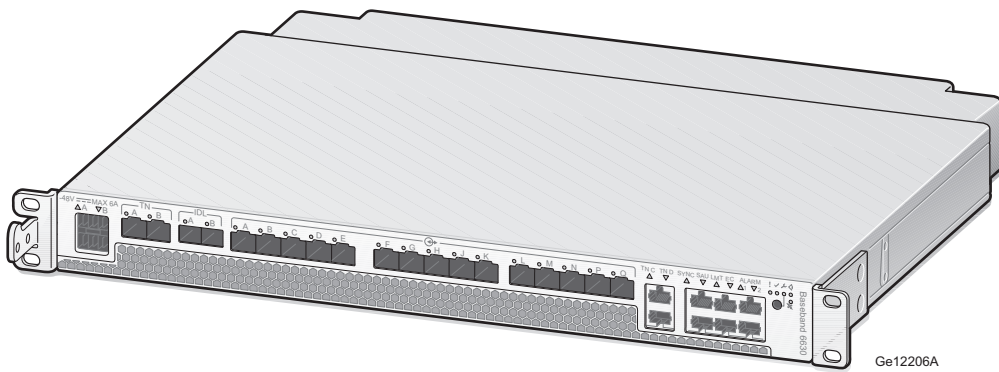


# Baseband Description

Baseband 6620, Baseband 6630

## Description



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# 1 Product Overview

This document describes the 19-inch baseband units for Ericsson Radio Systems.

## 1.1 Main Features

This section describes the main features of the baseband.

Not all features are supported by all equipment configurations. For a description of the current equipment configurations, see [RBS Configurations](#).

The main features of the baseband are the following:

- NR
- LTE (FDD and TDD), WCDMA, GSM
- NB-IoT
- Elastic RAN
- Mixed Mode
- Backhaul cascading
- Baseband 6630 supports multibaseband configurations

## 1.2 Purpose

Baseband 6620 and Baseband 6630 provide switching, traffic management, timing, baseband processing, and radio interfacing. The baseband units in the 19-inch format, with 15 Common Public Radio Interface (CPRI) ports, enable increased connectivity for radio units.

## 1.3 Variants

The 19-inch baseband units are available in the following variants:

- Baseband 6620
- Baseband 6630

Baseband 6620 is supported from software L17.Q2.2, W17.Q2.2, and G17.Q2.2.

Baseband 6630 is supported from software L17.Q2.2, W17.Q2.2, and G17.Q2.2.



For information about supported configurations and capacity, refer to RBS Configurations

## 1.4 Overview

This section provides an overview of the 19-inch baseband units, see [Figure 1](#).

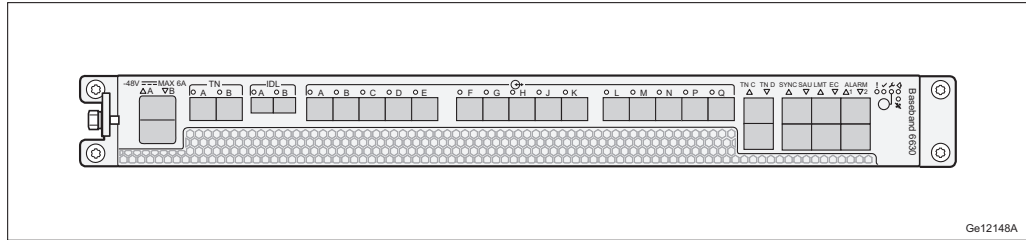


Figure 1 Overview Baseband 6620 and Baseband 6630

Baseband 6620 and Baseband 6630 are self-maintained 19-inch units with an easily removable fan tray unit. Each unit can be installed standalone in any 19-inch rack or cabinet or in an RBS.

Baseband 6620 and Baseband 6630 facilitate a scalable, modular system with one or more indoor 19-inch baseband units and a number of external radios. [Figure 2](#) shows the 19-inch Baseband installed in a rack and connected to external radios.

For information about 19-inch baseband unit placement in an RBS, refer to RBS Description.

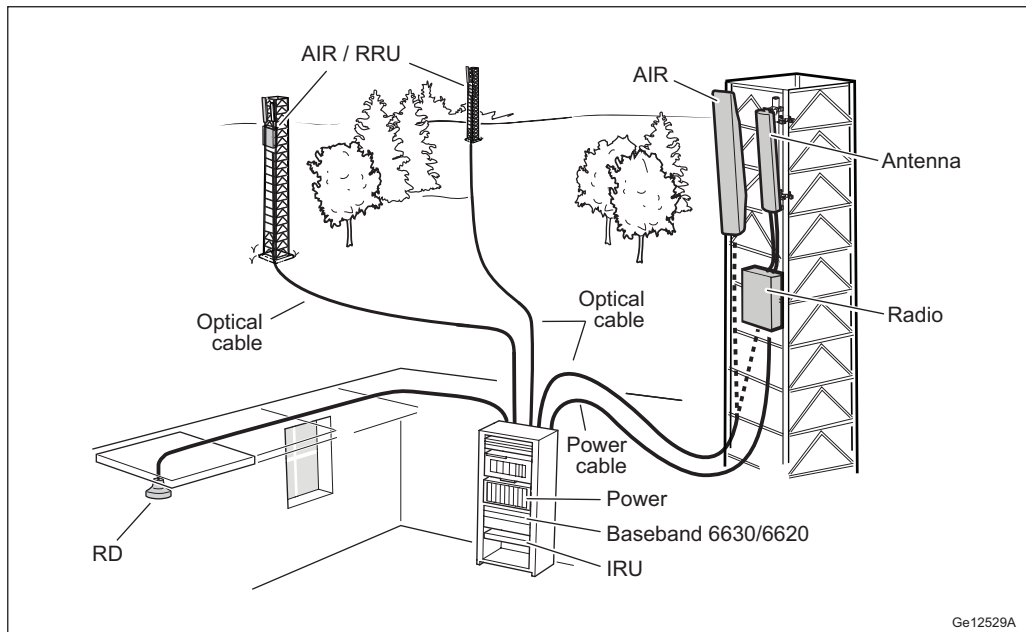


Figure 2 19-Inch Baseband Connected to External Radios



## 1.5 Warranty Seal

The product is equipped with a warranty seal sticker.

**Note:** Seals that have been implemented by Ericsson must not be broken or removed, as it otherwise voids warranty.



## 2 Function Description

The Baseband has the following functions:

- Timing function
- Loadable software
- Downlink (DL) baseband processing
- Uplink (UL) baseband processing
- IP traffic management
- Radio interface
- Backhaul handling
- External synchronization

For the block diagram of the Baseband, see [Figure 3](#).

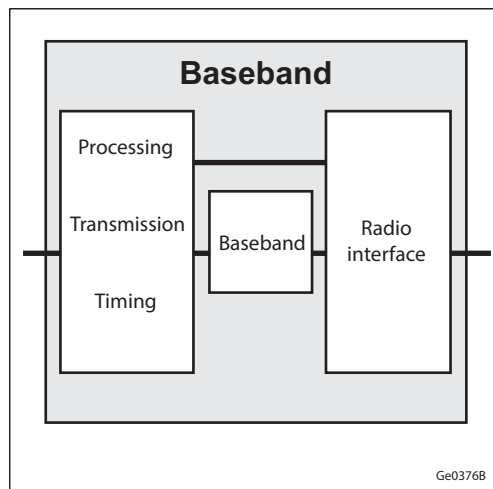


Figure 3 Baseband Block Diagram

For more information about the external synchronization, see the following documents:

- GNSS Receiver System Description
- GNSS Receiver System User Guide
- Manage Network Synchronization
- Manage Node Group Synchronization





— Manage LTE RAN Synchronization



## 3 Technical Data

Technical data for the 19-inch Baseband unit is listed in [Table 1](#), and [Table 2](#).

For information about power consumption, refer to [Power Consumption Calculations](#).

Table 1 Dimensions and Weight

Baseband	Height	Width	Depth	Weight
Baseband 6620	1 U (44.45 mm)	19-inch	350 mm	< 6.5 kg
Baseband 6630				

Table 2 Technical Data

Baseband	Radio Interface Line Rate	
	CPRI	eCPRI
Baseband 6620	2.5 Gbps, 4.9 Gbps <sup>(1)</sup> , 9.8 Gbps <sup>(1)</sup> , and 10.1 Gbps <sup>(1)</sup>	Not supported
Baseband 6630	2.5 Gbps, 4.9 Gbps <sup>(1)</sup> , 9.8 Gbps <sup>(1)</sup> , and 10.1 Gbps <sup>(1)</sup>	10.3 Gbps <sup>(1)</sup>

(1) Depending on the Software Package

For more information about capacity data, refer to [RBS Configurations and Supported Capacity and Configurations](#).

### 3.1 Environmental Characteristics

Values for the normal operating environment of the baseband unit are shown in [Table 3](#).

Table 3 Environmental Data

Description	Value
Temperature	0 to +55°C
Relative humidity	5–95%
Absolute humidity	1–29 g/m <sup>3</sup>
Maximum temperature change	0.5°C/min



**Note:** The operating environment of the unit must be a temperature-controlled enclosed location suitable for sensitive data and telecommunication equipment, with very low levels of airborne particles. For example Network Telecommunication Facilities or inside an Outside Plant (OSP) cabinet.

### 3.1.1 Acoustic Noise

The baseband unit may emit low levels of acoustic noise when operating.

The acoustic noise is ambient temperature dependent.

Table 4 Sound Power Level

Temperature (°C)	Baseband Sound Power Level (dB)
+20	<53
+25	<53
+30	<53
+40	<53
+45	<59
+55	<64

## 3.2 Power Characteristics

The power supply voltage for the baseband unit is -48 V DC. The power supply requirements are shown in [Table 5](#).

Table 5 DC Power Supply Requirements

Condition	Value
Nominal voltage	-48 V DC
Operating voltage range	-38.0 to -58.5 V DC
Non-destructive range	0 to -60 V DC

### Fuse and Circuit Breaker Recommendations

The external fuse and circuit breaker recommendation for the baseband unit is shown in [Table 6](#).

The recommendations in this section are based on peak power consumption and give no information on power consumption during normal operation.

The recommended melting fuse type is gG-gL-gD in accordance with IEC 60269-1. Circuit breakers must comply with at least Curve 3 tripping characteristics in accordance with IEC 60934.



Table 6 Fuse and Circuit Breaker Recommendations

DC Power	Minimum Fuse Rating for Reliable Operation (A) <sup>(1)</sup>	Maximum Fuse Rating (A) <sup>(2)</sup>
Baseband unit	10	20

(1) The recommended fuse rating corresponds to peak load and depends on the configuration.

(2) This value is the internal maximum fuse rating for the unit. General fuse dimensioning have to take all external factors into account, such as local regulations and cable dimensioning.

### 3.2.1 Power Consumption

The power consumption values are presented as typical and maximum values, for a unit with fan. The typical values are based on an air temperature of 20 °C for the air entering the unit and a typical traffic load. The maximum values are based on an air temperature of 55 °C for the air entering the unit and a maximum traffic load.

**Note:** The power consumption for SFPs, SAU, or GPS is not included.

Table 7 Power Consumption

Unit	Typical	Maximum
Baseband 6620	90 W	140 W
Baseband 6630	120 W	180 W



## 4 Hardware Architecture

This section contains an overview of the hardware units of the 19-inch baseband unit.

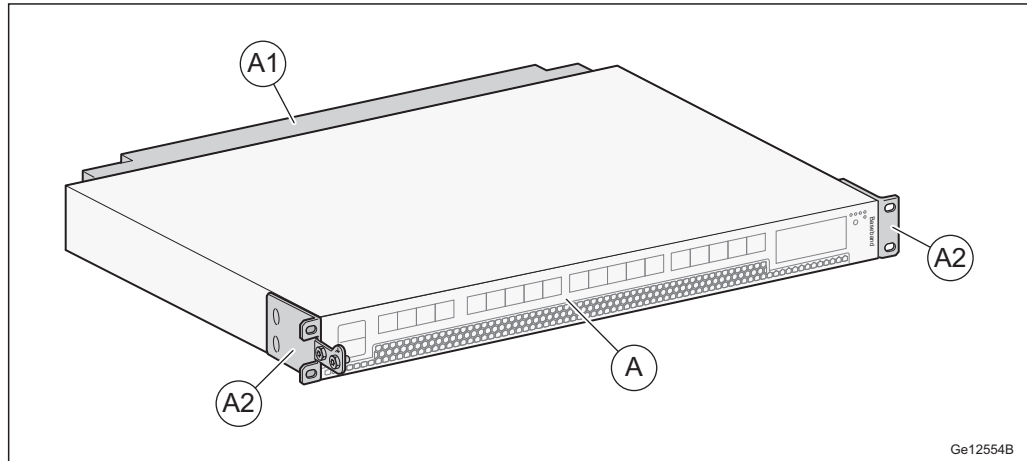


Figure 4 19-Inch Baseband Hardware Units Location

Table 8 19-Inch Baseband Hardware Units




Position	Name of Units	Number of Units
A	19-inch baseband unit	1
	A1 Fan module	1
	A2 Movable Brackets	2



## 5 Baseband Interfaces

The interfaces for the baseband units are described in [Table 9](#).

Table 9 Baseband 6620 and Baseband 6630 Interfaces

Marking	Connector	Description	Optical Indicator <sup>(1)</sup>
-48V  A -48V  B	ET20 A <sup>(2)(3)(4)</sup>	-48 V DC Power	Yes
TN A and TN B <sup>(5) (6)</sup> (7)	SFP+ <sup>(8)</sup>	1 Gbps/10 Gbps Ethernet transmission External interface; electrical/optical	Yes
TN C and TN D <sup>(5)(6)</sup>	RJ-45	100 Mbps/1 Gbps Ethernet transmission External interface; electrical	Yes
IDL A	Xcede	IDLe, Elastic RAN connection, multibaseband connection <sup>(9)</sup> Baseband to Baseband interface	Yes
IDL B	Xcede	IDLe, Elastic RAN connection, multibaseband connection <sup>(9)</sup> Baseband to Baseband interface	Yes
 <sup>(10)</sup>	SFP+ <sup>(11)</sup>	Radio interface × 15 Internal interface between baseband and internal radios, electrical External interface between baseband and external radios, optical Ports A-F support eCPRI	Yes



Marking	Connector	Description	Optical Indicator <sup>(1)</sup>
SYNC	RJ-45	Synchronization interface for connection of a GNSS receiver unit, for example, GPS 03 01 External interface	Yes
SAU	RJ-50	Interface for connection of a Support Alarm Unit (SAU)	Yes
LMT	RJ-45	LMT A interface <sup>(12)(13)</sup> LMT B Interface <sup>(13)(14)</sup> Synchronization test interface <sup>(15)(16)</sup> Internal and external interfaces	Yes <sup>(17)</sup>
EC	RJ-45	Enclosure Control Bus (ECB) Internal interface	Yes
ALARM	RJ-45	External alarm interface. The unit supports eight external alarms, four per port.	
!	-	Fault Optical indicator, red	Yes
✓	-	Operation Optical indicator, green	Yes
🔧	-	Maintenance Optical indicator, blue For information about the maintenance button, refer to Indicators, Buttons, and Switches.	Yes
📶	-	Status Optical indicator, yellow	Yes
🌀	-	Fan unit fault Optical indicator, yellow	Yes

(1) For more information about optical indicators, refer to Indicators, Buttons, and Switches

(2) The 19-inch Baseband units have a built-in 10 ms hold-up function.

(3) The unit supports power redundancy. Connect power sources to both power ports. If the power to one port goes down, a failover will occur automatically to the other power source.



- (4) The unit supports 3-wire (DC-I) power feed. It can also support 2-wire (DC-C) power feed by making a jumper connection in the power cable. Refer to *Install 19-Inch Baseband* for more information about the power cable pin out, and *Power Cables 2- and 3-Wire*.
- (5) Supports synchronization over the transport network.
- (6) Hardware Activation Codes are required for use of multiple TN ports simultaneously.
- (7) Hardware Activation Codes are required for use of 10 Gbps transmission.
- (8) SFP+ is needed for transmission rates higher than 2.5 Gbps.
- (9) Multibaseband connection is only supported by Baseband 6630.
- (10) Hardware Activation Codes are required for use of more than 6 CPRI ports.
- (11) SFP+ is needed for CPRI rates higher than 2.5 Gbps.
- (12) RS-232 interface. Accessed with the LMT splitter cable.
- (13) For more information about the LMT interfaces, see *Connect Client*.
- (14) 100 Mbps electrical Ethernet interface.
- (15) Compliant with 1PPS 50  $\Omega$  phase synchronization measurement interface. Accessed with an adapter.
- (16) For more information about the sync test interface, see *Manage Network Synchronization*.
- (17) The optical indicator indicates the status of the LMT B interface.

Do not remove dust plugs from unused ports. Always insert dust plugs into ports that are not in use by a cable connector.

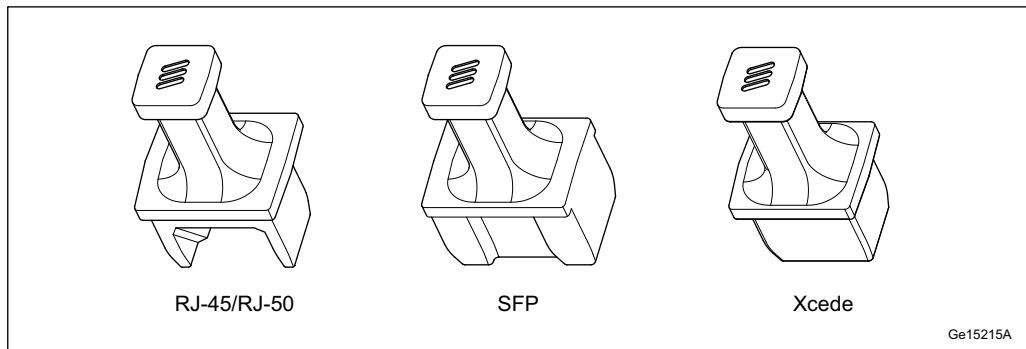


Figure 5 Dust Plugs for RJ-45/RJ-50, SFP, and Xcede Interfaces





## 6 Standards and Regulations

This section presents a brief overview of standards, regulatory product approval, and declaration of conformity.

### **Declaration of Conformity**

*"Hereby, Ericsson AB, declares that this Product is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU and 2011/65/EU."*

### 6.1 Regulatory Approval

The product complies with the following market requirements:

- European Community (EC) market requirements, Radio Equipment Directive 2014/53/EU and Directive 2011/65/EU.
- Restriction of Hazardous Substances in Electrical and Electronic Equipment (RoHS) Directive (2011/65/EU).
- North American market requirements.
- Products containing Radio Equipment outside North America and in countries not recognizing the CE-mark may be labeled according to national requirements or standards.

#### 6.1.1 Environmental Standards Compliance

The product complies with the following environmental standard:

##### **Europe**

- EN 50581 (RoHS)

#### 6.1.2 Safety Standards Compliance

In accordance with market requirements, the product complies with the following product safety standards and directives:

##### **International**

- IEC 60 529 (IP20)



- IEC 62368-1

#### **Europe**

- EN 60 529 (IP20)
- EN 62368-1

#### **North America**

- UL/CSA 62368-1

### **6.1.3 EMC Standards Compliance**

The product complies with the following Electromagnetic Compatibility (EMC) standards:

#### **International**

- 3GPP TS37.113

#### **Europe**

- ETSI EN 301 489-1
- ETSI EN 301 489-50

#### **North America**

- FCC CFR 47 Part 15 B
- IC ICES-003 B

### **6.1.4 Radio Standards Compliance**

The product complies with the following radio standards:

#### **International**

- 3GPP TS37.141

#### **Europe**

- ETSI EN 301 908-1
- ETSI EN 301 908-18



## 6.1.5 Marking

To show compliance with legal requirements the product is marked with the following labels:

### Europe

- CE mark
- WEEE

### North America

- usETL/cETL
- FCC CFR 47 Part 15 Statement
- IC ICES-003 Statement

### China

- Logo2 marking (according to the Ericsson marking instruction 102 01-3086)

## 6.2 Preventive Maintenance

The product is designed for a technical lifetime of 10 years (24-hour operation).

The following preventive maintenance conditions must be fulfilled to guarantee the availability:

- Fans
  - Ericsson recommends replacing the fans every 5 years.
- Air Intake
  - The air intake must be inspected (and cleaned if necessary) every year.

## 6.3 Spare Parts

The product adheres to the Ericsson Serviceability and Spare Part Strategy.



## 6.4 Transportation and Storage

For information about transportation and storage of the product, see Transportation and Storage.