_1800, RD_1800, TU_1800, TD_1800, (struct synth_s *)synth_1800}, //DCS
  { RU_1900, RD_1900, TU_1900, TD_1900, (struct synth_s *)synth_1900}, //PCS
  { RU_850,  RD_850,  TU_850,  TD_850,  (struct synth_s *)synth_850 }, //GSM850};
#endif
#if RF_BAND_SYSTEM_INDEX == RF_EU_TRIBAND
struct rf_path_s rf_path[] = {    //same index used as for band_config[] - 1
  { RU_850,  RD_850,  TU_900,  TD_900,  (struct synth_s *)synth_900 }, //EGSM
  { RU_1800, RD_1800, TU_1800, TD_1800, (struct synth_s *)synth_1800}, //DCS
  { RU_1900, RD_1900, TU_1900, TD_1900, (struct synth_s *)synth_1900}, //PCS
  { RU_850,  RD_850,  TU_850,  TD_850,  (struct synth_s *)synth_850 }, //GSM850};
#endif
#if RF_BAND_SYSTEM_INDEX == RF_US_DUALBAND
struct rf_path_s rf_path[] = {    //same index used as for band_config[] - 1
  { RU_900,  RD_900,  TU_900,  TD_900,  (struct synth_s *)synth_900 }, //EGSM
  { RU_1800, RD_1800, TU_1800, TD_1800, (struct synth_s *)synth_1800}, //DCS
  { RU_1800, RD_1800, TU_1900, TD_1900, (struct synth_s *)synth_1900}, //PCS
  { RU_850,  RD_850,  TU_850,  TD_850,  (struct synth_s *)synth_850 }, //GSM850};
#endif
```

```
#if RF_BAND_SYSTEM_INDEX == RF_PCS1900_900_DUALBAND
struct rf_path_s rf_path[] = {    //same index used as for band_config[] - 1
  { RU_850,  RD_850,  TU_900,  TD_900,  (struct synth_s *)synth_900 }, //EGSM
  { RU_1800, RD_1800, TU_1800, TD_1800, (struct synth_s *)synth_1800}, //DCS
  { RU_1800, RD_1800, TU_1900, TD_1900, (struct synth_s *)synth_1900}, //PCS
  { RU_850,  RD_850,  TU_850,  TD_850,  (struct synth_s *)synth_850 }, //GSM850};
#endif
```

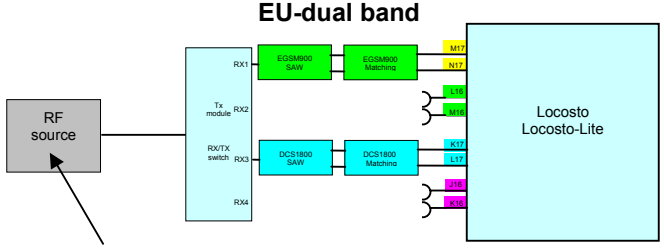
4.4 Hardware procedure to calibrate DCXO coarse tuning (drpcal 3)

Quad band



RF sine wave
Level=-70dBm
RF frequency=869.2MHz

EU-dual band

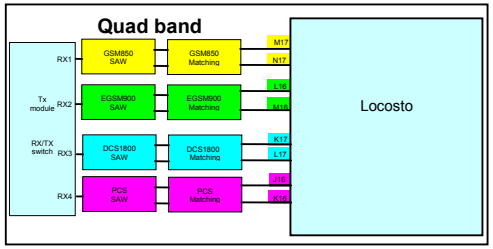


RF sine wave
Level=-70dBm
RF frequency=**925.2MHz**

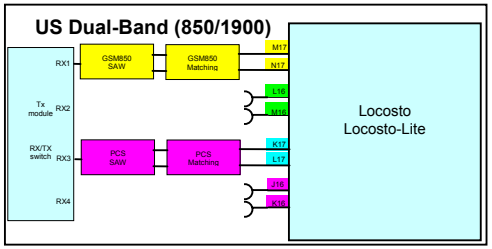
5 Comparison of Quad versus US Dual configuration in case of Quad band PA Skyworks 77506A, using same PCB as in chapter 4.

5.1 Hardware implementation

Quad band



US Dual Band (GSM850-PCS)



5.2 PA band definition in TPU file tpudrv61.h is common for both application

⇨ TSPACT definition in tpudrv61.h (example)

```
// - RF signals for Skyworks PAM -
#define BS1           BIT_7     //TSPACT 15
#define BS2           BIT_5     //TSPACT 13
#define TX_EN         BIT_6     //TSPACT 14
#define VL            BIT_4     //TSPACT 12
```

⇨ PA control logic table definition in tpudrv61.h

Table 2. SKY77506 Mode Control Logic

Mode	VLogic	Input Control Bits		
		TX_EN	BS1F	BS2
STANDBY	0	X (1)	X (1)	X (1)
GSM RX1	1	0	0	0
GSM RX2	1	0	0	1
DCS RX3	1	0	1	0
DCS RX4	1	0	1	1
GSM_TX	1	1	0	X (1)
DCS_TX	1	1	1	X (1)

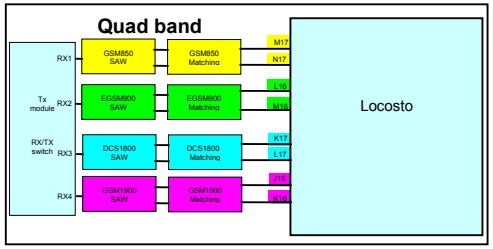
(1) X = Don't care

```
#define RU_900      ( BS2 | VL )
#define RD_900      ( BS2 | VL )
#define TU_900      ( TX_EN | VL )
#define TD_900      ( BS2 | VL )

#define RU_850      ( VL )
#define RD_850      ( VL )
#define TU_850      ( TX_EN | VL )
#define TD_850      ( VL )

#define RU_1800     ( BS1 | VL )
#define RD_1800     ( BS1 | VL )
#define TU_1800     ( BS1 | TX_EN | VL )
#define TD_1800     ( BS1 | VL )

#define RU_1900     ( BS1 | BS2 | VL )
#define RD_1900     ( BS1 | BS2 | VL )
#define TU_1900     ( BS1 | TX_EN | VL )
#define TD_1900     ( BS1 | BS2 | VL )
```

5.3 How it works according to the selection of RF_BAND_SYSTEM_INDEX:

⇨ Configuration is chosen in TPU file l1_rf61.h:

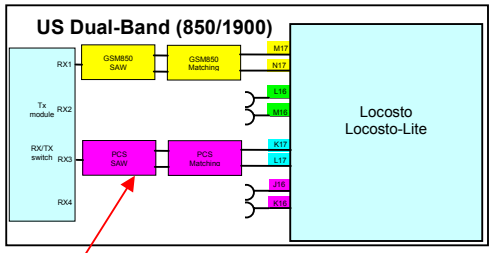
Quad band



#define RF_BAND_SYSTEM_INDEX RF_QUADBAND

When selecting PCS in US-dual, the DCS path is selected for both PA and Locosto

US Dual Band (GSM850-PCS)



#define RF_BAND_SYSTEM_INDEX RF_US_DUALBAND
(Only change to be done in comparison with quad band)

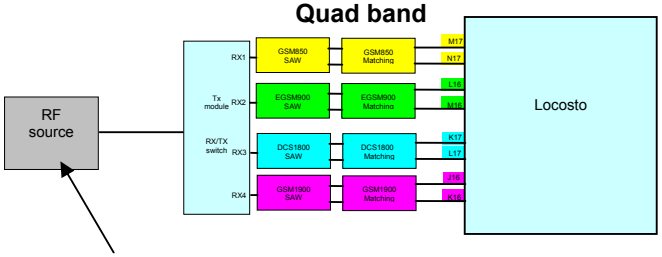
⇨ According to the selected configuration, correct band on hardware is selected in TPU file tpudrv61.c:

```
#if RF_BAND_SYSTEM_INDEX == RF_QUADBAND
struct rf_path_s rf_path[] = {    //same index used as for band_config[] - 1
  { RU_900,  RD_900,  TU_900,  TD_900,  (struct synth_s *)synth_900 }, //EGSM
  { RU_1800, RD_1800, TU_1800, TD_1800, (struct synth_s *)synth_1800}, //DCS
  { RU_1900, RD_1900, TU_1900, TD_1900, (struct synth_s *)synth_1900}, //PCS
  { RU_850,  RD_850,  TU_850,  TD_850,  (struct synth_s *)synth_850 }, //GSM850};
#endif
#if RF_BAND_SYSTEM_INDEX == RF_EU_TRIBAND
struct rf_path_s rf_path[] = {    //same index used as for band_config[] - 1
  { RU_850,  RD_850,  TU_900,  TD_900,  (struct synth_s *)synth_900 }, //EGSM
  { RU_1800, RD_1800, TU_1800, TD_1800, (struct synth_s *)synth_1800}, //DCS
  { RU_1900, RD_1900, TU_1900, TD_1900, (struct synth_s *)synth_1900}, //PCS
  { RU_850,  RD_850,  TU_850,  TD_850,  (struct synth_s *)synth_850 }, //GSM850};
#endif
#if RF_BAND_SYSTEM_INDEX == RF_US_DUALBAND
struct rf_path_s rf_path[] = {    //same index used as for band_config[] - 1
  { RU_900,  RD_900,  TU_900,  TD_900,  (struct synth_s *)synth_900 }, //EGSM
  { RU_1800, RD_1800, TU_1800, TD_1800, (struct synth_s *)synth_1800}, //DCS
  { RU_1800, RD_1800, TU_1900, TD_1900, (struct synth_s *)synth_1900}, //PCS
  { RU_850,  RD_850,  TU_850,  TD_850,  (struct synth_s *)synth_850 }, //GSM850};
#endif
```

```
#if RF_BAND_SYSTEM_INDEX == RF_PCS1900_900_DUALBAND
struct rf_path_s rf_path[] = {    //same index used as for band_config[] - 1
  { RU_850,  RD_850,  TU_900,  TD_900,  (struct synth_s *)synth_900 }, //EGSM
  { RU_1800, RD_1800, TU_1800, TD_1800, (struct synth_s *)synth_1800}, //DCS
  { RU_1800, RD_1800, TU_1900, TD_1900, (struct synth_s *)synth_1900}, //PCS
  { RU_850,  RD_850,  TU_850,  TD_850,  (struct synth_s *)synth_850 }, //GSM850};
#endif
```

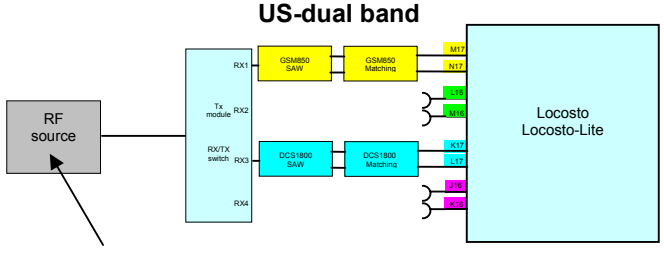
5.4 Hardware procedure to calibrate DCXO coarse tuning (drpcal 3)

Quad band



RF sine wave
Level=-70dBm
RF frequency=869.2MHz

US-dual band

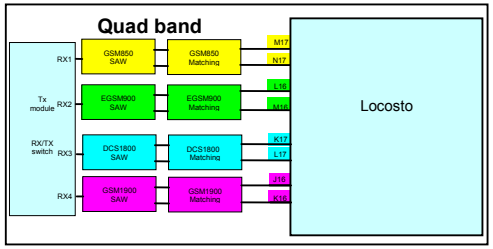


RF sine wave
Level=-70dBm
RF frequency=**869.2MHz**

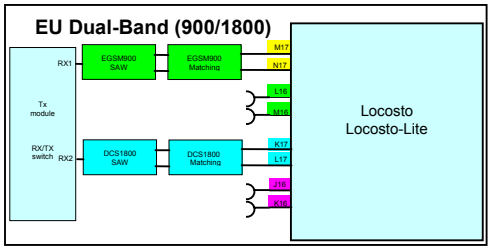
6 Comparison of Quad band configuration using Quad band Skywors PA 77506A versus EU Dual configuration using Dual band PA Triquint TQ6M4023E

6.1 Hardware implementation

Quad band



EU Dual Band (GSM900-DCS1800)



6.2 PA band definition in TPU file tpudrv61.h

⇨ TSPACT definition in tpudrv61.h (example)

```
// - RF signals for Skyworks PAM -
#define BS1           BIT_7     //TSPACT 15
#define BS2           BIT_5     //TSPACT 13
#define TX_EN         BIT_6     //TSPACT 14
#define VL            BIT_4     //TSPACT 12
```

```
// - RF signals for Triquint PAM -
#define VBS           BIT_7     //TSPACT 15
#define VTX           BIT_5     //TSPACT 13
#define VMOD_EN       BIT_6     //TSPACT 14
```

⇨ PA control logic table definition in tpudrv61.h

Table 2. SKY77506 Mode Control Logic

Mode	VLogic	Input Control Bits		
		TX_EN	BS1F	BS2
STANDBY	0	X (1)	X (1)	X (1)
GSM RX1	1	0	0	0
GSM RX2	1	0	0	1
DCS RX3	1	0	1	0
DCS RX4	1	0	1	1
GSM_TX	1	1	0	X (1)
DCS_TX	1	1	1	X (1)

(1) X = Don't care

Truth Table

	Control Voltage		
Operating Mode	Vmod_en	VTX	VBS
Tx-GSM 900	High	High	Low
Tx-DCS	High	High	High
Rx 1	High	Low	Low
Rx 2	High	Low	High
Sleep Mode	Low	Low	Low

All Rx ports can be used for any frequency band, there is no frequency selecting element at each port.

Even for a dual band PA module,
All bands have to be declared.
GSM900 has to be identical to GSM850.
DCS has to be identical to PCS.

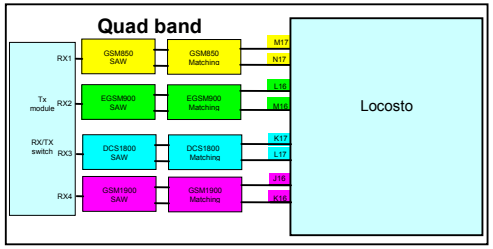
```
#define RU_                 ( BS2 | VL )
#define RD_                 ( BS2 | VL )
#define TU_900              ( TX_EN | VL )
#define TD_900              ( BS2 | VL )

#define RU_850              ( VL )
#define RD_850              ( VL )
#define TU_850              ( TX_EN | VL )
#define TD_850              ( VL )

#define RU_1800             ( BS1 | VL )
#define RD_1800             ( BS1 | VL )
#define TU_1800             ( BS1 | TX_EN | VL )
#define TD_1800             ( BS1 | VL )

#define RU_1900             ( BS1 | BS2 | VL )
#define RD_1900             ( BS1 | BS2 | VL )
#define TU_1900             ( BS1 | TX_EN | VL )
#define TD_1900             ( BS1 | BS2 | VL )
```

```
#define RU_900              ( VMOD_EN )
#define RD_900              ( VMOD_EN )
#define TU_900              ( VMOD_EN | VTX )
#define TD_900              ( VMOD_EN )

#define RU_850              ( VMOD_EN )
#define RD_850              ( VMOD_EN )
#define TU_850              ( VMOD_EN | VTX )
#define TD_850              ( VMOD_EN )

#define RU_1800             ( VMOD_EN | VBS )
#define RD_1800             ( VMOD_EN | VBS )
#define TU_1800             ( VMOD_EN | VBS | VTX)
#define TD_1800             ( VMOD_EN | VBS )

#define RU_1900             ( VMOD_EN | VBS )
#define RD_1900             ( VMOD_EN | VBS )
#define TU_1900             ( VMOD_EN | VBS | VTX)
#define RU_1900             ( VMOD_EN | VBS )
```

6.3 How it works according to the selection of RF_BAND_SYSTEM_INDEX:

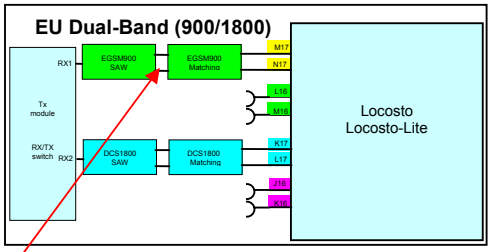
⇨ Configuration is chosen in TPU file l1_rf61.h:

Quad band



When selecting GSM900 in EU-dual, the GSM850 path is selected for both PA and Locosto

EU Dual Band (GSM900-DCS1800)



#define RF_BAND_SYSTEM_INDEX RF_QUADBAND

#define RF_BAND_SYSTEM_INDEX RF_EU_TRIBAND

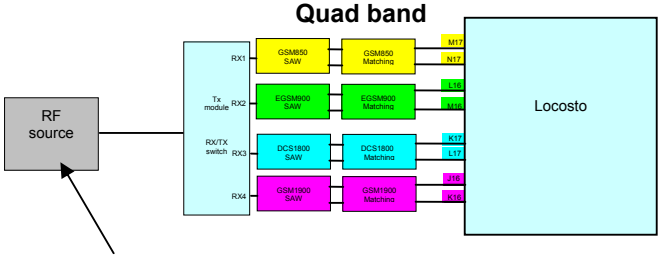
⇨ According to the selected configuration, correct band on hardware is selected in TPU file tpudrv61.c:

```
#if RF_BAND_SYSTEM_INDEX == RF_QUADBAND
struct rf_path_s rf_path[] = {    //same index used as for band_config[] - 1
  { RU_900,  RD_900,  TU_900,  TD_900,  (struct synth_s *)synth_900 }, //EGSM
  { RU_1800, RD_1800, TU_1800, TD_1800, (struct synth_s *)synth_1800}, //DCS
  { RU_1900, RD_1900, TU_1900, TD_1900, (struct synth_s *)synth_1900}, //PCS
  { RU_850,  RD_850,  TU_850,  TD_850,  (struct synth_s *)synth_850 }, //GSM850};
#endif
#if RF_BAND_SYSTEM_INDEX == RF_EU_TRIBAND
struct rf_path_s rf_path[] = {    //same index used as for band_config[] - 1
  { RU_850,  RD_850,  TU_900,  TD_900,  (struct synth_s *)synth_900 }, //EGSM
  { RU_1800, RD_1800, TU_1800, TD_1800, (struct synth_s *)synth_1800}, //DCS
  { RU_1900, RD_1900, TU_1900, TD_1900, (struct synth_s *)synth_1900}, //PCS
  { RU_850,  RD_850,  TU_850,  TD_850,  (struct synth_s *)synth_850 }, //GSM850};
#endif
#if RF_BAND_SYSTEM_INDEX == RF_US_DUALBAND
struct rf_path_s rf_path[] = {    //same index used as for band_config[] - 1
  { RU_900,  RD_900,  TU_900,  TD_900,  (struct synth_s *)synth_900 }, //EGSM
  { RU_1800, RD_1800, TU_1800, TD_1800, (struct synth_s *)synth_1800}, //DCS
  { RU_1800, RD_1800, TU_1900, TD_1900, (struct synth_s *)synth_1900}, //PCS
  { RU_850,  RD_850,  TU_850,  TD_850,  (struct synth_s *)synth_850 }, //GSM850};
#endif
#if RF_BAND_SYSTEM_INDEX == RF_PCS1900_900_DUALBAND
```

```
struct rf_path_s rf_path[] = {    //same index used as for band_config[] - 1
  { RU_850,  RD_850,  TU_900,  TD_900,  (struct synth_s *)synth_900 }, //EGSM
  { RU_1800, RD_1800, TU_1800, TD_1800, (struct synth_s *)synth_1800}, //DCS
  { RU_1800, RD_1800, TU_1900, TD_1900, (struct synth_s *)synth_1900}, //PCS
  { RU_850,  RD_850,  TU_850,  TD_850,  (struct synth_s *)synth_850 }, //GSM850};
#endif
```

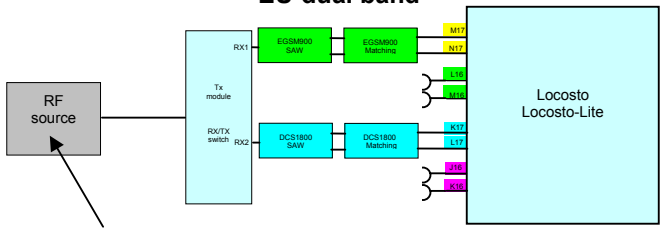
6.4 Hardware procedure to calibrate DCXO coarse tuning (drpcal 3)

Quad band



RF sine wave
Level=-70dBm
RF frequency=869.2MHz

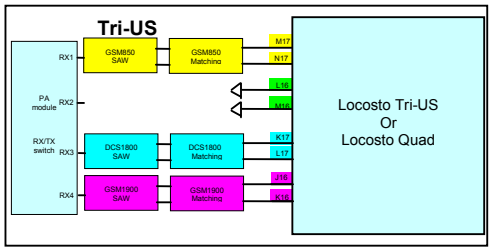
EU-dual band



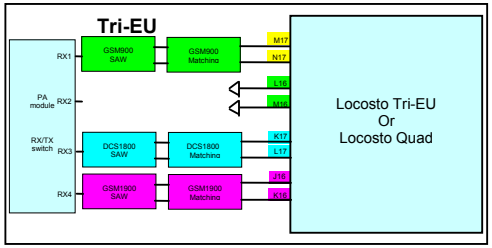
RF sine wave
Level=-70dBm
RF frequency=**925.2MHz**

7 Hardware configurations for a unique PCB used in Tri-band US and Tri-band EU

7.1 Using PA module:



RF_BAND_SYSTEM_INDEX = RF_US_TRIBAND or RF_QUADBAND
DCXO Coarse tuning calibration done using 869.2MHz input sine wave

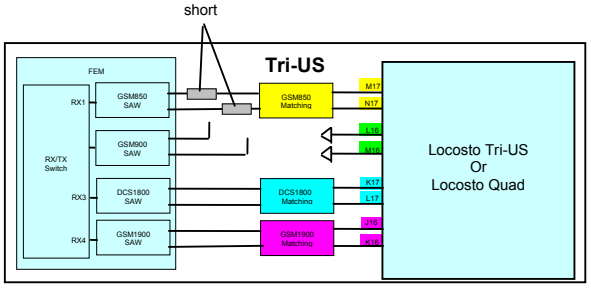


RF_BAND_SYSTEM_INDEX = RF_EU_TRIBAND
DCXO Coarse tuning calibration done using 925.2MHz input sine wave

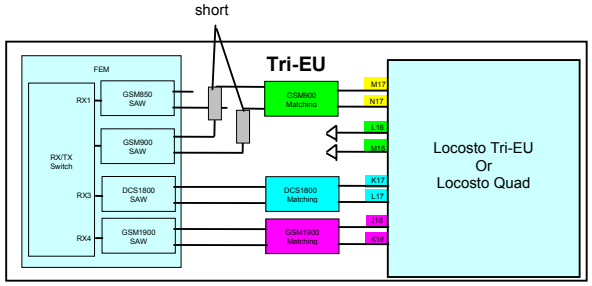
Note: PA module is supposed to have same performances in RX1 and RX2 outputs over low bands GS850 and GSM900

7.2 Using PA + Front-end module Quad-band (SAW+antenna switch):

7.2.1 Option #1 with default DRP Firmware



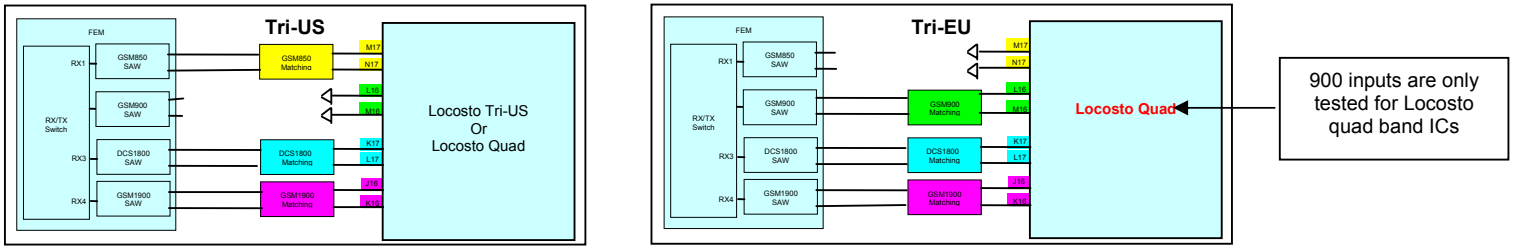
RF_BAND_SYSTEM_INDEX = RF_US_TRIBAND or RF_QUADBAND
DCXO Coarse tuning calibration done using 869.2MHz input sine wave



RF_BAND_SYSTEM_INDEX = RF_EU_TRIBAND
DCXO Coarse tuning calibration done using 925.2MHz input sine wave

Note: PCB differential routing from FEM to Locosto has to be symmetrical at least for wire length.

7.2.2 Option #2 with modification in DRP Firmware



RF_BAND_SYSTEM_INDEX = RF_US_TRIBAND or RF_QUADBAND
DCXO Coarse tuning calibration done using 869.2MHz input sine wave

RF_BAND_SYSTEM_INDEX = **RF_QUADBAND.**
DCXO Coarse tuning calibration done using 925.2MHz input sine wave

Normally Tri-EU is supposed to be declared as RF_BAND_SYSTEM_INDEX=RF_EU_TRI because default TI recommendation is to use Locosto 850 inputs when using GSM900 with a Tri-EU configuration. Using a FEM and in order to use unique PCB for Tri-US and Tri-EU application then 900 RX signal has to enter in Locosto 900 inputs. This is done by declaring the Tri-EU as a quad band in the TPU file with RF_BAND_SYSTEM_INDEX=RF_QUADBAND. But then remains an issue with DRP DCXO coarse calibration because in quad band the needed input signal for this calibration is expected in Locosto 850 band at 869.2MHz.

In order to make possible the DCXO coarse calibration to occur on Locosto GSM900 inputs at 925.2MHz (being declared as a quad band configuration), following changes have to be done.

Here below modifications can be used either in Tri-US or Tri-EU with PCB configuration as defined in this section
Clearly a smarter implementation would be to define another g_pcb_config value for the Tri-EU as defined in this section.

In L1 file "l1tm_fun.c"

```
case DRP_DCXO_CALIB:
{
```

To be changed by

```
if(g_pcb_config == RF_QUADBAND)
band = EGSM_BAND;
```

```
band = GSM_BAND;
if((g_pcb_config == RF_EU_DUALBAND) || (g_pcb_config == RF_EU_TRIBAND) || (g_pcb_config == RF_PCS1900_900_DUALBAND))
band = EGSM_BAND;
```

In DRP file "drp_main.c"

```
SINT16 drp_dcxo_calib(UINT16 BAND_INDEX,
```

```
                        #if DRP_TEST_SW
              UINT16 pcb_config,
              #endif
                        T_DRP_SW_DATA *sw_data_ptr){
  UINT16 mem_data;
  UINT16 indx_max0;
  UINT16 indx_max1;
  UINT16 temp16,rxon_input_saved;
  UINT32 FCW_OFFSET,FCW;
  UINT16 dbbif_setting;

  drp_sw_data = sw_data_ptr;

#if ((DRP_TEST_SW && DRP_BENCH_SW) || (!DRP_TEST_SW))
  // Call twice just in case first call happens at frame boundary
  drp_rx_tspact_enable(GSM_BAND);
  drp_rx_tspact_enable(GSM_BAND);
#endif
```

To be replaced by

```
drp_rx_tspact_enable(BAND_INDEX);
drp_rx_tspact_enable(BAND_INDEX);
```

This modification is currently not embedded in any official TI DRP FW / L1,
It is currently provided as fix proposal. It has been validated functional.