



# **JMA DAS Platform Troubleshooting Charts**

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## What Is New

The troubleshooting charts in this document list the alarms that can arise in the components of the JMA Distributed Antenna System (DAS) and provide indications to deal with operation problems.

Following are the changes introduced by this updated version (Doc. ID Number: 91 080 0786TC) of the DAS Troubleshooting Charts:

- ["Chart 6.2 – NG-OTRX - Optical Tx/Rx for Master Unit \(ED35TD\)" on page 34](#) added to describe the alarms that can arise in the ED35TD optical transceiver (NG-OTRX).
- ["Chart 7.2 – NG-RU - Next Generation Remote Units with 40W Output Power" on page 40](#) added to describe the alarms that can arise in next generation remote units.
- Troubleshooting procedure modified for the *TDD Unlock* alarm, generated by the TSYNC module. See ["Chart 1.6 – TSYNC- TDD synchronizer and reference module" on page 20](#).
- Alarms severity table added to provide descriptions of the levels of severity assigned to alarms. See ["Alarms Severity" on page 5](#).

## Getting Help: Technical Support Contact Information

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## Alarms Severity

Four levels of severity are assigned to alarms: warning, minor, major, and critical, according to the ITU (International Telecommunication Union) X.733 recommendation (CCITT Recommendation X.733 - "Alarm Reporting Function"). The alarm severity indicates the urgency to take corrective actions. Refer to the following table for the relationship between the alarm severity and the urgency of corrective actions.

Alarm Severity	Icon Color (OMT)	Fault Description	Corrective Action
Critical	Red	The problem compromises functionality, and service cannot be provided.	Immediate action needed.
Major	Orange	The problem is affecting functionality, but the service can still be provided.	Urgent action needed, to prevent more serious fault.
Minor	Yellow	The problem might affect functionality but is not yet affecting it.	Watch situation carefully. Corrective actions may be needed to prevent more serious fault.
Warning	Blue	The problem does not affect functionality.	Investigate further during scheduled maintenance.

## 1 – Active RF Interface Modules

Chart 1.1 – TDTPOI - Active DAS Tray Point of Interface

Type: 00002E (\*)

SNMP ID: spvDasTray

Alarm Id	Type	Alarm Description	LED Status (on equipment)	Severity level	Potential Cause		Possible Solution	Service-affecting fault
					DAS Platform issue	Environment/Installation issue		
Communication	00002E	The supervision unit cannot communicate with the module	–	Critical	–	Module unplugged	Insert the module properly	Coverage issue for the specific operator(s)/band
					–	Module switched off	Troubleshoot the power source	
					–	PSU cabling	Check the power cords connecting sub-racks	
					–	RS485 cabling	Check the RS485 cabling	–
					Module switched off	–	Power cycle (reset) the module. If the alarm persists, replace the module	Coverage issue for the specific operator(s)/band
–	–	The module cannot communicate with the supervision unit	LED ALM: RED	Critical	The module might not have been detected by the discovery process		If the module is not displayed in the Operation and Maintenance software Tree View, check its connections and start a new discovery	–
					If the ALM LEDs of all the master unit components are RED: the supervision might be busy or not properly inserted		<ul style="list-style-type: none"> <li>Check the number of components of the system</li> <li>Check that the supervision is properly inserted</li> </ul>	
Low Temperature	00002E	The module operating temperature is too low	LED ALM: ORANGE	Minor	–	Low environmental temperature	Check the master unit environmental temperature	–
High Temperature	00002E	The module operating temperature is too high	LED ALM: BLINKING RED	Major	–	High environmental temperature	Improve the cooling of the system	–
Mains Fault	00002E	The module current consumption is out of range	LED ALM: BLINKING RED	Major	The module is faulty	–	Contact technical support	Coverage issue for the specific operator(s)/band
Fan Speed	00002E	Fan speed is too low	LED ALM: ORANGE	Minor	–	Dust / dirty environment	Improve the cooling/cleaning of the system	–
					Faulty fan kit	–	Check the temperature of the module: if the module temperature is over 55°C (131°F) replace the module	
LNA1 Current	00002E	LNA 1 current consumption is out of range	LED ALM: BLINKING RED	Major	–	Uplink signal too high (path 1)	Increase the module attenuation in the uplink path 1; if the alarm persists contact technical support	Coverage issue for the specific operator(s)/band
LNA2 Current	00002E	LNA 2 current consumption is out of range	LED ALM: BLINKING RED	Major	–	Uplink signal too high (path 2)	Increase the module attenuation in the uplink path 2; if the alarm persists contact technical support	Coverage issue for the specific operator(s)/band

(\*) Type 46 valid for OMC versions earlier than 1.8.0 and OMT versions earlier than 3.2.2



Alarm Id	Type	Alarm Description	LED Status (on equipment)	Severity level	Potential Cause		Possible Solution	Service-affecting fault
					DAS Platform issue	Environment/Installation issue		
Pwr Rms Min DL1	00002E	Downlink input signal < <i>Thr Min Rms Pwr DL</i> (path 1): the downlink input signal level is below the user-adjustable minimum input signal threshold	LED ALM: BLINKING RED	Major	–	No output signal from Base Station (BS)	Troubleshoot the Base Station	Coverage issue for the specific operator(s)/band
					–	Problem on passive equipment between BS and TDTPOI	Troubleshoot the passive equipment	Coverage issue for the specific operator(s)/band
					–	Wrong setting for the TDTPOI minimum input signal threshold (path 1)	Decrease the minimum input signal threshold <i>Thr Min Rms Pwr DL</i> (path 1)	–
Pwr Rms Min DL2	00002E	Downlink input signal < <i>Thr Min Rms Pwr DL</i> (path 2): the downlink input signal level is below the user-adjustable minimum input signal threshold	LED ALM: BLINKING RED	Major	–	No output signal from Base Station (BS)	Troubleshoot the Base Station	Coverage issue for the specific operator(s)/band
					–	Problem on passive equipment between BS and TDTPOI	Troubleshoot the passive equipment	Coverage issue for the specific operator(s)/band
					–	Wrong setting for the TDTPOI minimum input signal threshold (path 2)	Decrease the minimum input signal threshold <i>Thr Min Rms Pwr DL</i> (path 2)	–
Pwr Limiter DL1	00002E	Downlink Input signal > <i>Thr Max Rms Pwr DL</i> (path 1): the downlink input signal level exceeds the user-adjustable maximum input signal threshold	LED ALM: BLINKING RED	Major	–	Increased output signal from Base Station	Check input power	▸ Power limiter mode set to <b>RF off: the module enters auto power-off</b> . Coverage issue for the specific operator(s)/band ▸ Power limiter mode set to <b>10dB-plus</b> : the signal is 10dB attenuated (DL path 1)
					–	Wrong setting on TDTPOI threshold	Increase the TDTPOI downlink attenuation (path 1) and then increase the maximum input signal threshold ( <i>Thr Max Rms Pwr DL</i> - path 1) accordingly	
Pwr Limiter DL2	00002E	Downlink input signal > <i>Thr Max Rms Pwr DL</i> (path 2): the downlink Input signal level exceeds the user-adjustable maximum input signal threshold	LED ALM: BLINKING RED	Major	–	Increased output signal from Base Station (BS)	Check input power	▸ Power limiter mode set to <b>RF off: the module enters auto power-off</b> . Coverage issue for the specific operator(s)/band ▸ Power limiter mode set to <b>10dB-plus</b> : the signal is 10dB attenuated (DL path 2)
					–	Wrong setting on TDTPOI threshold	Increase the TDTPOI downlink attenuation (path 2) and then increase the maximum input signal threshold ( <i>Thr Max Rms Pwr DL</i> - path 2) accordingly	



Alarm Id	Type	Alarm Description	LED Status (on equipment)	Severity level	Potential Cause		Possible Solution	Service-affecting fault
					DAS Platform issue	Environment/Installation issue		
Pwr Overdrive DL1	00002E	Absolute input power too high (downlink path 1)	LED ALM: RED	Critical	–	The Base Station (BS) downlink output power exceeds the module no-damage input power threshold (refer to the JMA DAS Platform datasheet for details)	Reduce the BS output power or introduce an attenuator (high power handling) <b>Please note after the alarm cause has been removed, the overdrive alarm needs to be cleared: press the clear button, available in the TDTPOI OMT webpages, to reset the device. The module will start with the path@max attenuation: the re-commissioning of the DL path 1 is required</b>	<b>The module enters auto power-off.</b> Coverage issue for the specific operator(s)/band
					–	The input power is 10dB higher than the max input signal threshold set on the module ( <i>Thr Max Rms Pwr DL</i> path 1)		
Pwr Overdrive DL2	00002E	Absolute input power too high (downlink path 2)	LED ALM: RED	Critical	–	The Base Station (BS) downlink output power exceeds the module no-damage input power threshold (refer to the JMA DAS Platform datasheet for details)	Reduce the BS output power or introduce an attenuator (high power handling) <b>Please note after the alarm cause has been removed, the overdrive alarm needs to be cleared: press the clear button, available in the TDTPOI OMT webpages, to reset the device. The module will start with the path@max attenuation: the re-commissioning of the DL path 2 is required</b>	<b>The module enters auto power-off.</b> Coverage issue for the specific operator(s)/band
					–	The input power is 10dB higher than the max input signal threshold set on the module ( <i>Thr Max Rms Pwr DL</i> path 2)		



Chart 1.2 – TLPPOI - Low Power Active POI module

Type: 000040 (\*)

SNMP ID: spvLDas

Alarm Id	Type	Alarm Description	LED Status (on equipment)	Severity level	Potential Cause		Possible Solution	Service-affecting fault
					DAS Platform issue	Environment/Installation issue		
Communication	000040	The supervision unit cannot communicate with the module	–	Critical	–	Module unplugged	Insert the module properly	The module is out of service
					–	Module switched off	Check the mains power supply	
					–	PSU cabling	Check the power cords connecting sub-racks	
					–	RS485 cabling	Check the RS485 cabling	–
					Module switched off	–	Power cycle (reset) the module. If the alarm persists, contact technical support	The module is out of service
–	–	The module cannot communicate with the supervision unit	LED ALM: RED	Critical	The module might not have been detected by the discovery process.		If the module is not displayed in the System Tree View (OMT Components menu), check its connections and start a new discovery	–
					If the ALM LEDs of all the master unit components are RED: the supervision might be busy or not properly inserted		<ul style="list-style-type: none"> <li>Check the number of components of the system</li> <li>Check that the supervision is properly inserted</li> </ul>	
Low Temperature	000040	The module operating temperature is too low	LED ALM: ORANGE	Minor	–	Low environmental temperature	Check environmental temperature	–
High Temperature	000040	The module operating temperature is too high	LED ALM: BLINKING RED	Major	–	High environmental temperature	Improve the cooling of the system	The specific operator / band is out of service
Mains Fault	000040	The module current consumption is out of range	LED ALM: BLINKING RED	Major	The module is faulty	–	Contact technical support	The specific operator / band is out of service
Current LNA in UL1 (formerly "LNA1 Current")	000040	LNA 1 current absorption is out of range	LED ALM: BLINKING RED	Major	–	UL signal too high	Increase the attenuation in the UL path. If the alarm persists contact technical support	The specific operator / band is out of service
Current LNA in UL2 (formerly "LNA2 Current")	000040	LNA 2 current absorption is out of range	LED ALM: BLINKING RED	Major	–	UL signal too high	Increase the attenuation in the UL path. If the alarm persists contact technical support	The specific operator / band is out of service
Rms Pwr IN Min DL1	000040	Input DL signal < min input signal threshold	LED ALM: BLINKING RED	Major	–	No output signal from the Base Station (BS)	Check the Base Station output power	The specific operator / band is out of service
					–	Problem on passive components between BS and TLPPOI	Check the passive components before TLPPOI	
					–	Wrong setting on TLPPOI MIN threshold	Decrease MIN input signal threshold	–

(\*) Type 64 valid for OMC versions earlier than 1.8.0 and OMT versions earlier than 3.2.2

Alarm Id	Type	Alarm Description	LED Status (on equipment)	Severity level	Potential Cause		Possible Solution	Service-affecting fault
					DAS Platform issue	Environment/Installation issue		
Rms Pwr IN Min DL2	000040	Input DL signal < min input signal threshold	LED ALM: BLINKING RED	Major	–	No output signal from the Base Station (BS)	Check the Base Station output power	The specific operator / band is out of service
					–	Problem on passive components between BS and TLPPOI	Check the passive components before TLPPOI	
					–	Wrong setting on TLPPOI MIN threshold	Decrease MIN input signal threshold	–
Pwr Limiter DL1	000040	Input DL signal > max input signal threshold	LED ALM: BLINKING RED	Major	–	Increased output signal from Base Station	Check input power	<ul style="list-style-type: none"> <li>Power limiter mode set to <b>RF off: the module enters auto power-off.</b> The specific operator / band is out of service</li> <li>Power limiter mode set to <b>10dB-plus:</b> the signal is 10dB attenuated</li> </ul>
					–	Wrong settings on TLPPOI MAX threshold	Increase MAX input signal threshold together with the TLPPOI Downlink attenuation	
Pwr Limiter DL2	000040	Input DL signal > max input signal threshold	LED ALM: BLINKING RED	Major	–	Increased output signal from Base Station	Check input power	<ul style="list-style-type: none"> <li>Power limiter mode set to <b>RF off: the module enters auto power-off.</b> The specific operator / band is out of service</li> <li>Power limiter mode set to <b>10dB-plus:</b> the signal is 10dB attenuated</li> </ul>
					–	Wrong settings on TLPPOI MAX threshold	Increase MAX input signal threshold together with the TLPPOI Downlink attenuation	
Pwr Overdrive DL1	000040	Input power too high	LED ALM: RED	Critical	–	Base Station Downlink output power exceeds the no-damage input power threshold of the module	Reduce the BS output power or introduce an attenuator (high power handling) <b>Please note</b> after the alarm cause has been removed, the overdrive alarm needs to be cleared: press the clear button, available in TLPPOI OMT webpages, to reset the device. The module will start with the path@max attenuation: the re-commissioning of the downlink path 1 is required	<b>The module enters auto power-off.</b> Out of service: all attenuation set at max value, commissioning must be redone
						The input power is 10dB higher than the max input signal threshold set on the module		
Pwr Overdrive DL2	000040	Input power too high	LED ALM: RED	Critical	–	Base Station Downlink output power exceeds the no-damage input power threshold of the module	Reduce the BS output power or introduce an attenuator (high power handling) <b>Please note</b> after the alarm cause has been removed, the overdrive alarm needs to be cleared: press the clear button, available in TLPPOI OMT webpages, to reset the device. The module will start with the path@max attenuation: the re-commissioning of the downlink path 2 is required	<b>The module enters auto power-off.</b> Out of service: all attenuation set at max value, commissioning must be redone
						The input power is 10dB higher than the max input signal threshold set on the module		



Alarm Id	Type	Alarm Description	LED Status (on equipment)	Severity level	Potential Cause		Possible Solution	Service-affecting fault
					DAS Platform issue	Environment/Installation issue		
Current LNA out UL1	000040	LNA out UL1 current absorption is out of range	LED ALM: BLINKING RED	Major	–	UL signal too high (path 1)	Increase the module attenuation in the uplink path 1.	Out of service: coverage issue for the specific operator(s)/ band(s)
Current LNA out UL2	000040	LNA out UL2 current absorption is out of range	LED ALM: BLINKING RED	Major	–	UL signal too high (path 2)	Increase the module attenuation in the uplink path 2.	Out of service: coverage issue for the specific operator(s)/ band(s)
Current Power Amplifier DL1	000040	Power Amplifier DL1 current absorption is out of range	LED ALM: BLINKING RED	Major	–	DL signal too high (path 1)	Increase the module attenuation in the downlink path 1	Out of service: coverage issue for the specific operator(s)/ band(s)
Current Power Amplifier DL2	000040	Power Amplifier DL2 current absorption is out of range	LED ALM: BLINKING RED	Major	–	DL signal too high (path 2)	Increase the module attenuation in the downlink path 2	Out of service: coverage issue for the specific operator(s)/ band(s)
Rms Pwr OUT Low DL1	000040	RF output power of the TLPPOI is below the factory settings for Path 1	LED ALM: BLINKING RED	Major	–	No output signal from Base Station (BS)	Troubleshoot the Base Station	Out of service: coverage issue for the specific operator(s)/ band(s)
						Problem on passive components between BS and TLPPOI	Troubleshoot the passive equipment	
						Decreased output signal from Base Station	Decrease the TLPPOI DL attenuation (path 1)	
Rms Pwr OUT Low DL2	000040	RF output power of the TLPPOI is below the factory settings for Path 2	LED ALM: BLINKING RED	Major	–	No output signal from Base Station (BS)	Troubleshoot the Base Station	Out of service: coverage issue for the specific operator(s)/ band(s)
						Problem on passive components between BS and TLPPOI	Troubleshoot the passive equipment	
						Decreased output signal from Base Station	Decrease the TLPPOI DL attenuation (path 2)	
Rms Pwr OUT High DL1	000040	Rms OUT Pwr DL1 [dBm] > DL Pout max: the downlink output signal level exceeds the declared output signal for Path 1	LED ALM: BLINKING RED	Major	–	Increased output signal from Base Station	Check input power	Out of service: coverage issue for the specific operator(s)/ band(s)
							Increase the module attenuation in the downlink path 1	
Rms Pwr OUT High DL2	000040	Rms OUT Pwr DL2 [dBm] > DL Pout max: the downlink output signal level exceeds the declared output signal for Path 2	LED ALM: BLINKING RED	Major	–	Increased output signal from Base Station	Check input power	Out of service: coverage issue for the specific operator(s)/ band(s)
							Increase the module attenuation in the downlink path 2	

Chart 1.3 – TCPRIPOI - CPRI Point Of Interface

Type: 00003E

SNMP ID: spvPoiCpri

Alarm Id	Type	Alarm Description	LED Status (on equipment)	Severity level	Potential Cause	Possible Solution	Service-affecting fault
Communication	00003E	The supervision unit cannot communicate with the module	–	Critical	Module unplugged	Insert the module properly	The module is out of service
					Module switched off	Check the mains power supply	
					PSU cabling	Check the power cords connecting sub-racks	
					RS485 cabling	Check the RS485 cabling	–
					Module switched off	Power cycle (reset) the module. If the alarm persists, contact technical support	The module is out of service
–	–	The module cannot communicate with the supervision unit	LED ALM: RED	Critical	The module might not have been detected by the discovery process.	If the module is not displayed in the System Tree View (OMT Components menu), check its connections and start a new discovery	–
					If the ALM LEDs of all the master unit components are RED: the supervision might be busy or not properly inserted	<ul style="list-style-type: none"> <li>Check the number of components of the system</li> <li>Check that the supervision is properly inserted</li> </ul>	
Low Temperature	00003E	The module operating temperature is too low	LED ALM: ORANGE	Minor	Low environmental temperature	Check environmental temperature	–
High Temperature	00003E	The module operating temperature is too high	LED ALM: BLINKING RED	Major	High environmental temperature	Improve the cooling of the system	The specific operator / band is out of service
Mains Fault	00003E	The module current consumption is out of range	LED ALM: BLINKING RED	Major	The module is faulty	Contact technical support	The specific operator / band is out of service
Ch1 Pwr Out DL High	00003E	Ch1 Downlink output power over max threshold	LED ALM: BLINKING RED	Major	Possible RF overdrive	Contact technical support	–
Ch2 Pwr Out DL High	00003E	Ch2 Downlink output power over max threshold	LED ALM: BLINKING RED	Major	Possible RF overdrive	Contact technical support	–
Ch1 Pwr Out DL Low	00003E	Ch1 Downlink output power below min threshold	LED ALM: BLINKING RED	Major	Possible other active alarms on the TCPRIPOI	Check on all active alarm available	The TCPRIPOI RF output power is very low or absent
					Possible unavailabilities BBU (baseband unit) side	Check with BBU (baseband unit) operator	
Ch2 Pwr Out DL Low	00003E	Ch2 Downlink output power below min threshold	LED ALM: BLINKING RED	Major	Possible other active alarms on the TCPRIPOI	Check on all active alarm available	The TCPRIPOI RF output power is very low or absent
					Possible unavailabilities BBU (baseband unit) side	Check with BBU (baseband unit) operator	
Lock Synt UL	00003E	UL synthetizer is not locked	LED ALM: BLINKING RED	Major	The UL synthetizer experiences some issues	Contact technical support	The UL RF signal could be affected
Ch1 ALC On UL	00003E	Ch1 Uplink Automatic Level Control	LED ALM: BLINKING ORANGE	Warning	Ch1 Uplink input power exceeds the max threshold	Increase Ch1 UL attenuation - DAS side	–

Alarm Id	Type	Alarm Description	LED Status (on equipment)	Severity level	Potential Cause	Possible Solution	Service-affecting fault
Ch2 ALC On UL	00003E	Ch2 Uplink Automatic Level Control	LED ALM: BLINKING ORANGE	Warning	Ch2 Uplink input power exceeds the max threshold	Increase Ch2 UL attenuation - DAS side	–
Ch1 ALC On DL	00003E	Ch1 Downlink output power too high	LED ALM: BLINKING ORANGE	Warning	Possible RF overdrive	Contact technical support	–
Ch2 ALC On DL	00003E	Ch2 Downlink output power too high	LED ALM: BLINKING ORANGE	Warning	Possible RF overdrive	Contact technical support	–
Communication CPRI	00003E	The communication between CPRI board and DAS side is faulty	LED ALM: RED	Critical	Communication protocol issues	Contact technical support	Possible malfunctioning of the TCPRIPOI
Temperature CPRI	00003E	The CPRI board temperature is out of range	LED ALM: BLINKING RED	Major	Environmental temperature issue	Check environmental temperature	–
Mains Fault CPRI	00003E	The CPRI board current consumption is out of range	LED ALM: RED	Critical	The module is faulty	Contact technical support	–
Ch1 ADC OverflowCPRI	00003E	Ch1 Uplink RF value is too high	LED ALM: BLINKING RED	Major	Ch1 Uplink input power is too high	Increase Ch1 UL attenuation - DAS and TCPRIPOI side	–
Ch2 ADC OverflowCPRI	00003E	Ch2 Uplink RF value is too high	LED ALM: BLINKING RED	Major	Ch2 Uplink input power is too high	Increase Ch1 UL attenuation - DAS and TCPRIPOI side	–
Ch1 DAC Protect CPRI	00003E	Ch1 Downlink digital power in CPRI board is too high	LED ALM: BLINKING RED	Major	CPRI board experiences some issues	Contact technical support	Ch1 Downlink RF is disabled
Ch2 DAC Protect CPRI	00003E	Ch2 Downlink digital power in CPRI board is too high	LED ALM: BLINKING RED	Major	CPRI board experiences some issues	Contact technical support	Ch2 Downlink RF is disabled
Lock Synt DL CPRI	00003E	DL synthetizer is not locked	LED ALM: BLINKING RED	Major	The DL synthetizer experiences some issues	Contact technical support	The DL RF signal could be affected
ClkDistrUnlockCPRI	00003E	The clock distributor is not locked	LED ALM: BLINKING RED	Major	Clock synchronization problem	Check CPRI connectivity or contact technical support	The TCPRIPOI RF is disabled

Chart 1.4 – TAPOI - JMA Active POI

Type: 00001F (\*)

SNMP ID: spvPoi

Alarm Id	Type	Alarm Description	LED Status (on equipment)	Severity level	Potential Cause		Possible Solution	Service-affecting fault
					DAS Platform issue	Environment/Installation issue		
Communication	00001F	The supervision unit cannot communicate with the module	–	Critical	–	Module unplugged	Insert the module properly	Coverage issue for the specific operator/band
					–	Module switched off	Troubleshoot the power source	
					–	PSU cabling	Check the power cords connecting sub-racks	
					–	RS485 cabling	Check the RS485 cabling	–
					Module switched off	–	Power cycle (reset) the module. If the alarm persists replace the module	Coverage issue for the specific operator/band
–	–	The module cannot communicate with the supervision unit	LED ALM: RED	Critical	The module might not have been detected by the discovery process.		If the module is not displayed in the System Tree View (Components menu), check its connections and start a new discovery	–
					If the ALM LEDs of all the master unit components are RED: the supervision might be busy or not properly inserted		<ul style="list-style-type: none"> <li>Check the number of components of the system</li> <li>Check that the supervision is properly inserted</li> </ul>	
Low Temperature	00001F	The module operating temperature is too low	LED ALM: ORANGE	Minor	–	Low environmental temperature	Check the master unit environmental temperature	–
High Temperature	00001F	The module operating temperature is too high	LED ALM: BLINKING RED	Major	–	High environmental temperature	Improve the cooling of the system	–
Mains Fault	00001F	The module current consumption is out of range	LED ALM: BLINKING RED	Major	The module is faulty	–	Contact technical support	Coverage issue for the specific operator/band
DL Power IN High	00001F	DL input signal > <i>Max Rms Pwr</i> : the downlink input signal level exceeds the user-adjustable maximum input signal threshold	LED ALM: BLINKING RED	Major	–	Increased output signal from Base Station (BS)	Check input power	<ul style="list-style-type: none"> <li>Power limiter mode set to <b>10dB-isolated</b>: the module enters auto power-off. Coverage issue for the specific operator(s)/band</li> <li>Power limiter mode set to <b>10dB-plus</b>: the signal is 10dB attenuated</li> </ul>
					–	Wrong setting on the TAPOI threshold	Increase the TAPOI attenuation (downlink) and then increase the maximum input signal threshold ( <i>Max Rms Pwr</i> ) accordingly	
DLPower IN Low	00001F	DL input signal < <i>Min Rms Pwr</i> : the Downlink input signal level is below the user-adjustable minimum input signal threshold	LED ALM: BLINKING RED	Major	–	No output signal from Base Station (BS)	Troubleshoot the Base Station	Coverage issue for the specific operator/band
					–	Problem on passive component between BS and the TAPOI	Troubleshoot the passive equipment	Coverage issue for the specific operator/band
					–	Wrong setting for the TAPOI minimum input signal threshold	Decrease the minimum input signal threshold ( <i>Min Rms Pwr</i> )	–

(\*) Type 31 valid for OMC versions earlier than 1.8.0 and OMT versions earlier than 3.2.2



Chart 1.5 – TDFE, TDFE-F - Donor Front End

Types: 000018; 00001C (\*)

SNMP ID: spvDfe, spvDfeFpga

Alarm Id	Type	Alarm Description	LED Status (on equipment)	Severity level	Potential Cause		Possible Solution	Service-affecting fault
					DAS Platform issue	Environment/Installation issue		
Communication	000018 00001C	The supervision unit cannot communicate with the module	–	Critical	–	Module unplugged	Insert the module properly	Coverage issue for the specific operator(s)/filtered band
					–	Module switched off	Troubleshoot the power source	
					–	PSU cabling	Check the power cords connecting sub-racks	
					–	RS485 cabling	Check the RS485 cabling	–
					Module switched off	–	Power cycle (reset) the module. If the alarm persists replace the module	Coverage issue for the specific operator(s)/filtered band
Communication UL	000018	The supervision unit cannot communicate with the uplink section of the module	–	Critical	The module is faulty	–	Power cycle (reset) the module. If the alarm persists replace the module	–
–	–	The module cannot communicate with the supervision unit	LED ALM: RED	Critical	The module might not have been detected by the discovery process.		If the module is not displayed in the System Tree View (Components menu), check its connections and start a new discovery	–
					If the ALM LEDs of all the master unit components are RED: the supervision might be busy or not properly inserted		<ul style="list-style-type: none"> <li>Check the number of components of the system</li> <li>Check that the supervision is properly inserted</li> </ul>	
Temperature Low	000018	The module operating temperature is too low	LED ALM: BLINKING RED	Major	–	Low environmental temperature	Check the master unit environmental temperature	<b>The module enters auto power-off.</b> Coverage issue for the specific operator(s)/filtered band
Temperature High	000018	The module operating temperature is too high	LED ALM: BLINKING RED	Major	–	High environmental temperature	Improve the cooling of the system	<b>The module enters auto power-off.</b> Coverage issue for the specific operator(s)/filtered band
Temperature DL	00001C	The module operating temperature is out of range (downlink part)	LED ALM: BLINKING RED	Major	–	Environmental temperature	Improve the cooling of the system	<b>The module enters auto power-off.</b> Coverage issue for the specific operator(s)/filtered band
Temperature UL	00001C	The module operating temperature is out of range (uplink part)	LED ALM: BLINKING RED	Major	–	Environmental temperature	Improve the cooling of the system	<b>The module enters auto power-off.</b> Coverage issue for the specific operator(s)/filtered band

(\*) Types 24 (000018), 28 (00001C) valid for OMC versions earlier than 1.8.0 and OMT versions earlier than 3.2.2

Alarm Id	Type	Alarm Description	LED Status (on equipment)	Severity level	Potential Cause		Possible Solution	Service-affecting fault
					DAS Platform issue	Environment/Installation issue		
Fan Speed	000018	Fans speed is too low	LED ALM: BLINKING ORANGE	Warning	–	Dust / dirty environment	Improve the cooling/cleaning of the system	–
	00001C		LED ALM: ORANGE	Minor	Faulty fan kit	–	Check the temperature of the module: if the module temperature is over 60°C (140°F) replace the fan kit/ module	
Mains Fault	000018	The module current consumption is out of range	LED ALM: BLINKING RED	Major	The module is faulty	Antenna loop or system gain too high	Increase the donor front end attenuation (both in downlink and uplink) and enable the filtered sub-band/s if disabled If the alarm persists contact technical support	<b>The module enters auto power-off.</b> Coverage issue for the specific operator(s)/filtered band
Mains Fault DL	00001C	The module current consumption is out of range (Downlink path)	LED ALM: BLINKING RED	Major	Faulty module	Antenna loop or System gain too high	Increase the donor front end downlink attenuation and enable the filtered sub-band/s if disabled If the alarm persists contact technical support	<b>The module enters auto power-off.</b> Coverage issue for the specific operator(s)/filtered band
Mains Fault UL	00001C	The module current consumption is out of range (Uplink path)	LED ALM: BLINKING RED	Major	Faulty module	Antenna loop or System gain too high	Increase the donor front end uplink attenuation and enable the filtered sub-band/s if disabled If the alarm persists contact technical support	<b>The module enters auto power-off.</b> Coverage issue for the specific operator(s)/filtered band
Pwr In DL	000018 00001C	Downlink input power out of range	LED ALM: BLINKING ORANGE	Warning	–	Downlink input power too low	Check the Donor Antenna positioning and the donor front end downlink input connection	Coverage issue for the specific operator(s)/filtered band
					–	In-band downlink input power too high	Check the signal source level and attenuate the signal	
					The module is faulty	–	Contact technical support	
Pwr In SB1 DL	000018	Downlink input power out of range (sub-band 1)	LED ALM: BLINKING ORANGE	Warning	–	Sub-band 1: downlink input power too high	Check the signal source level and set appropriate downlink attenuation	Coverage issue for the specific operator(s)/filtered sub-band1
					The module is faulty	–	Contact technical support	
Pwr In SB2 DL	000018	Downlink input power out of range (sub-band 2)	LED ALM: BLINKING ORANGE	Warning	–	Sub-band 2: downlink input power too high	Check the signal source level and set appropriate downlink attenuation	Coverage issue for the specific operator(s)/filtered sub-band2
					The module is faulty	–	Contact technical support	
Pwr Min SB1 DL	000018	Downlink input power out of range (sub-band 1)	LED ALM: BLINKING ORANGE	Warning	–	Sub-band 1: downlink input power is too low	Check the Donor Antenna positioning and the donor front end downlink input connection	Coverage issue for the specific operator(s)/filtered sub-band1
Pwr Min SB2 DL	000018	Downlink input power out of range (sub-band 2)	LED ALM: BLINKING ORANGE	Warning	–	Sub-band 2: downlink input power is too low	Check the Donor Antenna positioning and the donor front end downlink input connection	Coverage issue for the specific operator(s)/filtered sub-band2
Pwr In UL	000018 00001C	Uplink input power out of range	LED ALM: BLINKING ORANGE	Warning	–	Uplink input power too high	Check the signal level and set appropriate uplink attenuation	Coverage issue for the specific operator(s)/filtered band



Alarm Id	Type	Alarm Description	LED Status (on equipment)	Severity level	Potential Cause		Possible Solution	Service-affecting fault
					DAS Platform issue	Environment/Installation issue		
Pwr Out DL	000018 00001C	Downlink RF output power is out of range	LED ALM: BLINKING ORANGE	Warning	–	Downlink input power too low	Check the Donor Antenna positioning and the donor front end downlink input connections	Coverage issue for the specific operator(s)/filtered band
					–	Downlink input power too high	Check the signal source level and set appropriate downlink attenuation	
					The module is faulty	–	Contact technical support	
Pwr Out UL	000018 00001C	Uplink RF output power is out of range	LED ALM: BLINKING ORANGE	Warning	The module is faulty	–	Contact technical support	–
Pwr Out SB1 UL	000018	Uplink RF output power is out of range (sub-band 1)	LED ALM: BLINKING ORANGE	Warning	–	Uplink output power too high	Check the signal source level and set appropriate Uplink attenuation	–
Pwr Out SB2 UL	000018	Uplink RF output power is out of range (sub-band 2)	LED ALM: BLINKING ORANGE	Warning	–	Uplink output power too high	Check the signal source level and set appropriate uplink attenuation	–
Peak Pwr + OFA DL	000018 00001C	Digital filter overflow	LED ALM: BLINKING ORANGE	Warning	–	Level of "interference in-band" signal much higher than TDFE filtered input signal	Increase the donor front end downlink attenuation	Coverage issue for the specific operator(s)/filtered band
					–	DL output signal too high	Optimize donor antenna direction to decrease interference signal without affecting desired input signal	
					–	Antenna loop caused by too high gain set vs antenna isolation	Increase the donor front end downlink attenuation	
Peak Pwr + OFA UL	000018 00001C	Digital filter overflow	LED ALM: BLINKING ORANGE	Warning	–	Level of uncoordinated user too strong at digital filter UL input	Increase the service front end/remote unit uplink Main attenuation; if necessary increase the donor front end uplink attenuation too. If the alarm persists after point 1 but it is intermittent → disable it	–
Lock Detect DL	000018 00001C	Board local oscillator unlocked	LED ALM: RED	Critical	Problem on internal RF Mixer	–	Remotely: no action can be performed Locally: switch off and on again the module (removing it from the sub-rack for some seconds and reinstalling it). If the alarm persists contact technical support	Coverage issue for the specific operator(s)/filtered band
Lock Detect UL								



Alarm Id	Type	Alarm Description	LED Status (on equipment)	Severity level	Potential Cause		Possible Solution	Service-affecting fault
					DAS Platform issue	Environment/Installation issue		
ALC On DL	000018	Automatic Level Control	LED ALM: BLINKING ORANGE	Warning	–	Level of “interference in band” signal much higher than TDFE filtered input signal	Increase the donor front end downlink attenuation	–
							Optimize donor antenna direction to decrease interference signal without affecting desired input signal	
					DL output signal too high	–	Increase the donor front end downlink attenuation	
					–	Antenna loop caused by too high gain set vs antenna isolation		
ALC On UL	000018	Automatic Level Control	LED ALM: BLINKING ORANGE	Warning	–	Uplink output signal too high or Antenna loop, caused by too high gain set vs antenna isolation	Increase the service front end/remote unit uplink Main attenuation; if necessary increase the donor front end uplink attenuation too	–
RF ALC DL	00001C	Automatic Level Control	LED ALM: BLINKING ORANGE	Warning	–	Level of “interference in-band” signal much higher than the donor front end filtered input signal	Increase the donor front end downlink attenuation	–
							Optimize donor antenna direction to decrease interference signal without affecting desired input signal	
					DL output signal too high	–	Increase the donor front end downlink attenuation	
					–	Antenna loop caused by too high gain set vs antenna isolation		
RF ALC UL	00001C	Automatic Level Control	LED ALM: BLINKING ORANGE	Warning	–	▸ Uplink output signal too high or ▸ Antenna loop, caused by too high gain set vs antenna isolation	Increase the service front end/remote unit uplink Main attenuation; if necessary increase the donor front end uplink attenuation too	–
Digital ALC UL	00001C	Automatic Level Control (digital stage)	LED ALM: BLINKING ORANGE	Warning	–	▸ Uplink output signal too high or ▸ Antenna loop, caused by too high gain set vs antenna isolation	Increase the service front end/remote unit uplink Main attenuation; if necessary increase the donor front end uplink attenuation too	–

Alarm Id	Type	Alarm Description	LED Status (on equipment)	Severity level	Potential Cause		Possible Solution	Service-affecting fault
					DAS Platform issue	Environment/Installation issue		
Digital ALC DL	00001C	Automatic Level Control (Digital stage)	LED ALM: BLINKING ORANGE	Warning	–	Level of “interference in-band” signal much higher than the donor front end filtered input signal	Increase the donor front end downlink attenuation Optimize donor antenna direction to decrease interference signal without affecting desired input signal	–
					DL output signal too high	–	Increase the donor front end downlink attenuation	
					–	Antenna loop caused by too high gain set vs antenna isolation		
Pwr Low DL SB1 Pwr Low DL SB2 Pwr Low DL SB3 Pwr Low DL SB4 Pwr Low DL SB5 Pwr Low DL SB6 Pwr Low DL SB7 Pwr Low DL SB8 Pwr Low DL SB9	00001C	Downlink power low on sub-band $n$ ( $n= 1$ to 9)	LED ALM: BLINKING RED	Major	–	Input power lower than the user set threshold	Check the antenna input signal Adjust threshold settings and check commissioning	Coverage issue for sub-band $n$
ALC DL SB1 ALC DL SB2 ALC DL SB3 ALC DL SB4 ALC DL SB5 ALC DL SB6 ALC DL SB7 ALC DL SB8 ALC DL SB9	00001C	Downlink Automatic Level Control on sub-band $n$ ( $n= 1$ to 9)	LED ALM: BLINKING ORANGE	Warning	–	Sub-band $n$ : downlink input power exceeds the user-set threshold (downlink <i>Thr Alc</i> )	Adjust threshold settings and check commissioning	Coverage issue for sub-band $n$
ALC UL SB1 ALC UL SB2 ALC UL SB3 ALC UL SB4 ALC UL SB5 ALC UL SB6 ALC UL SB7 ALC UL SB8 ALC UL SB9	00001C	Uplink Automatic Level Control on sub-band $n$ ( $n= 1$ to 9)	LED ALM: BLINKING ORANGE	Warning	–	Sub-band $n$ : uplink input power exceeds the user-set threshold (uplink <i>Thr Alc</i> )	Adjust threshold settings and check commissioning	Coverage issue for sub-band $n$

Chart 1.6 – TSYNC- TDD synchronizer and reference module

Type: 000032 (\*)

SNMP ID: spvTddS

Alarm Id	Type	Alarm Description	LED Status (on equipment)	Severity level	Potential Cause		Possible Solution	Service-affecting fault
					DAS Platform issue	Environment/Installation issue		
Communication	000032	The supervision unit cannot communicate with the module	–	Critical	–	Module unplugged	Insert the module properly	Coverage issue for the synchronized TDD band
					–	Module switched off	Troubleshoot the power source	
					–	PSU cabling	Check the power cords connecting sub-racks	
					–	RS485 cabling	Check the RS485 cabling	–
					Module switched off	–	Power cycle (reset) the module. If the alarm persists replace the module	Coverage issue for the synchronized TDD band
–	–	The module cannot communicate with the supervision unit	LED ALM: RED	Critical	The module might not have been detected by the discovery process.		If the module is not displayed in the System Tree View (Components menu), check its connections and start a new discovery	–
					If the ALM LEDs of all the master unit components are RED: the supervision might be busy or not properly inserted		<ul style="list-style-type: none"> <li>Check the number of components of the system</li> <li>Check that the supervision is properly inserted</li> </ul>	
Low Temperature	000032	The module operating temperature is too low	LED ALM: ORANGE	Minor	–	Low environmental temperature	Check the master unit environmental temperature	–
High Temperature	000032	The module operating temperature is too high	LED ALM: BLINKING RED	Major	–	High environmental temperature	Improve the cooling of the system	–
PLL Unlock	000032	PLL is unlocked	LED ALM: BLINKING RED	Major	The module is faulty	–	Contact technical support	Coverage issue for the synchronized TDD band
Mains Fault	000032	The module current consumption is out of range	LED ALM: BLINKING RED	Major	The module is faulty	–	Contact technical support	Coverage issue for the synchronized TDD band
TDD Comm	000032	Internal communication alarm	LED ALM: BLINKING RED	Major	The module is faulty	–	<ul style="list-style-type: none"> <li>Reset the module</li> <li>If the alarm persists replace the module</li> </ul>	Coverage issue for the synchronized TDD band

(\*) Type 50 valid for OMC versions earlier than 1.8.0 and OMT versions earlier than 3.2.2



Alarm Id	Type	Alarm Description	LED Status (on equipment)	Severity level	Potential Cause		Possible Solution	Service-affecting fault
					DAS Platform issue	Environment/Installation issue		
TDD Unlock	000032	The module cannot detect any synchronization signal	LED ALM: BLINKING RED	Major	–	Incorrect Frame Structure configuration (all models except TSYNC-X)	Verify that the Frame Structure parameters are set according to the Base Station configuration	Coverage issue for the synchronized TDD band
					–	No reference signal from the TDD signal source	Check the TDD signal source, either Base Station (all models, except TSYNC-X) or TCPRIPOI (TSYNC-X).	Coverage issue for the synchronized TDD band
					–	Incorrect cabling	Check that the TDD REF IN port is properly connected to the component that provides the synchronization signal: <ul style="list-style-type: none"><li>▸ TDTPOI for all TSYNC models, except the TSYNC-X,</li><li>▸ TCPRIPOI for the TSYNC-X.</li></ul> Please refer to the connection scheme provided with the system.	Coverage issue for the synchronized TDD band

## 2 – Modules for the Management of the System

### Chart 2.1 – AlarmBoard - External Alarm Module

Type: 000019 <sup>(\*)</sup>

SNMP ID: spvAlarmBoard

Alarm Id		Type	Alarm Description	LED Status (on equipment)	Severity level	Potential Cause		Possible Solution	Service-affecting fault
						DAS Platform issue	Environment/Installation issue		
Communication		000019	The supervision unit cannot communicate with the module	–	Critical	–	Module unplugged	Insert the module properly	–
						–	Module switched off	Troubleshoot the power source	
						–	PSU cabling	Check the power cords connecting sub-racks	
						–	RS485 cabling	Check the RS485 cabling	
						Module switched off	–	Power cycle (reset) the module. If the alarm persists replace the module	
–		000019	The module cannot communicate with the supervision unit	LED ALM: RED	Critical	The module might not have been detected by the discovery process.		If the module is not displayed in the System Tree View (OMT Components menu), check its connections and start a new discovery	–
						If the ALM LEDs of all the master unit components are RED: the supervision might be busy or not properly inserted		<ul style="list-style-type: none"> <li>Check the number of components of the system</li> <li>Check that the supervision is properly inserted</li> </ul>	
External 1 External 2 External 3 External 4 External 5 External 6 External 7 External 8	External 9 External 10 External 11 External 12 External 13 External 14 External 15 External 16	000019	Alarms generated by external devices connected to external alarm inputs (EXT IN connector on the External alarm module front panel)	–	User settable  Factory pre-set level: Warning	–	–	Check external devices status and external inputs polarity	–
Low Temperature		000019	The module operating temperature is too low	LED ALM: BLINKING RED	Major	–	Low environmental temperature	Check the master unit environmental temperature	–
High Temperature		000019	The module operating temperature is too high	LED ALM: BLINKING RED	Major	–	High environmental temperature	Improve the cooling of the system	–
Mains Fault		000019	The module current consumption is out of range	LED ALM: BLINKING RED	Major	The module is faulty		Contact technical support	–

<sup>(\*)</sup> Type 25 valid for OMC versions earlier than 1.8.0 and OMT versions earlier than 3.2.2

Chart 2.2 – TSPV, MU-SPV Light - Supervision Module and Light Supervision Module

Types: 000001<sup>(\*)</sup>, 000030<sup>(\*)</sup>, 00004A

SNMP ID: spvMuSpv

Alarm Id	Type	Alarm Description	LED Status (on equipment)	Severity level	Potential Cause		Possible Solution	Service-affecting fault
					DAS Platform issue	Environment/Installation issue		
Communication	000001 000030 00004A	The Supervision module does not communicate	–	Critical	The module is faulty	–	Contact technical support	–
External 1 External 2 External 3 External 4	000001 000030 00004A	Alarms generated by external devices connected to external alarm inputs (EXT IN connector on the supervision module front panel)	–	user settable  Factory pre-set level: Warning	–	–	Check external devices status and external inputs polarity	–
Mains Absence	000001 000030 00004A	The Supervision module is not powered	–	Critical	–	Problem on external power source	Troubleshoot the power source	The subrack hosting the Supervision module is not powered: check the master unit components; most likely all the master unit is powered off
					Fault on master unit power supply	–	<b>Remotely:</b> no actions <b>On-site:</b> check master unit power supply	

<sup>(\*)</sup> Types 1 (000001), 48 (000030) valid for OMC versions earlier than 1.8.0 and OMT versions earlier than 3.2.2

### 3 – Power Supply Components

Chart 3.1 – TPSU - AC or DC Power Supply Unit

Type: 000002 <sup>(\*)</sup>

SNMP ID: spvPsu

Alarm Id	Type	Alarm Description	LED Status (on equipment)	Severity level	Potential Cause		Possible Solution	Service-affecting fault
					DAS Platform issue	Environment/Installation issue		
Communication	000002	The supervision unit cannot communicate with the module	–	Critical	–	Module unplugged	Insert the module properly	–
					–	Module switched off	Troubleshoot the external power supply source	
					–	PSU cabling	Check the power cord connecting the system to the external power supply source	
					–	RS485 cabling	Check the RS485 cabling	
					Module switched off	–	Power cycle (reset) the module. If the alarm persists replace the module	
–	–	The module cannot communicate with the supervision unit	LED ALM: RED	Critical	The module might not have been detected by the discovery process.		If the module is not displayed in the System Tree View (Components menu), check its connections and start a new discovery	–
					If the ALM LEDs of all the master unit components are RED: the supervision might be busy or not properly inserted		<ul style="list-style-type: none"> <li>Check the number of components of the system</li> <li>Check that the supervision is properly inserted</li> </ul>	
Low Temperature	000002	The module operating temperature is too low	LED ALM: ORANGE	Minor	–	Low environmental temperature	Check the master unit environmental temperature	–
High Temperature	000002	The module operating temperature is too high	LED ALM: BLINKING RED	Major	–	High environmental temperature	Improve the cooling of the system	–
Output Voltage	000002	The module output voltage is out of factory-set range	LED ALM: BLINKING RED	Major	The module is faulty	–	Contact technical support	–
Output Current	000002	Current consumption is out of range	LED ALM: BLINKING RED	Major	–	Current sharing not properly working	Number of power supply not properly calculated	–
					–	One or more power supply switched off	Switch on all power supply modules	
					One of the power supply is out of service	–	Replace the faulty power supply: contact technical support	

<sup>(\*)</sup> Type 2 valid for OMC versions earlier than 1.8.0 and OMT versions earlier than 3.2.2



Chart 3.2 – SUB-PSU - 19" Subrack for the AC or DC PSU Modules for Master Unit

Type: 000025 (\*)

SNMP ID: spvPsuS

Alarm Id	Type	Alarm Description	LED Status (on equipment)	Severity level	Potential Cause		Possible Solution	Service-affecting fault
					DAS Platform issue	Environment/Installation issue		
Communication	000025	The supervision unit cannot communicate with the subrack	–	Critical	–	Equipment switched off	Troubleshoot the external power supply source	All connected active RF interface modules: coverage issue for the specific operator(s)/band(s)
					–	PSU cabling	Check the power cords connecting the system to the external power supply source	
					–	RS485 cabling	Check the RS485 cabling	–
Communication 1 Communication 2 Communication 3	000025	The power supply module $n$ ( $n=1$ to 3) equipped in the subrack does not communicate	–	Critical	–	The power supply module $n$ is not inserted properly (not connected to the backplane)	Insert the module properly	–
					–	The power supply module $n$ is not connected to the power supply source	Connect the module to the power supply source	
					The power supply module $n$ is faulty	–	Contact technical support	
Temperature 1 Temperature 2 Temperature 3	000025	The operating temperature of the power supply module $n$ ( $n=1$ to 3) equipped in the subrack is out of range	–	Major	–	Environmental temperature	Improve the cooling of the system	–
Output Current 1 Output Current 2 Output Current 3	000025	The current consumption of the power supply module $n$ ( $n=1$ to 3) equipped in the subrack is out of range	–	Major	–	Current sharing is not working properly	Number of power supply not properly calculated	–
					–	One or more power supply switched off	Switch on all power supply modules	
					One of the power supply is out of service	–	The faulty power supply has to be replaced: contact technical support	
AC Input Voltage 1 AC Input Voltage 2 AC Input Voltage 3	000025	No AC Input Voltage (module $n$ , $n=1$ to 3)	AC LED on the front panel of the module $n$ : OFF	Major	–	The power supply module $n$ is not connected to the power supply source	Connect the module to the power supply source	–
DC Output Voltage 1 DC Output Voltage 2 DC Output Voltage 3	000025	The DC Output Voltage of the power supply module $n$ ( $n=1$ to 3) equipped in the subrack is out of range	–	Major	–	The power supply module is not inserted properly (not connected to the backplane)	Insert the module properly	–
			SUB-PSU LEDs: DC FAIL: ON DC ON: off		–	The power supply module $n$ is not connected to the power supply source	Connect the module to the power supply source	
					The power supply module is faulty	–	Contact technical support	

(\*) Type 37 valid for OMC versions earlier than 1.8.0 and OMT versions earlier than 3.2.2







Alarm Id	Type	Alarm Description	LED Status (on equipment)	Severity level	Potential Cause		Possible Solution	Service-affecting fault
					DAS Platform issue	Environment/Installation issue		
Output Voltage 1 Output Voltage 2 Output Voltage 3 Output Voltage 4 Output Voltage 5 Output Voltage 6 Output Voltage 7 Output Voltage 8 Output Voltage 9 Output Voltage 10 Output Voltage 11 Output Voltage 12	000025	The DC Output Voltage of the Vdc Output connector $n$ ( $n = 1$ to 12) is out of range	–	Major	–	Fuse blown	▸ Check the power supply connection ▸ Change the fuse or use a different output port	–
Fan Fail 1 Fan Fail 2 Fan Fail 3	000025	The fan unit equipped in the power supply module $n$ ( $n = 1$ to 3) is faulty	–	Warning	–	Dust/dirty/aggressive environment	Improve the cooling/cleaning of the system and protect the equipment	–
					One or both fans are faulty	–	Contact technical support	

Chart 3.3 – PwrDistributor - 19" Sub-rack for the AC or DC Remote PSU Modules and DC Distribution

Type: 00002D (\*)

SNMP ID: spvPwrDistributor

Alarm Id	Type	Alarm Description	LED Status (on equipment)	Severity level	Potential Cause		Possible Solution	Service-affecting fault
					DAS Platform issue	Environment/Installation issue		
Communication	00002D	The supervision unit cannot communicate with the sub-rack	–	Critical	–	Equipment switched off	Troubleshoot the power source	–
					–	PSU cabling	Check the power cord connecting the system to the external power supply source	
					–	RS485 cabling	Check the RS485 cabling	
					Equipment switched off	–	Power cycle (reset) the module. If the alarm persists replace the module	
Communication PSU 1 Communication PSU 2 Communication PSU 3 Communication PSU 4	00002D	The power supply module $n$ ( $n = 1$ to 4) equipped in the sub-rack does not communicate	–	Critical	–	The power supply equipment is not inserted properly (not connected to the backplane)	Insert the module properly	–
					The power supply module is faulty	–	Contact technical support	
Temperature 1 Temperature 2 Temperature 3 Temperature 4	00002D	The operating temperature of the power supply module $n$ ( $n = 1$ to 4) equipped in the sub-rack is out of range	–	Major	–	Environmental temperature	Improve the cooling of the system	–
V Out Min 1 V Out Min 2 V Out Min 3 V Out Min 4	00002D	The output voltage from the power supply module $n$ ( $n = 1$ to 4) equipped in the sub-rack is below the factory-set minimum threshold	–	Major	–	The module might be overloaded: not all the modules equipped in the subrack are ON or they are not operating properly	Switch all the power supply modules on. If the problem persists contact technical support	–
					The power supply module is faulty	–	Contact technical support	
V Out Max 1 V Out Max 2 V Out Max 3 V Out Max 4	00002D	The output voltage from the power supply module $n$ ( $n = 1$ to 4) equipped in the sub-rack exceeds the factory-set maximum threshold	–	Major	The power supply module is faulty	–	Contact technical support	–
Power Fail PSU 1 Power Fail PSU 2 Power Fail PSU 3 Power Fail PSU 4	00002D	No input voltage to the power supply module $n$ ( $n = 1$ to 4) equipped in the sub-rack	 and  (AC/DC module)  and  (DC/DC module): OFF	Major	–	The power supply module is not connected to the power supply source	Connect the module to the power supply source	–

(\*) Type 45 valid for OMC versions earlier than 1.8.0 and OMT versions earlier than 3.2.2

Alarm Id		Type	Alarm Description	LED Status (on equipment)	Severity level	Potential Cause		Possible Solution	Service-affecting fault
						DAS Platform issue	Environment/Installation issue		
PSU Fault 1 PSU Fault 2 PSU Fault 3 PSU Fault 4		00002D	The power supply module $n$ ( $n=1$ to 4) equipped in the sub-rack is faulty	! ON RED	Major	Auto power-off	–	Reset the module (extract the module and insert it again)	–
Over Temper. PSU 1 Over Temper. PSU 2 Over Temper. PSU 3 Over Temper. PSU 4		00002D	The operating temperature of the power supply module $n$ ( $n = 1$ to 4) is too high	✖ : ON	Major	Defective fan	–	Reset the module (extract the module and insert it again) If the problem persists replace the module	–
Cur Low 1	Cur Low 17	00002D	The detected current absorption on port $n$ ( $n = 1$ to 32) is below the factory-set minimum threshold	Output port $n$ status led: ON orange	Major	–	The remote unit to be powered is off	Switch the remote unit on	–
Cur Low 2	Cur Low 18					–	The remote unit to be powered is not connected properly	Check the remote unit connection	
Cur Low 3	Cur Low 19					–	Equipment output port not properly connected	Check the port positive and negative leads connection	
Cur Low 4	Cur Low 20					–			
Cur Low 5	Cur Low 21					–			
Cur Low 6	Cur Low 22					–			
Cur Low 7	Cur Low 23					–			
Cur Low 8	Cur Low 24					–			
Cur Low 9	Cur Low 25					–			
Cur Low 10	Cur Low 26					–			
Cur Low 11	Cur Low 27					–			
Cur Low 12	Cur Low 28					–			
Cur Low 13	Cur Low 29					–			
Cur Low 14	Cur Low 30					–			
Cur Low 15	Cur Low 31					–			
Cur Low 16	Cur Low 32					–			
Cur High 1	Cur High 17	00002D	The detected current absorption exceeds the maximum threshold set for the port $n$ in webpages ( $n = 1$ to 32) (Thr Cur Max)  <b>The alarmed output port is switched off</b>	Output port $n$ status led: ON orange	Major	The remote unit current absorption is higher than the maximum threshold set for the port via webpages	–	Check the remote unit max current absorption and set the threshold accordingly  <b>Please note: the port needs to be enabled in the PwrDistributor OMT webpage</b>	–
Cur High 2	Cur High 18					–	If the problem persists the connecting cable might be affected by a short-circuit	Test the cable for short-circuit	
Cur High 3	Cur High 19					–			
Cur High 4	Cur High 20					–			
Cur High 5	Cur High 21					–			
Cur High 6	Cur High 22					–			
Cur High 7	Cur Low 23					–			
Cur High 8	Cur High 24					–			
Cur High 9	Cur High 25					–			
Cur High 10	Cur High 26					–			
Cur High 11	Cur High 27					–			
Cur High 12	Cur High 28					–			
Cur High 13	Cur High 29					–			
Cur High 14	Cur High 30					–			
Cur High 15	Cur High 31					–			
Cur High 16	Cur High 32					–			



Alarm Id		Type	Alarm Description	LED Status (on equipment)	Severity level	Potential Cause		Possible Solution	Service-affecting fault
						DAS Platform issue	Environment/Installation issue		
DC Out 1	DC Out 17	00002D	No DC output voltage on Vdc Output port $n$ ( $n = 1$ to 32)	Output port $n$ status led: ON red	Critical	Port $n$ disabled due to overcurrent protection	–	Check that the port positive and negative leads are connected properly and test the cable for short circuit <b>Please note: the port needs to be enabled in the PwrDistributor OMT webpage</b>	–
DC Out 2	DC Out 18								
DC Out 3	DC Out 19								
DC Out 4	DC Out 20								
DC Out 5	DC Out 21								
DC Out 6	DC Out 22								
DC Out 7	DC Out 23					If the problem persists the protection fuse has blown	–	Replace the fuse	–
DC Out 8	DC Out 24								
DC Out 9	DC Out 25								
DC Out 10	DC Out 26								
DC Out 11	DC Out 27								
DC Out 12	DC Out 28								
DC Out 13	DC Out 29								
DC Out 14	DC Out 30								
DC Out 15	DC Out 31								
DC Out 16	DC Out 32								

## 4 – Capacity Management Components

Chart 4.1 – RF Switch - Configurable RF switch 1:4 and TCM3-4 Capacity Manager 3x4

Type: 000034 <sup>(\*)</sup>

SNMP ID: spvRfSwitch

Alarm Id	Type	Alarm Description	LED Status (on equipment)	Severity level	Potential Cause		Possible Solution	Service-affecting fault
					DAS Platform issue	Environment/Installation issue		
Communication	000034	The supervision unit cannot communicate with the module	–	Critical	–	Module unplugged	Insert the module properly	Coverage issue for the specific operators/bands
					–	Module switched off	Troubleshoot the power source	
					–	PSU cabling	Check the power cords connecting sub-racks	
					–	RS485 cabling	Check the RS485 cabling	–
					Module switched off	–	Power cycle (reset) the module. If the alarm persists replace the module	Coverage issue for the specific operators/bands
–	–	The module cannot communicate with the supervision unit	ALM LED: RED	Critical	The module might not have been detected by the discovery process.		If the module is not displayed in the System Tree View (Components menu), check its connections and start a new discovery	–
					If the ALM LEDs of all the master unit components are RED: the supervision might be busy or not properly inserted		<ul style="list-style-type: none"> <li>Check the number of components of the system</li> <li>Check that the supervision is inserted properly</li> </ul>	
Low Temperature	000034	The module operating temperature is too low	ALM LED: ORANGE	Minor	–	Low environmental temperature	Check the master unit environmental temperature	–
High Temperature	000034	The module operating temperature is too high	ALM LED: BLINKING RED	Major	–	High environmental temperature	Improve the cooling of the system	–
Mains Fault	000034	The module current consumption is out of range	ALM LED: BLINKING RED	Major	The module is faulty	–	Contact technical support	–

<sup>(\*)</sup> Type 52 valid for OMC versions earlier than 1.8.0 and OMT versions earlier than 3.2.2

## 5 – Forced-air Cooling

### Chart 5.1 – TFAN - Fan Rack

Type: 00001D (\*)

SNMP ID: spvFan

Alarm Id	Type	Alarm Description	LED Status (on equipment)	Severity level	Potential Cause		Possible Solution	Service-affecting fault
					DAS Platform issue	Environment/Installation issue		
Communication	00001D	The supervision unit cannot communicate with the equipment	–	Critical	–	Module unplugged	Insert the module properly	–
					–	Equipment switched off	Troubleshoot the power source	
					–	PSU cabling	Check the power cords connecting sub-racks	
					–	RS485 cabling	Check the RS485 cabling	
					Equipment switched off	–	Power cycle (reset) the equipment. If the alarm persists replace the module	
–	–	The equipment cannot communicate with the supervision unit	RED	Critical	The forced-air cooling subrack might not have been detected by the discovery process.		If the forced-air cooling subrack is not displayed in the System Tree View (Components menu), check its connections and start a new discovery	–
					If the ALM LEDs of all the master unit components are RED: the supervision might be busy or not properly inserted		<ul style="list-style-type: none"> <li>Check the number of components of the system</li> <li>Check that the supervision is properly inserted</li> </ul>	
Low Temperature	00001D	The equipment operating temperature is too low	BLINKING RED	Major	–	Low environmental temperature	Check the master unit environmental temperature	–
High Temperature	00001D	The equipment operating temperature is too high	BLINKING RED	Major	–	High environmental temperature	Improve the cooling of the system	–
Mains Fault	00001D	The equipment current consumption is out of range	BLINKING RED	Major	The subrack is faulty	–	Contact technical support	–
Fan Speed	00001D	Fans speed is too low	BLINKING ORANGE	Warning	–	Dust / dirty environment	Improve the cooling/cleaning of the system	–
					Faulty fan / fans kit	–	Check the temperature of the subrack: if the temperature is over 40°C (104°F) replace the subrack	

(\*) Type 29 valid for OMC versions earlier than 1.8.0 and OMT versions earlier than 3.2.2

## 6 – Optical Interfaces towards Remote Units

### Chart 6.1 – MU-OTRX - Optical Tx/Rx for Master Unit

Type: 000003<sup>(\*)</sup>, 00005A

SNMP ID: spvMotrx

Alarm Id	Type	Alarm Description	LED Status (on equipment)	Severity level	Potential Cause		Possible Solution	Service-affecting fault
					DAS Platform issue	Environment/Installation issue		
Communication	000003 00005A	The supervision unit cannot communicate with the module	–	Critical	–	Module unplugged	Insert the module properly	Coverage issue for the specific operator(s)/band(s) of all connected remote units
					–	Module switched off	Troubleshoot the power source	
					–	PSU cabling	Check the power cords connecting sub-racks	
					–	RS485 cabling	Check the RS485 cabling	–
					Module switched off	–	Power cycle (reset) the module. If the alarm persists replace the module	Coverage issue for the specific operator(s)/band(s) of all connected remote units
–	–	The module cannot communicate with the supervision unit	ALM LED: RED	Critical	The module might not have been detected by the discovery process		If the module is not displayed in the System Tree View (OMT Components menu), check its connections and start a new discovery	–
					If the ALM LEDs of all the master unit components are RED: the supervision might be busy or not properly inserted		<ul style="list-style-type: none"> <li>Check the number of components of the system</li> <li>Check that the supervision is properly inserted</li> </ul>	
Low Temperature	000003 00005A	The module operating temperature is too low	ALM LED: BLINKING RED	Major	–	Low environmental temperature	Check the master unit environmental temperature	<b>The module enters auto power-off:</b> coverage issue for the specific operator(s)/band(s) of all connected remote units
High Temperature	000003 00005A	The module operating temperature is too high	ALM LED: RED	Critical	–	High environmental temperature	Improve the cooling of the system	<b>The module enters auto power-off:</b> coverage issue for the specific operator(s)/band(s) of all connected remote units
Mains Fault	000003 00005A	The module current consumption is out of range	ALM LED: BLINKING RED	Major	The module is faulty	–	Contact technical support	<b>The module enters auto power-off:</b> coverage issue for the specific operator(s)/band(s) of all connected remote units
Laser Fault	000003	The module laser current consumption is out of range	ALM LED: RED All DL LEDs: OFF	Critical	The laser is warming up	–	Wait for the laser to warm up	–
					If the alarm persists the module is faulty	–	Contact technical support	<b>The module enters auto power-off:</b> coverage issue for the specific operator(s)/band(s) of all connected remote units

(\*) Type 3 (000003) valid for OMC versions earlier than 1.8.0 and OMT versions earlier than 3.2.2



Alarm Id	Type	Alarm Description	LED Status (on equipment)	Severity level	Potential Cause		Possible Solution	Service-affecting fault
					DAS Platform issue	Environment/Installation issue		
Laser Fault M1	00005A	Transmitter A laser current consumption is out of range	ALM LED: RED DL 1-2 LEDs: OFF	Critical	The laser is warming up	–	Wait for the laser to warm up	–  <b>The module enters auto power-off:</b> coverage issue for the specific operator(s)/band(s) of the remote units connected to the transmitter A
					If the alarm persists transmitter A is faulty		Contact technical support	
Laser Fault M2	00005A	Transmitter B laser current consumption out of range	ALM LED: RED DL 3-4 LEDs: OFF	Critical	The laser is warming up	–	Wait for the laser to warm up	–  <b>The module enters auto power-off:</b> coverage issue for the specific operator(s)/band(s) of the remote units connected to the transmitter B
					If the alarm persists transmitter B is faulty	–	Contact technical support	
Laser Warn	000003	The module laser current consumption is slightly out of range	ALM+ DL LEDs: ORANGE	Minor	Degrading laser performance	–	Contact technical support	–
Laser Warn M1	00005A	Transmitter A laser current consumption is slightly out of range	ALM+ DL 1-2 LEDs: ORANGE	Minor	Degrading laser performance	–	Contact technical support	–
Laser Warn M2	00005A	Transmitter B laser current consumption is slightly out of range	ALM+ DL 3-4 LEDs: ORANGE	Minor	Degrading laser performance	–	Contact technical support	–
Rx1 Optical Warn Rx2 Optical Warn Rx3 Optical Warn Rx4 Optical Warn	000003 00005A	RXn ( $n = 1$ to 4) received optical power is slightly below the operating range (+6dBm to -4dBm)	UL ( $n$ ) LED: ORANGE	Warning	–	Problem on optical link	Check the optical fiber link	–
					–	Dirty optical connector	Clean the optical fiber connector	
					If the alarm persists after the previous steps: degrading optical receiver	–	Contact technical support	
Rx1 Optical Low Rx2 Optical Low Rx3 Optical Low Rx4 Optical Low	000003 00005A	RXn ( $n = 1$ to 4) received optical power is below the operating range (+6dBm to -4dBm)	UL ( $n$ ) + ALM LEDs: RED	Major	–	Problem on optical link	Check the optical fiber link	Coverage issue for the specific operator(s)/band(s) of all connected remote units
					–	Optical connector not properly inserted	Check the optical fiber connector installation	
					If the alarm persists after the previous steps: degrading optical receiver		Contact technical support	
					–	Remote unit(s) switched off, only if the remote unit(s) communication alarm is active	Check the remote unit(s) status	–
Rx1 Optical High Rx2 Optical High Rx3 Optical High Rx4 Optical High	000003 00005A	RXn ( $n = 1$ to 4) received optical power is higher than the operating range (+6dBm to -4dBm)	UL ( $n$ ) + ALM LEDs: RED	Critical	Faulty module	–	Contact technical support	Coverage issue for the specific operator(s)/band(s) of all connected remote units
					Faulty connected Remote Unit	–	Contact technical support	
					–	Different optical source	Troubleshoot the optical source	

Chart 6.2 – NG-OTRX - Optical Tx/Rx for Master Unit (ED35TD)

Type: 00005C

Alarm Id	Type	Alarm Description	LED Status (on equipment)	Severity level	Potential Cause		Possible Solution	Service-affecting fault
					DAS Platform issue	Environment/Installation issue		
Communication	00005C	The supervision unit cannot communicate with the NG OTRX	–	Critical	–			The NG OTRX sub-rack is out of service
					–	Sub-rack switched off	Check the mains power supply	
					–	Cabling	Check the power cords connecting sub-racks	–
					–	NG-OTRX sub-rack switched off	Check the RS485 cabling	
–	–	The NG OTRX cannot communicate with the supervision unit	ALM LED: RED	Critical	The ED35TD might not have been detected by the discovery process		If the module is not displayed in the System Tree View (OMT Components menu), check its connections and start a new discovery	–
					If the ALM LEDs of all the master unit components are RED: the supervision might be busy or not properly inserted		<ul style="list-style-type: none"> <li>Check the number of components of the system</li> <li>Check that the supervision is properly inserted</li> </ul>	
Low Temperature	00005C	The NG OTRX sub-rack operating temperature is too low	ALM LED: ORANGE	Minor	–	Low environmental temperature	Check the master unit environmental temperature	Possible malfunction of the NG OTRX sub-rack
High Temperature	00005C	The NG OTRX operating temperature is too high	ALM LED: RED	Critical	–	High environmental temperature	Improve the cooling of the system	Out of service of all the remote units connected to the NG-OTRX
Mains Fault	00005C	The NG OTRX current consumption is out of range	ALM LED: BLINKING RED	Major	The sub-rack is faulty	–	Contact technical support	Out of service of all the remote units connected to the NG-OTRX
Clock Distributor Unlock	00005C	The clock distributor is not locked	ALM LED: BLINKING RED	Major	Faulty module	–	Power cycle the subrack. If the alarm persists, contact technical support	Out of service of all the remote units connected to the NG-OTRX
Init Failure	00005C	The initialization procedure did not complete properly	ALM LED: RED	Critical	Faulty boot procedure	–	Power cycle the subrack. If the alarm persists, contact technical support	Possible malfunction of the NG OTRX sub-rack
Fan Speed	00005C	Fans speed is too low	ALM LED: ORANGE	Minor	–	Dust / dirty environment	Check the NG-OTRX temperature: if the temperature is critical clean the fans to remove dirt	–
					Faulty fan kit	–	Check the NG-OTRX temperature: if the temperature is critical replace the fan kit	



Alarm Id	Type	Alarm Description	LED Status (on equipment)	Severity level	Potential Cause		Possible Solution	Service-affecting fault
					DAS Platform issue	Environment/Installation issue		
Current A UL1	00005C	NG-OTRX UL A UL1 current consumption is out of range	ALM LED: BLINKING RED	Major	Faulty module	–	Contact technical support	Possible out of service of the remote unit connected to the UL path
Current A UL2	00005C	NG-OTRX UL A UL2 current consumption is out of range						
Current B UL1	00005C	NG-OTRX UL B UL1 current consumption is out of range						
Current B UL2	00005C	NG-OTRX UL B UL2 current consumption is out of range						
Current C UL1	00005C	NG-OTRX UL C UL1 current consumption is out of range						
Current C UL2	00005C	NG-OTRX UL C UL2 current consumption is out of range						
Current D UL1	00005C	NG-OTRX UL D UL1 current consumption is out of range						
Current D UL2	00005C	NG-OTRX UL D UL2 current consumption is out of range						
TDD Unlock	00005C	Missing TDD signal	ALM LED: BLINKING RED	Major	–	No TDD reference signal input on TDD IN port	Check the TSYNC distributing the BS TDD reference signals to the NG-OTRX	Out of service of all the remote units connected to the NG-OTRX
Rx Optical Low A1 Rx Optical Low A2 Rx Optical Low B1 Rx Optical Low B2 Rx Optical Low C1 Rx Optical Low C2 Rx Optical Low D1 Rx Optical Low D2	00005C	Received optical power is below the factory-set minimum threshold	ALM LED: BLINKING RED	Major	–	Optical connector not properly inserted	Check the optical fiber connector installation	Out of service for the related remote unit
						Problem on optical link	Check the optical fiber link	
						Degrading optical link	Connect the optical fiber to another optical receiver (if available)	
						Remote unit switched off (only if the RU communication alarm is active)	Check the Remote Unit status	
Loss of Sync A1 Loss of Sync A2 Loss of Sync B1 Loss of Sync B2 Loss of Sync C1 Loss of Sync C2 Loss of Sync D1 Loss of Sync D2	00005C	No sync available on optical link	ALM LED: BLINKING RED	Major	–	Optical connector not properly inserted or dirty	Check the optical fiber connector installation	Out of service for the related remote unit
						Problem on optical link	Check the optical fiber link	
						Degrading optical receiver	Connect the optical fiber to another optical receiver (if available)	
						Remote unit switched off (only if the RU communication alarm is active)	Check the Remote Unit status	
						Wrong remote device connected (not NG-RU)	Check the fiber connected and related remote device	



Alarm Id	Type	Alarm Description	LED Status (on equipment)	Severity level	Potential Cause		Possible Solution	Service-affecting fault
					DAS Platform issue	Environment/Installation issue		
Overdrive A DL1	00005C	NG-OTRX A DL1 RF level is too high	ALM LED: BLINKING RED	Major		RF input signal detected too high	Check the DL commissioning and RF input level	Possible out of service of the remote unit connected to the DL path
Overdrive A DL2	00005C	NG-OTRX A DL2 RF level is too high						
Overdrive B DL1	00005C	NG-OTRX B DL1 RF level is too high						
Overdrive B DL2	00005C	NG-OTRX B DL2 RF level is too high						
Overdrive C DL1	00005C	NG-OTRX C DL1 RF level is too high						
Overdrive C DL2	00005C	NG-OTRX C DL2 RF level is too high						
Overdrive D DL1	00005C	NG-OTRX D DL1 RF level is too high						
Overdrive D DL2	00005C	NG-OTRX D DL2 RF level is too high						
RMS Power Max A UL1	00005C	NG-OTRX A UL1 RF level is too high	ALM LED: BLINKING ORANGE	Warning		UL RF signal detected too high	Check the UL commissioning of the connected remote unit	Possible degradation of the connected remote unit to the UL path
RMS Power Max A UL2	00005C	NG-OTRX A UL2 RF level is too high						
RMS Power Max B UL1	00005C	NG-OTRX B UL1 RF level is too high						
RMS Power Max B UL2	00005C	NG-OTRX B UL2 RF level is too high						
RMS Power Max C UL1	00005C	NG-OTRX C UL1 RF level is too high						
RMS Power Max C UL2	00005C	NG-OTRX C UL2 RF level is too high						
RMS Power Max D UL1	00005C	NG-OTRX D UL1 RF level is too high						
RMS Power Max D UL2	00005C	NG-OTRX D UL2 RF level is too high						

Chart 6.3 – TTRUPTP - Point to Point Link Master and Secondary

Type: 000004 (\*)

SNMP ID: spvPtp

Alarm Id	Type	Alarm Description	LED Status (on equipment)	Severity level	Potential Cause		Possible Solution	Service-affecting fault
					DAS Platform issue	Environment/Installation issue		
Communication	000004	The supervision unit cannot communicate with the module	–	Critical	–	Module unplugged	Insert the module properly	Coverage issue for the specific operator(s)/band(s) of all connected remote units
					–	Module switched off	Troubleshoot the power source	
					–	PSU cabling	Check the power cords connecting sub-racks Check the optical fiber link	
					–	RS485 cabling	Check the RS485 cabling (TTRUPTP Master)	–
					Module switched off	–	Power cycle (reset) the module. If the alarm persists replace the module	Coverage issue for the specific operator(s)/band(s) of all connected remote units
–	–	The module cannot communicate with the supervision unit	ALM LED: RED	Critical	The module might not have been detected by the discovery process.		If the module is not displayed in the Optical System Tree View (OMT Components menu), check its connections and start a new discovery	–
					If the ALM LEDs of all the master unit components are RED: the supervision might be busy or not properly inserted		<ul style="list-style-type: none"> <li>Check the number of components of the system</li> <li>Check that the supervision is properly inserted</li> </ul>	
Operator	000004	A <b>factory-authorized</b> operator is testing the Secondary TTRUPTP locally	ALM LED: ORANGE (secondary TTRUPTP)	Minor	–	–	Check the operator presence	–
Low Temperature	000004	The module operating temperature is too low	ALM LED: ORANGE	Minor	–	Low environmental temperature	Check the master unit environmental temperature	<b>The module enters auto power-off:</b> coverage issue for the specific operator(s)/band(s) of all connected remote units
High Temperature	000004	The module operating temperature is too high	ALM LED: BLINKING RED	Major	–	High environmental temperature	Improve the cooling of the system	<b>The module enters auto power-off.</b> coverage issue for the specific operator(s)/band(s) of all connected remote units
Mains Fault	000004	The module current consumption is out of range	ALM LED: BLINKING RED	Major	The module is faulty	–	Contact technical support	<b>The module enters auto power-off.</b> coverage issue for the specific operator(s)/band(s) of all connected remote units

(\*) Type 4 valid for OMC versions earlier than 1.8.0 and OMT versions earlier than 3.2.2



Alarm Id	Type	Alarm Description	LED Status (on equipment)	Severity level	Potential Cause		Possible Solution	Service-affecting fault
					DAS Platform issue	Environment/Installation issue		
Laser Fault	000004	The module laser current consumption is out of range	Master TTRUPTP: ALM LED: RED and DL LED: OFF Secondary TTRUPTP: ALM LED: RED and UL LED: OFF	Major	The module is faulty	–	Contact technical support	<b>The module enters auto power-off.</b> coverage issue for the specific operator(s)/band(s) of all connected remote units
Laser Warn	000004	The module laser current consumption slightly out of range	Master TTRUPTP: LEDs ALM + DL: ORANGE Secondary TTRUPTP: LEDs ALM + UL: ORANGE	Warning	Degrading laser performance	–	Contact technical support	–
Rx Optical Low	000004	Received optical power is below the operating range (+6dBm to -4dBm)	Master TTRUPTP: ALM + UL LED: RED Secondary TTRUPTP: ALM + DL LED: RED	Major	–	Problem on optical link	Check the optical fiber link	Coverage issue for the specific operator(s)/band(s) of all connected remote units
					–	Optical connector not properly inserted	Check the optical fiber connector installation	
					If the alarm persists after the previous steps: degrading optical receiver	–	Contact technical support	
					–	Connected Secondary Point to Point module switched off (only if the TTRUPTP Secondary communication alarm is active)	Check the TTRUPTP Secondary status	
					Laser of connected Master Point to Point module switched off		Check the TTRUPTP Master status	
Rx Optical Warn	000004	Received Optical Power is slightly below the operating range (+6dBm to -4dBm)	Master TTRUPTP: UL LED: ORANGE Secondary TTRUPTP: DL LED: ORANGE	Warning	–	Problem on optical link	Check the optical fiber link	–
					–	Dirty optical connector	Clean the optical fiber connector	
					If the alarm persists after the previous steps: degrading optical receiver	–	Contact technical support	
Rx Optical High	000004	Received optical power is higher than the operating range (+6dBm to -4dBm)	Master TTRUPTP: ALM + UL LED: RED Secondary TTRUPTP: ALM + DL LED: RED	Major	Faulty module	–	Contact technical support	Coverage issue for the specific operator(s)/band(s) of all connected remote units
					TTRUPTP Master: faulty connected Secondary Point to Point module	–	Contact technical support	
					TTRUPTP Secondary: faulty connected Remote Unit			
					–	Different optical source	Troubleshoot the optical source	

## 7 – Equipment Extending Coverage and Distributing Capacity

Chart 7.1 – TSFE- Service Front End

Type: 00001A (\*)

SNMP ID: spvSfe

Alarm Id	Type	Alarm Description	LED Status (on equipment)	Severity level	Potential Cause		Possible Solution	Service-affecting fault
					DAS Platform issue	Environment/Installation issue		
Communication	00001A	The supervision unit cannot communicate with the equipment	–	Critical	–	Equipment unplugged	Insert the equipment properly	Coverage issue for the specific operator(s)/band
					–	Equipment switched off	Check the mains power supply Power cycle (reset) the equipment.	
					–	PSU cabling	Check the power cords connecting sub-racks	
					–	RS485 cabling	Check the RS485 cabling	–
					Equipment switched off	–	If the alarm persists replace the module	Coverage issue for the specific operator(s)/band
–	–	The equipment cannot communicate with the supervision module	RED	Critical	The equipment might not have been detected by the discovery process.		If the Service Front End Subrack is not displayed in the System Tree View (Components menu), check its connections and start a new discovery	–
					If the ALM LEDs of all the master unit components are RED: the supervision might be busy or not properly inserted		<ul style="list-style-type: none"> <li>Check the number of components of the system</li> <li>Check that the supervision is properly inserted</li> </ul>	
Low Temperature	00001A	The equipment operating temperature is too low	BLINKING RED	Major	–	Low environmental temperature	Check the master unit environmental temperature	–
High Temperature	00001A	The equipment operating temperature is too high	BLINKING RED	Major	–	High environmental temperature	Improve the cooling of the system	Coverage issue for the specific operator(s)/band
Mains Fault	00001A	The equipment current consumption is out of range (uplink path)	BLINKING RED	Major	–	<ul style="list-style-type: none"> <li>Antenna loop or</li> <li>Level of uncoordinated users too strong</li> </ul>	<ul style="list-style-type: none"> <li>Increase the service front end attenuation on uplink path</li> <li>If the alarm is permanent → enable the LNA again</li> <li>If the alarm persists → contact technical support</li> </ul>	<b>The equipment enters auto power-off:</b> coverage issue for the specific operator(s)/band
UL Power High	00001A	Automatic Level Control	BLINKING ORANGE	Warning	–	Level of uncoordinated users too strong	Increase the service front end uplink Main attenuation	–
Fan Speed	00001A	Fan speed is too low	BLINKING ORANGE	Warning	–	Dust / dirty environment	Improve the cooling/cleaning of the system	–
					Faulty fan / fans kit	–	Check the temperature of the power amplifiers inside the service front end: if the temperature is over 65°C (149°F) replace the equipment	

(\*) Type 26 valid for OMC versions earlier than 1.8.0 and OMT versions earlier than 3.2.2



Chart 7.2 – NG-RU - Next Generation Remote Units with 40W Output Power

Types: 00005E

Alarm Id	Type	Alarm Description	Remote Unit external led status	Severity level	Potential Cause		Possible Solution	Service-affecting fault
					DAS Platform issue	Environment/Installation issue		
Communication	00005E	The master unit supervision module cannot communicate with the remote unit	–	Critical	–	Remote unit switched off	Check the mains power supply	The Remote unit is out of service
					Remote unit switched off		Power cycle (reset) the unit. If the alarm persists replace the unit	
					–	Cabling	Check the optical fiber link	
–	–	The remote unit cannot communicate with the master unit supervision module	RED	Critical	The remote unit might not have been detected by the discovery process		If the remote unit is not displayed in the Optical System Tree View (Components menu), check its connections and start a new discovery	–
					The master unit optical component might be busy		Check MU-OTRX	
Low Temperature	00005E	The remote unit operating temperature is too low	ORANGE	Minor	–	Low environmental temperature	Check the remote unit environmental temperature	Possible malfunction of the remote unit
High Temperature	00005E	The remote unit operating temperature is too high	RED	Critical	–	High environmental temperature	Improve the efficiency of the remote unit cooling system: heat sinks, fans and air flow availability	Out of service of the remote unit
Mains Fault	00005E	Current consumption is out of range	BLINKING RED	Major	The remote unit is faulty	–	Contact technical support	Out of service of remote unit
Clock Distributor Unlock	00005E	The clock distributor is not locked	BLINKING RED	Major	Faulty module	–	Power cycle the remote unit. If the alarm persists, contact technical support	Out of service of the remote unit
Fan Speed	00005E	Fans speed is too low	ORANGE	Minor	–	Dust / dirty environment	Check the remote unit temperature. If the temperature is critical clean the fans to remove dirt	–
					Faulty fan / fans kit	–	Check the remote unit temperature. If the temperature is critical replace the fan kit	
C-BAND M1 DL Power Low C-BAND M2 DL Power Low	00005E	The channel RF output power is below the factory-set minimum threshold	BLINKING RED	Major	–	No input signal	Optimize/fix point of interface connection (POI-base station)	The coverage on the specific band could be not present or weak
						Faulty unit before Remote Unit	Check the input signal on the POI section. If the input signal is present on-field activities are required	
						Bad RF cabling before Remote unit		
C-BAND M1 DL Power High C-BAND M2 DL Power High	00005E	The channel RF output power is over the factory-set maximum threshold	BLINKING RED	Major	–	RF input signal too high	Increase the POI or Remote Unit attenuation	–
						System gain set too high	Check the commissioning	
C-BAND M1 Return Loss Critical C-BAND M2 Return Loss Critical	00005E	Measured return loss below the factory setting	RED	Critical	–	Bad RF connection at antenna port connector	Measure the service antenna return loss	The coverage on the specific RF path could be not present or weak





Alarm Id	Type	Alarm Description	Remote Unit external led status	Severity level	Potential Cause		Possible Solution	Service-affecting fault
					DAS Platform issue	Environment/Installation issue		
C-BAND M1 Return Loss Warning C-BAND M2 Return Loss Warning	00005E	Measured return loss slightly below the factory setting	BLINKING ORANGE	Warning	–	RF connection at antenna port connector not properly matched	Measure the service antenna return loss	–
C-BAND M1 DL Current C-BAND M2 DL Current	00005E	Channel current absorption is out of range (DL path)	BLINKING RED	Major	–	Overdriving the DL path	<ul style="list-style-type: none"><li>▸ Increase the remote unit attenuation on the downlink path</li><li>▸ If the alarm is permanent, enable again the specific frequency band.</li><li>▸ If the alarm persists, contact technical support.</li></ul>	Specific band is out of service
C-BAND M1 PA Low Temperature C-BAND M2 PA Low Temperature	00005E	The Power Amplifier operating temperature is too low	ORANGE	Minor	–	Low environmental temperature	Check the remote unit environmental temperature	Possible malfunction of the remote unit
C-BAND M1 PA High Temperature C-BAND M2 PA High Temperature	00005E	The Power Amplifier operating temperature is too high	ORANGE	Minor	–	High environmental temperature	Improve the efficiency of the remote unit cooling system: heat sinks, fans and air flow availability	Possible malfunction of the remote unit
C-BAND M1 PA Protection C-BAND M2 PA Protection	00005E	RU's Power Amplifier detected power peak is too high	BLINKING RED	Major	–	RF signal too high	Decrease DL RF level to the Remote Unit	The coverage on the specific RF path could be not present or weak
C-BAND M1 UL ALC C-BAND M2 UL ALC	00005E	UpLink Automatic Level Control	BLINKING ORANGE	Warning	–	Level of uncoordinated user in UL too strong	Increase the remote unit UL attenuation	–
C-BAND M1 UL Current C-BAND M2 UL Current	00005E	Channel current absorption is out of range (UL path)	BLINKING RED	Major	–	Level of uncoordinated user in UL too strong	Increase RU attenuation on UL path	Specific RF path is out of service
Loss of Sync	00005E	No sync available on optical link	BLINKING RED	Major	–	Optical connector not properly inserted or dirty	Check the optical fiber connector installation	Out of service for the related Remote Unit
					–	Problem on optical link	Check the optical fiber link	
					Degrading optical receiver	–	Connect the optical fiber to another optical receiver (if available)	
TDD Unlock	00005E	Missing TDD signal	BLINKING RED	Major	–	No TDD reference signal detected by the Remote Unit	Check the TSYNC distributing the BS TDD reference Signals to the connected NG-OTRX	Out of service of the remote unit
External 1 External 2 External 3 External 4	000024 00002A 000036 000038 00003C 000042 000044 000050 000051	Alarms generated by external devices connected to the external alarms input connector (EXT IN)	–	User settable  Factory pre-set level: Warning	–	–	Check external devices status and external inputs polarity	–

Chart 7.3 – RU - One to Three Bands and Low Bands Remote Units with up to 2W Output Power

Types: 00000E<sup>(\*)</sup>, 000011<sup>(\*)</sup>, 000015<sup>(\*)</sup>, 00001E<sup>(\*)</sup>, 00002B<sup>(\*)</sup>, 00002C<sup>(\*)</sup>, 00003F<sup>(\*)</sup>, 000046<sup>(\*)</sup>, 000017, 000045, 000052, 000055, 000058, 00005B

SNMP ID: spvRuLp

Alarm Id	Type	Alarm Description	Remote Unit external led status	Severity level	Potential Cause		Possible Solution	Service-affecting fault
					DAS Platform issue	Environment/Installation issue		
Communication	00000E	The master unit supervision module cannot communicate with the remote unit	–	Critical	–	Remote unit switched off	Troubleshoot the power source	Coverage issue for the remote unit specific operator(s)/band(s)
	000011				–	Problem on optical link	Check the optical fiber link	
	000015				The remote unit is faulty	–	Power cycle (reset) the unit. If the alarm persists replace the unit	
	000017							
	00001E							
	00002B							
	00002C							
	00003F							
	000045							
	000046							
	000052							
	000055							
000058								
00005B								
–	–	The remote unit cannot communicate with the master unit supervision module	RED	Critical	The remote unit might not have been detected by the discovery process.		If the remote unit is not displayed in the Optical System Tree View (Components menu), check its connections and start a new discovery	–
					The master unit optical module (MU-OTRX) might be busy			
					Low Temperature	00000E 000011 000015 000017 00001E 00002B 00002C 00003F 000045 000046 000052 000055 000058 00005B	The remote unit operating temperature is too low	

<sup>(\*)</sup> Types 14 (00000E), 17 (000011), 21 (000015), 30 (00001E), 43 (00002B), 44 (00002C), 63 (00003F), 70 (000046) valid for OMC versions earlier than 1.8.0 and OMT versions earlier than 3.2.2



Alarm Id	Type	Alarm Description	Remote Unit external led status	Severity level	Potential Cause		Possible Solution	Service-affecting fault
					DAS Platform issue	Environment/Installation issue		
High Temperature	00000E 000011 000015 000017 00001E 00002B 00002C 00003F 000045 000046 000052 000055 000058 00005B	The remote unit operating temperature is too high	RED	Critical	–	High environmental temperature	Improve the efficiency of the remote unit heat sinks	<b>The remote unit enters auto power-off:</b> coverage issue for the remote unit specific operator(s)/band(s)
Operator	00000E 000011 000015 000017 00001E 00002B 00002C 00003F 000045 000046 000052 000055 000058 00005B	A <b>factory-authorized</b> operator is testing the unit locally	BLINKING ORANGE	Warning	–	–	Check the operator presence	–
Rx Optical Low	00000E 000011 000015 000017 00001E 00002B 00002C 00003F 000052 000055 000058	Received optical power is below the operating range (+6dBm to -4dBm)	BLINKING RED	Major	–	Problem on optical link	Check the optical fiber link	Coverage issue for the remote unit specific operator(s)/band(s)
					–	Optical connector not properly inserted	Check the optical fiber connector installation	
					If the alarm persists after the previous steps: degrading optical receiver	–	Contact technical support	
					–	Master unit MU-OTRX laser switched off	Check MU-OTRX status	
	000045 000046 00005B	MIMO 1: received optical power is below the operating range (+6dBm to -4dBm)	BLINKING RED	Major	–	Problem on optical link (MIMO 1)	Check the optical fiber link (MIMO 1)	Coverage issue for the remote unit MIMO 1 specific operator(s)/band(s)
					–	Optical connector not properly inserted (MIMO 1)	Check the optical fiber connector installation (MIMO 1)	
					If the alarm persists after the previous steps: degrading optical receiver (MIMO 1)	–	Contact technical support	
					–	Master unit MU-OTRX laser switched off (MIMO 1)	Check MU-OTRX status (MIMO 1)	



Alarm Id	Type	Alarm Description	Remote Unit external led status	Severity level	Potential Cause		Possible Solution	Service-affecting fault
					DAS Platform issue	Environment/Installation issue		
Rx Opt Low M2	000045 000046 00005B	MIMO 2: received optical power is below the operating range (+6dBm to -4dBm)	BLINKING RED	Major	–	Problem on optical link (MIMO 2)	Check the optical fiber link (MIMO 2)	Coverage issue for the remote unit MIMO 2 specific operator(s)/band(s)
					–	Optical connector not properly inserted (MIMO 2)	Check the optical fiber connector installation (MIMO 2)	
					If the alarm persists after the previous steps: degrading optical receiver (MIMO 2)	–	Contact technical support	
					–	Master unit MU-OTRX laser switched off (MIMO 2)	Check MU-OTRX status (MIMO 2)	
Rx Optical Warning	00000E 00001E 00002B 00002C 00003F 000017	Received optical power is slightly below the operating range (+6dBm to -4dBm)	BLINKING ORANGE	Warning	–	Problem on optical link	Check the optical fiber link	–
					–	Dirty optical connector	Clean the optical fiber connector	
					If the alarm persists after the previous steps: degrading optical receiver	–	Contact technical support	
	000045 000046 00005B	MIMO 1: received optical power is slightly below the operating range (+6dBm to -4dBm)	BLINKING ORANGE	Warning	–	Problem on optical link (MIMO 1)	Check the optical fiber link (MIMO 1)	–
					–	Dirty optical connector (MIMO 1)	Clean the optical fiber connector (MIMO 1)	
					If the alarm persists after the previous steps: degrading optical receiver (MIMO 1)	–	Contact technical support	
Rx Opt Warning M2	000045 000046 00005B	MIMO 2: received optical power is slightly below the operating range (+6dBm to -4dBm)	BLINKING ORANGE	Warning	–	Problem on optical link (MIMO 2)	Check the optical fiber link (MIMO 2)	–
					–	Dirty optical connector (MIMO 2)	Clean the optical fiber connector (MIMO 2)	
					If the alarm persists after the previous steps: degrading optical receiver (MIMO 2)	–	Contact technical support	
Rx Optical Warn	000011 000015 000052 000055 000058	Received optical power is slightly below the operating range (+6dBm to -4dBm)	BLINKING ORANGE	Warning	–	Problem on optical link	Check the optical fiber link	–
					–	Dirty optical connector	Clean the optical fiber connector	
					If the alarm persists after the previous steps: degrading optical receiver	–	Contact technical support	



Alarm Id	Type	Alarm Description	Remote Unit external led status	Severity level	Potential Cause		Possible Solution	Service-affecting fault
					DAS Platform issue	Environment/Installation issue		
Rx Optical High	00000E 000011 000015 000017 00001E 00002B 00002C 00003F 000052 000055 000058	Received optical power is higher than the operating range (+6dBm to -4dBm)	RED	Critical	The Remote Unit is faulty	–	Contact technical support	Coverage issue for the remote unit specific operator(s)/band(s)
					Faulty connected MU-OTRX	–	Contact technical support	
	000045 000046 00005B	MIMO 1: received optical power is higher than the operating range (+6dBm to -4dBm)	RED	Critical	Faulty Remote Unit	–	Contact technical support	Coverage issue for the remote unit MIMO 1 specific operator(s)/band(s)
					Faulty connected MU-OTRX (MIMO 1)	–	Contact technical support	
Rx Opt High M2	000045 000046 00005B	MIMO 2: received optical power is higher than the operating range (+6dBm to -4dBm)	RED	Critical	Faulty Remote Unit	–	Contact technical support	Coverage issue for the remote unit MIMO 2 specific operator(s)/band(s)
					Faulty connected MU-OTRX	–	Contact technical support	
Laser Fault	00000E 000011 000015 000017 00001E 00002B 00002C 00003F 000052 000055 000058	Laser current consumption out of range	RED	Critical	Remote Unit is faulty	–	Contact technical support	<b>The remote unit enters auto power-off:</b> coverage issue for the remote unit specific operator(s)/band(s)
	000045 000046 00005B	MIMO 1: laser current consumption out of range	RED	Critical	Remote Unit is faulty	–	Contact technical support	<b>The remote unit enters auto power-off:</b> coverage issue for the remote unit MIMO 1 specific operator(s)/band(s)
Laser Fault M2	000045 000046 00005B	MIMO 2: laser current consumption out of range	RED	Critical	Remote Unit is faulty	–	Contact technical support	<b>The remote unit enters auto power-off:</b> coverage issue for the remote unit MIMO 2 specific operator(s)/band(s)
Laser Warning	000017 00000E 00001E 00002B 00002C 00003F 00005B	Laser current consumption slightly out of range	ORANGE	Minor	Degrading laser performance	–	Contact technical support	–
Laser Warning M2	000045 000046 00005B	MIMO 2: laser current consumption slightly out of range	BLINKING RED	Major	Degrading laser performance	–	Contact technical support	–



Alarm Id	Type	Alarm Description	Remote Unit external led status	Severity level	Potential Cause		Possible Solution	Service-affecting fault
					DAS Platform issue	Environment/Installation issue		
Laser Warn	000011 000015	Laser current consumption slightly out of range	ORANGE	Minor	Degrading laser performance	–	Contact technical support	–
CW Fault	000045 000046 000052 000055 000058 00005B	CW tone activation is not available	ORANGE	Minor	Remote Unit is faulty	–	Contact technical support	–
Mains Fault	00000E 000011 000015 000017 00001E 00002B 00002C 00003F 000045 000046 000052 000055 000058 00005B	Remote unit current consumption is out of range	BLINKING RED	Major	Remote Unit is faulty	–	Contact technical support	<b>The remote unit enters auto power-off:</b> coverage issue for the remote unit specific operator(s)/band(s)
<Band name> Current	00000E 000011 000015 000017 00001E 00002B 00002C 00003F 000045 000046 000052 000055 000058 00005B	<Band name> current absorption is out of range (DL/UL path)	BLINKING RED	Major	–	<ul style="list-style-type: none"><li>▸ Level of uncoordinated user in uplink too strong</li><li>▸ Overdriving the downlink path</li></ul>	<ul style="list-style-type: none"><li>▸ Increase the remote unit attenuation on uplink and downlink path</li><li>▸ If the alarm is permanent → enable again the specific frequency band</li><li>▸ If the alarm persists → contact technical support</li></ul>	<b>The remote unit enters auto power-off:</b> the coverage for the specific band is not available



Alarm Id	Type	Alarm Description	Remote Unit external led status	Severity level	Potential Cause		Possible Solution	Service-affecting fault	
					DAS Platform issue	Environment/Installation issue			
<Band name> UL Power High	00000E	Automatic Level Control	ORANGE	Minor	–	Level of uncoordinated user in uplink too strong	Increase the remote unit uplink attenuation	–	
	000011								
	000015								
	000017								
	00001E								
	00002B								
	00002C								
	00003F								
	000045								
	000046								
	000052								
	000055								
	000058								
	00005B								
<Band name> DL Power High	00000E	Automatic Level Control	BLINKING RED	Major	–	System gain set too high	Increase the donor front end / point of interface or remote unit downlink attenuation	–	
	000011						Check the commissioning	–	
	000015								
	000017								
	00001E								
	00002B								
	00002C								
	00003F								
	000045								
	000046								
	000052								
	000055								
	000058								
	00005B								
<Band name> DL Power Low	00000E	<Band name> RF output power is below the factory settings	BLINKING RED	Major	–	No input signal	Optimize/fix point of interface connection (donor front end to donor antenna or point of interface to base station)	The coverage on the specific band could be not present or weak	
	000011				Due to the<Band name> Current alarm	–	Please refer to the<Band name> Current alarm troubleshooting		
	000015					Faulty unit before remote unit	Check the donor front end / point of interface input signal: if it is present, on-field activities are required		
	000017								
	00001E								
	00002B				Bad RF cabling before remote unit				
	00002C								
	00003F								
	000045								
	000046								
	000052								
	000055								
000058									
00005B									



Alarm Id	Type	Alarm Description	Remote Unit external led status	Severity level	Potential Cause		Possible Solution	Service-affecting fault
					DAS Platform issue	Environment/Installation issue		
PSU Warning	00000E 000011 000015 000017 00001E 00002B 00002C 00003F 000045 000046 000052 000055 000058 00005B	Power Supply output voltage slightly out of range	BLINKING ORANGE	Warning	The power supply module is not operating correctly	–	Contact technical support	–
PSU Critical	00000E 000011 000015 000017 00001E 00002B 00002C 00003F 000045 000046 000052 000055 000058 00005B	Power Supply output voltage out of range	RED	Critical	The power supply module is faulty	–	Contact technical support	–
External 1 External 2 External 3 External 4	00000E 000011 000015 000017 00001E 00002B 00002C 00003F 000045 000046 000052 000055 000058 00005B	Alarms generated by external devices connected to external alarm inputs (EXT IN connector)	–	User settable  Factory pre-set level: Warning	–	–	Check external devices status and external inputs polarity	–





Alarm Id	Type	Alarm Description	Remote Unit external led status	Severity level	Potential Cause		Possible Solution	Service-affecting fault
					DAS Platform issue	Environment/Installation issue		
PLL Unlock	000011 00002C 00003F 000046 00005B	PLL is unlocked	BLINKING RED	Major	No TDD reference signal	–	Check that cables 3 and 4 shown in the following figure are connected properly	Remote unit: the coverage for the TDD band is not available
					The remote unit is faulty	–	Contact technical support	
TDD Unlock	000011 00002C 00003F 000046 00005B	Missing TDD signal	BLINKING RED	Major	–	No TDD reference signal due to the <i>TDD Unlock</i> alarm active for the TSYNC module distributing the TDD reference signal to the remote unit	Check the TSYNC module, distributing the TDD reference signals to the remote unit. Please refer to the TSYNC module troubleshooting ( <a href="#">Chart 1.6</a> )	Remote unit: the coverage for the TDD band is not available

Chart 7.4 – RU - Four to Seven Bands Remote Units with up to 2W Output Power

Types: 00001B<sup>(\*)</sup>, 000027<sup>(\*)</sup>, 000028<sup>(\*)</sup>, 00003B<sup>(\*)</sup>, 000048, 000049, 000053, 000054, 000059

SNMP ID: spvRuLp5b

Alarm Id	Type	Alarm Description	Remote Unit external led status	Severity level	Potential Cause		Possible Solution	Service-affecting fault
					DAS Platform issue	Environment/Installation issue		
Communication	00001B 000027 000028 00003B 000048 000049 000053 000054 000059	The master unit supervision module cannot communicate with the remote unit	–	Critical	–	Remote unit switched off	Troubleshoot the power source	Coverage issue for the remote unit specific operator(s)/band(s)
					–	Problem on optical link	Check the optical fiber link	
					The remote unit is faulty	–	Power cycle (reset) the unit. If the alarm persists replace the unit	
–	–	The remote unit cannot communicate with the master unit supervision module	RED	Critical	The remote unit might not have been detected by the discovery process.		If the remote unit is not displayed in the DAS Tree View (Components menu), check its connections and start a new discovery	–
					The master unit optical module (MU-OTRX) might be busy		Check MU-OTRX	
Low Temperature	00001B	The remote unit operating temperature is too low	BLINKING RED	Major	–	Low environmental temperature	Check the remote unit environmental temperature	<b>The remote unit enters auto power-off:</b> coverage issue for the remote unit specific operator(s)/band(s)
High Temperature	00001B	The remote unit operating temperature is too high	RED	Critical	–	High environmental temperature	Improve the efficiency of the remote unit heat sinks	<b>The remote unit enters auto power-off:</b> coverage issue for the remote unit specific operator(s)/band(s)
Temperature	000027 000028 00003B 000048 000049 000053 000054 000059	The remote unit operating temperature is out of range	BLINKING RED	Major	–	Low or high environmental temperature	Check the remote unit environmental temperature. If the remote unit operating temperature is too high improve the efficiency of the remote unit heat sinks	<b>The remote unit enters auto power-off:</b> coverage issue for the remote unit specific operator(s)/band(s)
Operator	00001B	A <b>factory-authorized</b> operator is testing the Unit locally	BLINKING ORANGE	Warning	–	–	Check the operator presence	–
Rx Optical Low	00001B 000027 000028 00003B 000048 000049 000053 000054 000059	Received optical power is below the operating range (+6dBm to -4dBm)	BLINKING RED	Major	–	Problem on optical link	Check the optical fiber link	Coverage issue for the remote unit specific operator(s)/band(s)
					–	Optical connector not properly inserted	Check the optical fiber connector installation	
					If the alarm persists after the previous steps: degrading optical receiver		Contact technical support	
					–	MU-OTRX laser switched off	Check MU-OTRX status	

<sup>(\*)</sup> Types 27 (00001B), 39 (000027), 40 (000028), 59 (00003B) valid for OMC versions earlier than 1.8.0 and OMT versions earlier than 3.2.2



Alarm Id	Type	Alarm Description	Remote Unit external led status	Severity level	Potential Cause		Possible Solution	Service-affecting fault
					DAS Platform issue	Environment/Installation issue		
Rx Optical Warning	00001B	Received Optical Power slightly below the operating range (+6dBm to -4dBm)	BLINKING ORANGE	Warning	–	Problem on optical link	Check the optical fiber link	–
					–	Dirty optical connector	Clean the optical fiber connector	
					If the alarm persists after the previous steps: degrading optical receiver	–	Contact technical support	
Rx Optical Warn	000027 000028 00003B 000048 000049 000053 000054 000059	Received Optical Power slightly below the operating range (+6dBm to -4dBm)	BLINKING ORANGE	Warning	–	Problem on optical link	Check the optical fiber link	–
					–	Dirty optical connector	Clean the optical fiber connector	
					If the alarm persists after the previous steps: degrading optical receiver	–	Contact technical support	
Rx Optical High	00001B 000027 000028 00003B 000048 000049 000053 000054 000059	Received optical power is higher than the operating range (+6dBm to -4dBm)	RED	Critical	The Remote Unit is faulty	–	Contact technical support	Coverage issue for the remote unit specific operator(s)/band(s)
					Faulty connected MU-OTRX	–	Contact technical support	
Laser Fault	00001B 000027 000028 00003B 000048 000049 000053 000054 000059	Laser current consumption out of range	RED	Critical	The Remote Unit is faulty	–	Contact technical support	<b>The remote unit enters auto power-off:</b> coverage issue for the remote unit specific operator(s)/band(s)
Laser Warning	00001B 000027	Laser current consumption slightly out of range	ORANGE	Minor	Degrading laser performance	–	Contact technical support	–
Laser Warn	000028 00003B	Laser current consumption slightly out of range	ORANGE	Minor	Degrading laser performance	–	Contact technical support	–
CW Fault	000048 000049 000053 000054 000059	CW tone activation is not available	ORANGE	Minor	The Remote Unit is faulty	–	Contact technical support	–



Alarm Id	Type	Alarm Description	Remote Unit external led status	Severity level	Potential Cause		Possible Solution	Service-affecting fault
					DAS Platform issue	Environment/Installation issue		
Mains Fault	00001B 000027 000028 00003B 000048 000049 000053 000054 000059	Current consumption is out of range	BLINKING RED	Major	The Remote Unit is faulty	–	Contact technical support	<b>The remote unit enters auto power-off:</b> coverage issue for the remote unit specific operator(s)/band(s)
<Band name> Current	00001B 000027 000028 00003B 000048 000049 000053 000054 000059	<Band name> current absorption is out of range (DL/UL path)	BLINKING RED	Major	–	<ul style="list-style-type: none"><li>▸ Level of uncoordinated user in uplink too strong</li><li>▸ Overdriving the downlink path</li></ul>	<ul style="list-style-type: none"><li>▸ Increase the remote unit attenuation on uplink and downlink path</li><li>▸ If the alarm is permanent → enable the specific frequency band again</li><li>▸ If the alarm persists → contact technical support</li></ul>	<b>The remote unit enters auto power-off:</b> the coverage for the specific band is not available
<Band name> UL Pwr High	00001B 000027 000028 00003B 000048 000049 000053 000054 000059	Automatic Level Control	ORANGE	Minor	–	Level of uncoordinated users in uplink too strong	Increase the remote unit uplink attenuation	–
<Band name> DL Pwr High	000027 000028 00003B 000048 000049 000053 000054 000059	Automatic Level Control	BLINKING RED	Major	–	System gain set too high	Increase donor front end / point of interface or remote unit downlink attenuation	–
							Check the commissioning	
<Band name> DL Pwr Low	000027 000028 00003B 000048 000049 000053 000054 000059	<Band name> RF output power is below the factory settings	BLINKING RED	Major	–	No input signal	Optimize/fix point of interface connection (donor front end to donor antenna or point of interface to base station)	The coverage on the specific band could be not present or weak
					Due to the <Band name> Current alarm	–	Please refer to the <Band name> Current alarm troubleshooting	
					–	Faulty unit before Remote Unit	Check the donor front end / point of interface input signal: if it is present, on-field activities are required	
					–	Bad RF cabling before Remote Unit		

Alarm Id	Type	Alarm Description	Remote Unit external led status	Severity level	Potential Cause		Possible Solution	Service-affecting fault
					DAS Platform issue	Environment/Installation issue		
<Band name> DL Pwr L/H	00001B	<Band name> RF output power is below the factory settings	BLINKING RED	Major	–	No input signal	Optimize/fix the point of interface connection (donor front end to donor antenna or point of interface to base station)	The coverage on the specific band could be not present or weak
					Due to <Band name> Current alarm	–	Please refer to the <Band name> Current alarm	
					–	Faulty unit before Remote Unit	Check the donor front end / point of interface input signal: if it is present, on-field activities are required	
					–	Bad RF cabling before Remote Unit	Check the donor front end / point of interface input signal: if it is present, on-field activities are required	
	Automatic Level Control	Automatic Level Control	BLINKING RED	Major	–	System Gain set too high	Increase the donor front end / point of interface or remote unit downlink attenuation	–
							Check the commissioning	
Vout	00001B	Power Supply output voltage out of range	RED	Critical	Power supply module is faulty	–	Contact technical support	–
External 1 External 2 External 3 External 4	00001B 000027 000028 00003B 000048 000049 000053 000054 000059	Alarms generated by external devices connected to external alarm inputs (EXT IN connector)	–	User settable  Factory pre-set level: Warning	–	–	Check external devices status and external inputs polarity	–
PLL Unlock	00003B 000054 000059	PLL is unlocked	BLINKING RED	Major	No TDD reference signal	–	Check that cables 3 and 4 shown in the following figure are connected properly	Remote unit: the coverage for the TDD band is not available
					The Remote Unit is faulty	–	Contact technical support	
TDD Unlock	00003B 000054 000059	Missing TDD signal	BLINKING RED	Major	–	No TDD reference signal due to the TDD Unlock alarm active for the TSYNC module, distributing the TDD reference signal to the remote unit	Check the TSYNC module, distributing the Base Station TDD reference signals to the remote unit. Please refer to the TSYNC module troubleshooting ( <a href="#">Chart 1.6</a> )	Remote unit: the coverage for the TDD band is not available

## Chart 7.5 – RU - Boxed Remote Units

Types: 000005, 00000B, 00000C, 00000D, 00000F, 000010, 000012, 000013, 000014 <sup>(\*)</sup>

SNMP ID: spvRu

Alarm Id	Type	Alarm Description	Remote Unit external led status	Severity level	Potential Cause		Possible Solution	Service-affecting fault
					DAS Platform issue	Environment/Installation issue		
Communication	000005 00000B 00000C 00000D 00000F 000010 000012 000013 000014	The master unit supervision module cannot communicate with the remote unit	–	Critical	–	Remote unit switched off	Troubleshoot the power source	Coverage issue for the remote unit specific operator(s)/ band(s)
					–	Problem on optical link	Check the optical fiber link	
					The remote unit is faulty	–	Power cycle (reset) the unit. If the alarm persists replace the unit	
–	–	The remote unit cannot communicate with the master unit supervision module	RED	Critical	The remote unit might not have been detected by the discovery process		If the remote unit is not displayed in the Optical System Tree View (Components menu), check its connections and start a new discovery	–
					The master unit optical module (MU-OTRX) might be busy		Check MU-OTRX	
Open Door	000005 00000B 00000C 00000D 00000F 000010 000012 000013 000014	Remote unit front door is open	BLINKING ORANGE	Warning	An authorized operator is working on the unit	–	Check the operator presence	–
Operator	000005 00000B 00000C 00000D 00000F 000010 000012 000013 000014	A <b>factory-authorized</b> operator is testing the remote unit locally	BLINKING ORANGE	Warning	–	–	Check the operator presence	–

<sup>(\*)</sup> Types 5 (000005), 11 (00000B), 12 (00000C), 13 (00000D), 15 (00000F), 16 (000010), 18 (000012), 19 (000013), 20 (000014) valid for OMC versions earlier than 1.8.0 and OMT versions earlier than 3.2.2



Alarm Id	Type	Alarm Description	Remote Unit external led status	Severity level	Potential Cause		Possible Solution	Service-affecting fault
					DAS Platform issue	Environment/Installation issue		
Low Temperature	000005 00000B 00000C 00000D 00000F 000010 000012 000013 000014	The remote unit operating temperature is too low	BLINKING RED	Major	–	Low environmental temperature	Check the remote unit environmental temperature	–
High Temperature	000005 00000B 00000C 00000D 00000F 000010 000012 000013 000014	The remote unit operating temperature is too high	BLINKING RED	Major	–	High environmental temperature	Improve the efficiency of the remote unit cooling system: heat sinks and fans	Coverage issue for the remote unit specific operator(s)/ band(s)
PSU Current	00000B 00000C 00000D 00000F 000010 000012 000013 000014	The power supply module absorbed current is out of the factory-set range	BLINKING RED	Major	The power supply module is not operating correctly	–	Contact technical support	–
PSU DC Out Cur	000005	The power supply absorbed current is out of the factory-set range	BLINKING RED	Major	The power supply module is not operating correctly	–	Contact technical support	–
PSU Warning	000005 00000B 00000C 00000D 00000F 000010 000012 000013 000014	The power supply output voltage is slightly out of the factory-set range	BLINKING RED	Major	The power supply module is not operating correctly	–	Contact technical support	–



Alarm Id	Type	Alarm Description	Remote Unit external led status	Severity level	Potential Cause		Possible Solution	Service-affecting fault
					DAS Platform issue	Environment/Installation issue		
PSU Critical	000005 00000B 00000C 00000D 00000F 000010 000012 000013 000014	The power supply output voltage is out of the factory-set range	RED	Critical	Power Supply is faulty	–	Contact technical support	–
Fan Speed	00000B 00000F 000012	Fan speed is too low	ORANGE (VHP models)	Minor (VHP models)	–	Dust / dirty environment	Improve the cooling/cleaning of the remote unit: clean the fans and the heat sinks to remove dirt	–
					Faulty fan / fans kit	–	Check the remote unit temperature: if the temperature is over 65°C (149°F) replace the fan kit	
	000005 00000C 00000D 000010 000013 000014	Fan speed is too low	BLINKING ORANGE (HP models)	Warning (HP models)	–	Dust / dirty environment	Improve the cooling/cleaning of the remote unit: clean the fans and the heat sinks to remove dirt	–
					Faulty fan / fans kit	–	Check the remote unit temperature: if the temperature is over 65°C (149°F) replace the fan kit	
PSU Temperature	000005 00000B 00000C 00000D 00000F 000010 000012 000013 000014	The Power Supply module temperature is too high	BLINKING RED	Major	–	High environmental temperature	Improve the efficiency of the remote unit cooling system (heat sinks and fans)	–
External 1 External 2 External 3 External 4	000005 00000B 00000C 00000D 00000F 000010 000012 000013 000014	Alarms generated by external devices connected to external alarm inputs (ALARM connector)	–	User settable  Factory pre-set level: Warning	–	–	Check external devices status and external inputs polarity	–



Chart 7.6 – RU - Pole-mount Remote Units

Types: 000024<sup>(\*)</sup>, 00002A<sup>(\*)</sup>, 000036<sup>(\*)</sup>, 000038<sup>(\*)</sup>, 00003C<sup>(\*)</sup>, 000042<sup>(\*)</sup>, 000044<sup>(\*)</sup>, 000050, 000051

SNMP ID: spvRu

Alarm Id	Type	Alarm Description	Remote Unit external led status	Severity level	Potential Cause		Possible Solution	Service-affecting fault
					DAS Platform issue	Environment/Installation issue		
Communication	000024 00002A 000036 000038 00003C 000042 000044 000050 000051	The master unit supervision module cannot communicate with the remote unit	–	Critical	–	Remote unit switched off	Troubleshoot the power source	Coverage issue for the remote unit specific operator(s)/ band(s)
					–	Problem on optical link	Check the optical fiber link	
					The remote unit is faulty	–	Power cycle (reset) the unit. If the alarm persists replace the unit	
–	–	The remote unit cannot communicate with the master unit supervision module	RED	Critical	The remote unit might not have been detected by the discovery process		If the remote unit is not displayed in the Optical System Tree View (Components menu), check its connections and start a new discovery	–
					The master unit optical module (MU-OTRX) might be busy		Check MU-OTRX	
Operator	000024 00002A 000036 000038 00003C 000042 000044 000050 000051	A <b>factory-authorized</b> operator is testing the Unit locally	BLINKING ORANGE	Warning	–	–	Check the operator presence	–
Low Temperature	000024 00002A 000036 000038 00003C 000042 000044 000050 000051	The remote unit operating temperature is too low	BLINKING RED	Major	–	Low environmental temperature	Check the remote unit environmental temperature	Coverage issue for the remote unit specific operator(s)/ band(s)
High Temperature	000024 00002A 000036 000038 00003C 000042 000044 000050 000051	The remote unit operating temperature is too high	BLINKING RED	Major	–	High environmental temperature	Improve the efficiency of the remote unit cooling system: fans and air flow availability	Remote Unit: Specific operator(s) / band out of service(s)

<sup>(\*)</sup> Types 36 (000024), 42 (00002A), 54 (000036), 56 (000038), 60 (00003C), 66 (000042), 68 (000044<sup>1</sup>) valid for OMC versions earlier than 1.8.0 and OMT versions earlier than 3.2.2



Alarm Id	Type	Alarm Description	Remote Unit external led status	Severity level	Potential Cause		Possible Solution	Service-affecting fault
					DAS Platform issue	Environment/Installation issue		
PSU DC Out Cur	000024 00002A 000036 000038 00003C 000042 000044 000050 000051	The power supply module absorbed current is out of the factory-set range	BLINKING RED	Major	The power supply module is not operating correctly	–	Contact technical support	–
PSU Warning	000024 00002A 000036 000038 00003C 000042 000044 000050 000051	The power supply output voltage is slightly out of the factory-set range	BLINKING RED	Major	The power supply module is not operating correctly	–	Contact technical support	–
PSU Critical	000024 00002A 000036 000038 00003C 000042 000044 000050 000051	The power supply output voltage is out of the factory-set range	RED	Critical	The power supply module is faulty	–	Contact technical support	–
Fan Speed	000024 00002A 000036 000038 00003C 000042 000044 000050 000051	Fan speed is too low	ORANGE	Minor	–	Dust / dirty environment	Improve the cooling/cleaning of the remote unit: clean the fans and the heat sinks to remove dirt	–
					Faulty fan / fan-kit	–	Check the remote unit temperature: if the temperature is over 65°C (149°F) replace the fan kit	
PSU Temperature	000024 00002A 000036 000038 00003C 000042 000044 000050 000051	The power supply module temperature is too high	BLINKING RED	Major	–	High environmental temperature	Improve the efficiency of the remote unit cooling system (heat sinks and fans)	–



Alarm Id	Type	Alarm Description	Remote Unit external led status	Severity level	Potential Cause		Possible Solution	Service-affecting fault
					DAS Platform issue	Environment/Installation issue		
External 1 External 2 External 3 External 4	000024 00002A 000036 000038 00003C 000042 000044 000050 000051	Alarms generated by external devices connected to external alarm inputs (ALARM connector)	–	User settable  Factory pre-set level: Warning	–	–	Check external devices status and external inputs polarity	–



Chart 7.7 – HPA, MPA, VHPA, WHPA - Power Amplifier Equipped Inside Service Front End, Pole-mount and Boxed Remote Units

Types: 000007<sup>(\*)</sup>, 000008<sup>(\*)</sup>, 000016<sup>(\*)</sup>, 000035<sup>(\*)</sup>, 00004B, 00004C, 00004D, 00004E, 00004F, 000056, 000057

SNMP ID: spvHpa, spvMpa

Alarm Id	Type	Alarm Description	Remote unit/TSFE external led status	Severity level	Potential Cause		Possible Solution	Service-affecting fault
					DAS Platform issue	Environment/Installation issue		
Communication	000007 000008 000016 000035 00004B 00004C 00004D 00004E 00004F 000056 000057	The remote unit supervision cannot communicate with the module	RED	Critical	The module is faulty	–	Contact technical support	The coverage on the specific band could be not present
Low Temperature	000007 000008 000016 000035 00004B 00004C 00004D 00004E 00004F 000056 000057	The module operating temperature is too low	BLINKING RED	Major	–	Low environmental temperature	Check the remote unit environmental temperature	<b>The module enters auto power-off:</b> the coverage on the specific band is not available
High Temperature	000007 000016 000035 00004B 00004C 00004D 00004E 00004F 000056 000057	The module operating temperature is too high	RED	Critical	–	High environmental temperature	Improve the efficiency of the remote unit cooling system: heat sinks, fans and air flow availability	<b>The module enters auto power-off:</b> the coverage on the specific band is not available
	000008		BLINKING RED	Major				

<sup>(\*)</sup> Types 7 (000007), 8 (000008), 22 (000016), 53 (000035) valid for OMC versions earlier than 1.8.0 and OMT versions earlier than 3.2.2



Alarm Id	Type	Alarm Description	Remote unit/TSFE external led status	Severity level	Potential Cause		Possible Solution	Service-affecting fault
					DAS Platform issue	Environment/Installation issue		
DL Power Low	000007 000008 000016 000035 00004B 00004C 00004D 00004E 00004F 000056 000057	RF output power is below the factory settings	BLINKING RED	Major	–	No input signal	<div>▸ Service front end: optimize donor antenna direction</div> <div>▸ Remote unit: optimize/fix point of interface connection (donor front end to donor antenna or point of interface to base station)</div>	The coverage on the specific band could be not present or weak
					Due to Mains Fault / Loop control alarms	–	Refer to the Mains Fault / Loop Control alarms	
					–	Faulty unit before remote unit	Check the donor front end / point of interface input signal: if it is present, on-field activities are required	
					–	Bad RF cabling before service front end/remote unit		
DL Power High	000007 000008 000016 000035 00004B 00004C 00004D 00004E 00004F 000056 000057	Automatic Level Control	BLINKING RED	Major	–	System gain set too high	<div>▸ Service front end: increase donor front end or service front end downlink attenuation</div> <div>▸ Remote unit: increase the donor front end / point of interface or remote unit downlink attenuation</div>	–
							Check the commissioning	
Return Loss Warning	000007 000008 000016 000035 00004B 00004C 00004D 00004E 00004F 000056 000057	Measured return loss slightly below the factory setting	ORANGE	Minor	–	RF connection at antenna port connector not properly matched	Measure the service antenna return loss or connect a 50Ω load in place of the antenna and check if the alarm persists	The coverage on the specific band could be not present or weak
Return Loss Critical	000007 000008 000016 000035 00004B 00004C 00004D 00004E 00004F 000056 000057	Measured return loss below the factory setting	RED	Critical	–	Bad RF connection at antenna port connector	Measure the service antenna return loss or connect a 50Ω load in place of the antenna and check if the alarm persists	The coverage on the specific band could be not present or weak



## HPA, MPA, VHPA, WHPA - Power Amplifier Equipped Inside Service Front End, Pole-mount and Boxed Remote Units

Alarm Id	Type	Alarm Description	Remote unit/TSFE external led status	Severity level	Potential Cause		Possible Solution	Service-affecting fault
					DAS Platform issue	Environment/Installation issue		
Mains Fault	000007 000016	Power amplifier inside service front end (TSFE): module current consumption out of range (downlink path)	BLINKING RED	Major	–	Antenna loop or system gain too high	<ul style="list-style-type: none"> <li>▸ Increase service front end and if necessary the donor front end attenuation on the downlink path</li> <li>▸ If the alarm is permanent → enable the power amplifier again</li> <li>▸ If the alarm persists → contact technical support</li> </ul>	<b>The module enters auto power-off:</b> the specific band on the downlink path is out of service
					Faulty power amplifier	–	Contact technical support	
	000007 000008 000016 000035 00004B 00004C 00004D 00004E 00004F 000056 000057	Power amplifier inside remote unit: module current consumption out of range (downlink path)	BLINKING RED	Major	–	Overdrive	<ul style="list-style-type: none"> <li>▸ Increase the remote unit and, if necessary, the donor front end / point of interface attenuation on the downlink path</li> <li>▸ If the alarm is permanent → enable the power amplifier again</li> <li>▸ If the alarm persists → contact technical support</li> </ul>	<b>The module enters auto power-off:</b> the specific band on the downlink path is out of service
					Faulty power amplifier	–	Contact technical support	
Loop Control	000007 000016	Power amplifier inside service front end (TSFE): module current consumption out of range (downlink path)	BLINKING RED	Major	–	Antenna loop or system gain too high	<ul style="list-style-type: none"> <li>▸ Increase the service front end and, if necessary, the donor front end attenuation on the downlink path</li> <li>▸ If the alarm is permanent → enable the power amplifier again</li> <li>▸ If the alarm persists → contact technical support</li> </ul>	<b>The module enters auto power-off:</b> the specific band on the downlink path is out of service
	000007 000016 000035 00004B 00004C 00004D 00004E 00004F 000056 000057	Power amplifier inside remote unit: module current consumption out of range (downlink path)	BLINKING RED	Major	–	Overdrive	<ul style="list-style-type: none"> <li>▸ Increase the remote unit and, if necessary, the donor front end / point of interface attenuation on the downlink path</li> <li>▸ If the alarm is permanent → enable the power amplifier again</li> <li>▸ If the alarm persists → contact technical support</li> </ul>	<b>The module enters auto power-off:</b> the specific band on the downlink path is out of service
Warm-up	000007 000016 000035 00004B 00004C 00004D 00004E 00004F 000056 000057	The power amplifier is warming up	BLINKING ORANGE	Warning	–	Low environmental temperature	Wait for the amplifier to warm up	–

Chart 7.8 – RU-OTRX - Optical Tx/Rx Equipped Inside Pole-mount and Boxed Remote Units

Types: 000009, 00000A, 000023, 00003D, 000041, 000047 (\*)

SNMP ID: spvRotrx

Alarm Id	Type	Alarm Description	Remote unit external led status	Severity level	Potential Cause		Possible Solution	Service-affecting fault
					DAS Platform issue	Environment/Installation issue		
Communication	000009 00000A 000023 00003D 000041 000047	The remote unit supervision cannot communicate with the module	RED	Critical	The module is faulty	–	Contact technical support	Coverage issue for the remote unit specific operator(s)/band(s) might be present
Low temperature	000009 00000A 000023 00003D 000041 000047	The module operating temperature is too low	BLINKING RED	Major	–	Low environmental temperature	Check the remote unit environmental temperature	<b>The module enters auto power-off:</b> coverage issue for the remote unit specific operator(s)/band(s)
High temperature	000009 00000A 000023 00003D 000041 000047	The module operating temperature is too high	RED	Critical	–	High environmental temperature	Improve the efficiency of the remote unit cooling system: heat sinks, fans and air flow availability	<b>The module enters auto power-off:</b> coverage issue for the remote unit specific operator(s)/band(s)
Rx Optical Low	000009 00000A 000023 00003D	Received optical power is below the operating range (+6dBm to -4dBm)	BLINKING RED	Major	–	Problem on optical link	Check the optical fiber link	Coverage issue for the remote unit specific operator(s)/band(s)
					–	Optical connector not properly inserted	Check the optical fiber connector installation	
					If the alarm persists after the previous steps: degrading optical receiver	–	Contact technical support	
					–	Master unit MU-OTRX laser switched off	Check the MU-OTRX status	
Rx Opt Low	000041 000047	MIMO 1: received optical power is below the operating range (+6dBm to -4dBm)	BLINKING RED	Major	–	Problem on optical link (MIMO 1)	Check the optical fiber link (MIMO 1)	Coverage issue for the remote unit MIMO 1 specific operator(s)/band(s)
					–	Optical connector not properly inserted (MIMO 1)	Check the optical fiber connector installation (MIMO 1)	
					If the alarm persists after the previous steps: degrading optical receiver (MIMO 1)	–	Contact technical support	
					–	MU-OTRX laser switched off (MIMO 1)	Check MU-OTRX status (MIMO 1)	

(\*) Types 9 (000009), 10 (00000A), 35 (000023), 61 (00003D), 65 (000041), 71 (000047) valid for OMC versions earlier than 1.8.0 and OMT versions earlier than 3.2.2



Alarm Id	Type	Alarm Description	Remote unit external led status	Severity level	Potential Cause		Possible Solution	Service-affecting fault
					DAS Platform issue	Environment/Installation issue		
Rx Opt Low M2	000041 000047	MIMO 2: received optical power below the operating range (+6dBm to -4dBm)	BLINKING RED	Major	–	Problem on optical link (MIMO 2)	Check the optical fiber link (MIMO 2)	Coverage issue for the remote unit MIMO 2 specific operator(s)/band(s)
					–	Optical connector not properly inserted (MIMO 2)	Check the optical fiber connector installation (MIMO 2)	
					If the alarm persists after the previous steps: degrading optical receiver (MIMO 2)	–	Contact technical support	
					–	MU-OTRX laser switched off (MIMO 2)	Check MU-OTRX status (MIMO 2)	–
Rx Optical Warning	000009 00000A 000023 00003D	Received optical power slightly below the operating range (+6dBm to -4dBm)	BLINKING ORANGE	Warning	–	Problem on optical link	Check the optical fiber link	–
					–	Dirty optical connector	Clean the optical fiber connector	
					If the alarm persists after the previous steps: degrading optical receiver	–	Contact technical support	
Rx Opt Warning	000041 000047	MIMO 1: received optical power slightly below the operating range (+6dBm to -4dBm)	BLINKING ORANGE	Warning	–	Problem on optical link (MIMO 1)	Check the optical fiber link (MIMO 1)	–
					–	Dirty optical connector (MIMO 1)	Clean the optical fiber connector (MIMO 1)	
					If the alarm persists after the previous steps: degrading optical receiver (MIMO 1)	–	Contact technical support	
Rx Opt Warning M2	000041 000047	MIMO 2: received optical power slightly below the operating range (+6dBm to -4dBm)	BLINKING ORANGE	Warning	–	Problem on optical link (MIMO 2)	Check the optical fiber link (MIMO 2)	–
					–	Dirty optical connector (MIMO 2)	Clean the optical fiber connector (MIMO 2)	
					If the alarm persists after the previous steps: degrading optical receiver (MIMO 2)	–	Contact technical support	
Rx Optical High	000009 00000A 000023 00003D	Received optical power is higher than the operating range (+6dBm to -4dBm)	RED	Critical	Faulty module	–	Contact technical support	Coverage issue for the remote unit specific operator(s)/band(s)
					Faulty connected MU-OTRX	–	Contact technical support	
Rx Opt High	000041 000047	MIMO 1: received optical power is higher than the operating range (+6dBm to -4dBm)	RED	Critical	Faulty module (MIMO 1)	–	Contact technical support	Coverage issue for the remote unit MIMO 1 specific operator(s)/band(s)
					Faulty connected MU-OTRX (MIMO 1)	–	Contact technical support	
Rx Opt High M2	000041 000047	MIMO 2: received optical power is higher than the operating range (+6dBm to -4dBm)	RED	Critical	Faulty module (MIMO 2)	–	Contact technical support	Coverage issue for the remote unit MIMO 2 specific operator(s)/band(s)
					Faulty connected MU-OTRX (MIMO 2)	–	Contact technical support	





Alarm Id	Type	Alarm Description	Remote unit external led status	Severity level	Potential Cause		Possible Solution	Service-affecting fault
					DAS Platform issue	Environment/Installation issue		
Laser Fault	000009 00000A 000023 00003D	Laser current consumption out of range	RED	Critical	The laser is warming up	–	Wait for the laser to warm up	–
					If the alarm persists the module is faulty	–	Contact technical support	<b>The module enters auto power-off:</b> coverage issue for the remote unit specific operator(s)/band(s)
	000041 000047	MIMO 1: laser current consumption out of range	RED	Critical	The laser is warming up	–	Wait for the laser to warm up	–
					If the alarm persists the MIMO 1 module is faulty	–	Contact technical support	<b>The module enters auto power-off:</b> coverage issue for the remote unit MIMO 1 specific operator(s)/band(s)
Laser Fault M2	000041 000047	MIMO 2: laser current consumption out of range	RED	Critical	The laser is warming up	–	Wait for the laser to warm up	–
					If the alarm persists the MIMO 2 module is faulty	–	Contact technical support	<b>The module enters auto power-off:</b> coverage issue for the remote unit MIMO 2 specific operator(s)/band(s)
Laser Warning	000009 00000A 000023 00003D	Laser current consumption slightly out of range	ORANGE	Minor	Degrading laser performance	–	Contact technical support	–
	000041 000047	MIMO 1: laser current consumption slightly out of range						
Laser Warning M2	000041 000047	MIMO 2: laser current consumption slightly out of range	ORANGE	Minor	Degrading laser performance	–	Contact technical support	–
Mains Fault	000009 00000A 000023 00003D 000041 000047	The module current consumption is out of range	RED	Critical	Faulty module	–	Contact technical support	<b>The Remote Unit enters auto power-off:</b> coverage issue for the remote unit specific operator(s)/band(s)
<Band name> Current	000009 00000A 000023 00003D 000041	<Band name> current absorption is out of range <b>auto power-off</b>	BLINKING RED	Major	–	The <Band name> uplink RF input power is too high	▸ Check antenna positioning and set appropriate Remote Unit Uplink attenuation ▸ Check for uncoordinated mobiles or nearby transmitters	<b>The Remote Unit enters auto power-off:</b> the coverage for the specific band is not available
					If the alarm persists even after the Remote Unit hardware reset, the Remote Unit is faulty	–	Contact technical support	



Alarm Id	Type	Alarm Description	Remote unit external led status	Severity level	Potential Cause		Possible Solution	Service-affecting fault
					DAS Platform issue	Environment/Installation issue		
<Band name> Power UL High	00000A000009	<Band name> RF input power is out of range (Input power reduced by the ALC)	ORANGE	Minor	–	The <Band name> uplink RF input is too high	▸ Check antenna positioning and set appropriate remote unit Uplink attenuation ▸ Check for uncoordinated mobiles or nearby transmitters	–
<Band name> UL Power High	00002300003D000041000047							
					The remote unit is faulty	–	Contact technical support	–

Chart 7.9 – TDDU - TDD Synchronizer and Reference Module Equipped Inside Remote Units

Type: 00003A (\*)

SNMP ID: spvTddu

Alarm Id	Type	Alarm Description	Remote Unit external led status	Severity level	Potential Cause		Possible Solution	Service-affecting fault
					DAS Platform issue	Environment/Installation issue		
Communication	00003A	The remote unit supervision module cannot communicate with the module	–	Critical	–	Remote Unit switched off	Troubleshoot the power source	Coverage issue for the synchronized TDD band
					–	Cabling	Check the optical fiber link	
					Remote Unit switched off	–	Power cycle (reset) the remote unit. If the alarm persists replace the remote unit	
Low Temperature	00003A	The module operating temperature is too low	ORANGE	Minor	–	Low environmental temperature	Check the remote unit environmental temperature	–
High Temperature	00003A	The module operating temperature is too high	BLINKING RED	Major	–	High environmental temperature	Improve the efficiency of the remote unit cooling system: heat sinks, fans and air flow availability	–
Mains Fault	00003A	Current consumption is out of range	BLINKING RED	Major	The TDD Unit is faulty	–	Contact technical support	Coverage issue for the synchronized TDD band
PLL Unlock	00003A	PLL is unlocked	BLINKING RED	Major	–	No TDD reference signal	Check that cables 3 and 4 shown in the following figure are connected properly	The coverage for the remote unit TDD band is not available
					The Remote Unit is faulty	–	Contact technical support	
TDD Unlock	00003A	Missing TDD signal	BLINKING RED	Major	No TDD reference signal due to the <i>TDD Unlock</i> alarm active for the TSYNC module, distributing the TDD reference signal to the remote unit	–	Check the TSYNC module, distributing the TDD reference signal to the remote unit. Please refer to the TSYNC module troubleshooting ( <a href="#">Chart 1.6</a> )	The coverage for the remote unit TDD band is not available

(\*) Type 58 valid for OMC versions earlier than 1.8.0 and OMT versions earlier than 3.2.2



## Appendix A – Automatic Power-off

The auto power-off function is activated when alarms that might cause damages to the modules arise in the DAS. An auto power-on procedure is provided to allow the module resume from auto power-off status.

The following table shows which alarms cause the auto power-off function to activate. It also describes the auto power-on procedure provided for each alarm:

Module / Equipment	Alarm Id	Device switched off	Auto power-on procedure
TDTPOI - Active DAS Tray Point of Interface (only when the power limiter mode is set to <i>RF off</i> )	Pwr Limiter DL1	Module	Auto switch-on when alarm ceases
	Pwr Limiter DL2	Module	Auto switch-on when alarm ceases
TLPPOI - Low Power Active POI module (only when the power limiter mode is set to <i>RF off</i> )			
TDTPOI - Active DAS Tray Point of Interface	Pwr Overdrive DL1	Module	Alarm clearing (Clear button available in OMT webpages) or hardware reset required
TLPPOI - Low Power Active POI module	Pwr Overdrive DL2	Module	Alarm clearing (Clear button available in OMT webpages) or hardware reset required
TAPOI - JMA Active POI (only when the power limiter mode is set to <i>10dB-isolated</i> )	DL Power IN High	Module	Auto switch-on when alarm ceases
TDFE, TDFE-F - Donor Front End	Temperature Low	Module	Auto switch-on when alarm ceases
	Temperature High	Module	Auto switch-on when alarm ceases
	Temperature DL	Module	Auto switch-on when alarm ceases
	Temperature UL	Module	Auto switch-on when alarm ceases
	Mains Fault	Module	Up to three auto switch-on attempts at 1 minute interval. After 3 failed attempts the module is switched off
	Mains Fault DL	Module	Up to three auto switch-on attempts at 1 minute interval. After 3 failed attempts the module is switched off
	Mains Fault UL	Module	Up to three auto switch-on attempts at 1 minute interval. After 3 failed attempts the module is switched off
TSFE - Service Front End	Mains Fault	Equipment	Up to three auto switch-on attempts at 1 minute interval. After 3 failed attempts the module is switched off
MU-OTRX - Optical Tx/Rx for Master Unit	Low Temperature	Laser	Auto switch-on when alarm ceases
	High Temperature	Laser	Auto switch-on when alarm ceases
	Mains Fault	Laser	Up to three auto switch-on attempts (1 minute interval). After 3 failed attempts the TX is switched off
	Laser Fault	Laser	Up to three auto switch-on attempts (1 minute interval). After 3 failed attempts the TX is switched off
	Laser Fault M1	Laser	Up to three auto switch-on attempts (1 minute interval). After 3 failed attempts the TX is switched off
	Laser Fault M2	Laser	Up to three auto switch-on attempts (1 minute interval). After 3 failed attempts the TX is switched off
TTRUPTP - Point to Point Link Master and Secondary	Low Temperature	Laser	Auto switch-on when alarm ceases
	High Temperature	Laser	Auto switch-on when alarm ceases
	Mains Fault	Laser	Up to three auto switch-on attempts (1 minute interval). After 3 failed attempts the TX is switched off
	Laser Fault	Laser	Up to three auto switch-on attempts (1 minute interval). After 3 failed attempts the TX is switched off



Module / Equipment	Alarm Id		Device switched off	Auto power-on procedure
RU-OTRX - Optical Tx/Rx Equipped Inside Pole-mount and Boxed Remote Units  RU - One to Three Bands and Low Bands Remote Units with up to 2W Output Power	Low Temperature		Laser RX $n$ ( $n$ =number of bands of the remote unit)	Auto switch-on when alarm ceases
	High Temperature		Laser RX $n$ ( $n$ =number of bands of the remote unit)	Auto switch-on when alarm ceases
	Mains Fault		Laser RX $n$ ( $n$ =number of bands of the remote unit)	Up to three auto switch-on attempts at 1 minute interval. After 3 failed attempts TX and RX $n$ are switched off
	<Band name> Current		RX $n$ ( $n$ =number of bands of the remote unit)	Up to three auto switch-on attempts at 1 minute interval. After 3 failed attempts the RX $n$ is switched off
	Laser Fault		Laser	Up to three auto switch-on attempts at 1 minute interval. After 3 failed attempts the TX is switched off
	Laser Fault M2		Laser	Up to three auto switch-on attempts at 1 minute interval. After 3 failed attempts the TX is switched off
RU - Four to Seven Bands Remote Units with up to 2W Output Power	Low Temperature		Laser RX $n$ ( $n$ =number of bands of the remote unit)	Auto switch-on when alarm ceases
	High Temperature		Laser RX $n$ ( $n$ =number of bands of the remote unit)	Auto switch-on when alarm ceases
	Temperature		Laser RX $n$ ( $n$ =number of bands of the remote unit)	Auto switch-on when alarm ceases
	Mains Fault		Laser RX $n$ ( $n$ =number of bands of the remote unit)	Up to three auto switch-on attempts at 1 minute interval. After 3 failed attempts TX and RX $n$ are switched off
	<Band name> Current		RX $n$ ( $n$ =number of bands of the remote unit)	Up to three auto switch-on attempts at 1 minute interval. After 3 failed attempts the RX $n$ is switched off
	Laser Fault		Laser	Up to three auto switch-on attempts at 1 minute interval. After 3 failed attempts the TX is switched off
HPA, MPA, VHPA, WHPA- Power Amplifier Equipped Inside Service Front End, Pole-mount and Boxed Remote Units	Low Temperature		Module	Auto switch-on when alarm ceases
	High Temperature		Module	Auto switch-on when alarm ceases
	Mains Fault		Module	Up to three auto switch-on attempts at 1 minute interval. After 3 failed attempts the Power Amplifier is switched off
	Loop Control(not for spvMpa)		Module	
PwrDistributor - 19" Subrack for the AC or DC Remote PSU Modules and DC Distribution	Cur High 1 Cur High 2 Cur High 3 Cur High 4 Cur High 5 Cur High 6 Cur High 7 Cur High 8 Cur High 9 Cur High 10 Cur High 11 Cur High 12 Cur High 13 Cur High 14 Cur High 15 Cur High 16	Cur High 17 Cur High 18 Cur High 19 Cur High 20 Cur High 21 Cur High 22 Cur Low 23 Cur High 24 Cur High 25 Cur High 26 Cur High 27 Cur High 28 Cur High 29 Cur High 30 Cur High 31 Cur High 32	Vdc Output port $n$	Up to three auto switch-on attempts (1 minute interval). After 3 failed attempts the port is disabled and needs to be enabled in the PwrDistributor OMT webpage



## Appendix B – <Band name> Table

<Band name> values						
SMR700	8AE	PCS1900	WCS2300	PS700C	LTE800 M1	LTE2600
SMR700 M1	8S-8A	PCS-E	WCS M1	PS800	GSM900	LTE2600 M1
SMR700 M2	SMR800C+AMPS850	PCS1900 M1	WCS M2	7P	EGSM900	LTE2600 M2
700	8SC-8A	PCS1900 M2	23TDD	7FL	EGSM900 M1	35ITDD M1
700B	SMR900	PCS1900H	23TDD M1	8P	R-GSM900	35ITDD M2
700B M1	AMPS	AWS2100	23TDD M2	9PP	GSM-R900	35TTDD M1
700B M2	AMPS800	AWS2200	25TDD	Public900	DCS1800	35TTDD M2
700Brazil	AMPS850	AWS-3	2500TDD	LTE600	DCS1800 M1	TETRA380
700APT	AMPS850 M1	AWS-3 M1	25TDD M1	LTE600 M1	DCS1800 M2	TETRA385
SMR700E	AMPS850 M2	AWS-3 M2	25TDD M2	LTE600 M2	UMTS2100	TETRA410
SMR800	8AO	AWX	HIGH	7C-8-M1	UMTS2100 M2	TETRA415
SMR800C	800AO	AWS FULL	LOW	7C-8-M2	UMTS2100B	TETRA450
SMR800/AMPS	SMR900	WCS	PS700	LTE800	UMTSB	TETRA455