



4 Functional Requirements

The engine shall, through functional test, be guaranteed to meet the electrical functional requirements outlined below.

4.1 RF Test Limits

Note that the following test limits are applied during calibration of the engine which is done in a burst-mode (non-signalling configuration). Voxson reserve the right to alter these limits for on-call test. Battery voltage applied is 3.8V.

Band	GSM							
Value								
PHASE ERROR (MODULATION)								
Phase MinMaxCurr PkErr	12 degrees							
Phase MinMaxCurr RMSErr	3 degrees							
Phase MinMaxCurr FreqErr	999 Hz							
Phase Average PkErr	5 degrees							
Phase Average RMSErr	2 degrees							
Phase Average FreqErr	40 Hz							
POWER VERSUS TIME UPPER LIMIT								
PVT Enable	1	1	1	1	1	1	1	1 Off/On
PVT StartTime	-10	-7	-4.25	-2	0.5	150	152.25	155 Bits
PVT EndTime	-7	-4.25	-2	0.5	150	152.25	155	157 Bits
PVT StartRelLevel	-59	-35	-8	2	0.7	-10	-35	-59 dB
PVT EndRelLevel	-59	-35	-8	2	0.7	-10	-35	-59 dB
PVT StartAbsLevel	-36	-20	2	0	0	2	-20	-54 dB
PVT EndAbsLevel	-36	-20	2	0	0	2	-20	-54 dB
POWER VERSUS TIME LOWER LIMIT								
PVT EnableLow	1	1	1	0 Off/On				
PVT StartTimeLow	-10	0.5	147.5	157 Bits				
PVT EndTimeLow	0.5	147.5	157	157 Bits				
PVT StartRelLevelLow	0	-0.7	0	-100 dB				
PVT EndRelLevelLow	0	-0.7	0	-100 dB				
PVT StartAbsLevelLow	0	0	0	0 dB				



PVT EndAbsLevelLow 0 0 0 0 dB

SPECTRUM DUE TO SWITCHING

SpecSwit NumLevels	10										
SpecSwit power	39	37	35	33	31	29	27	25	23	21	MAX dBm
SpecSwit enable	1	1	1	1	1	1	1	1	1	1	Off/On
SpecSwit Rel400KHz	-14	-16	-18	-20	-22	-24	-24	-24	-24	-24	dB
SpecSwit Rel600KHz	-22	-22	-22	-22	-24	-26	-27	-27	-27	-27	dB
SpecSwit Rel1200KHz	-22	-22	-22	-22	-24	-26	-28	-30	-32	-33	dB
SpecSwit Rel1800KHz	-25	-25	-25	-25	-27	-29	-31	-33	-35	-37	dB

SPECTRUM DUE TO MODULATION

SpecMod Enable	1	1	1	1	1	1	1	1	1	1	Off/On
SpecMod MaxPWRLevelRel	0.5	-30	-33	-63	-63	-65	-65	-65	-65	-65	dB
SpecMod AbsPWRLevelRel	-40	-40	-40	-40	-55	-55	-55	-55	-55	-55	dB

SENSITIVITY

used timeslot level -104.5 dBm
Sensitivity C2Bits 2 %
Sensitivity C1bBits 2 %
Sensitivity FER 0 frames

PCL	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
TX maxPowerDBM	32.2	30.8	28.8	26.9	24.9	22.9	20.9	18.9	16.9	15	13.1	11.1	9.2	7.3	5.5
TX minPowerDBM	32	30.6	28.4	26.5	24.5	22.5	20.5	18.5	16.5	14.6	12.6	10.6	8.7	6.7	4.7

Band

DCS

Value

PHASE ERROR (MODULATION)

Phase MinMaxCurr PkErr 15 degrees
Phase MinMaxCurr RMSErr 3.5 degrees
Phase MinMaxCurr FreqErr 999 Hz
Phase Average PkErr 8 degrees
Phase Average RMSErr 2.5 degrees
Phase Average FreqErr 80 Hz

POWER VERSUS TIME UPPER LIMIT



PVT Enable	1	1	1	1	1	1	1	1	Off/On
PVT StartTime	-10	-7	-4.25	-2	0.5	150	152.25	155	Bits
PVT EndTime	-7	-4.25	-2	0.5	150	152.25	155	157	Bits
PVT StartRelLevel	-55	-35	-8	2	0.7	-10	-35	-50	dB
PVT EndRelLevel	-55	-35	-8	2	0.7	-10	-35	-50	dB
PVT StartAbsLevel	-50	-23	-3	0	0	-3	-23	-50	dB
PVT EndAbsLevel	-50	-23	-3	0	0	-3	-23	-50	dB

POWER VERSUS TIME LOWER LIMIT

PVT EnableLow	1	1	1	0 Off/On
PVT StartTimeLow	-10	0.5	147.5	157 Bits
PVT EndTimeLow	0.5	147.5	157	157 Bits
PVT StartRelLevelLow	0	-0.7	0	-100 dB
PVT EndRelLevelLow	0	-0.7	0	-100 dB
PVT StartAbsLevelLow	0	0	0	0 dB
PVT EndAbsLevelLow	0	0	0	0 dB

SPECTRUM DUE TO SWITCHING

SpecSwit NumLevels	9									
SpecSwit power	36	34	32	30	28	26	24	22	20	0 MAX dBm
SpecSwit enable	1	1	1	1	1	1	1	1	1	0 Off/On
SpecSwit Rel400KHz	-17	-19	-21	-23	-24	-24	-24	-24	-24	0 dB
SpecSwit Rel600KHz	-22	-22	-23	-25	-26	-27	-27	-27	-27	0 dB
SpecSwit Rel1200KHz	-22	-22	-23	-25	-27	-29	-31	-32	-33	0 dB
SpecSwit Rel1800KHz	-25	-25	-26	-28	-30	-32	-34	-36	-37	0 dB

SPECTRUM DUE TO MODULATION

SpecMod Enable	1	1	1	1	1	1	1	1	1	1	Off/On
SpecMod MaxPWRLevelRel	0.5	-30	-33	-63	-63	-65	-65	-65	-65	-65	-65 dB
SpecMod AbsPWRLevelRel	-40	-40	-40	-40	-60	-60	-60	-60	-60	-60	-60 dB

SENSITIVITY

used timeslot level	-103 dBm
Sensitivity C2Bits	2 %
Sensitivity C1bBits	2 %
Sensitivity FER	0 frames