



Ribbon Communications

Our Approach to Waste Management and Circularity

Overview

Ribbon is a leading, publicly traded, global provider of communications technology, employing thousands of people operating in more than 100 countries. Using our trusted solutions, our customers can offer services that improve the quality of life for millions of people around the world, support digital inclusion across markets and lower global greenhouse emissions through efficient bandwidth utilization and cloud-based applications.

As a responsible and accountable business, we aim to conserve natural resources and minimize negative impacts that our activities, products and services may have on the natural environment.

Our Approach

We deliver resource efficiency throughout our entire product lifecycle, starting with identification of requirements for our development teams to responsible end-of-life management of our products. In all our processes and designs, we aim to minimize waste and enable recyclability. Our hardware products are designed for very long life use, including features for repairability of components and spare part availability. We design our components to be serviceable to enable product life to be extended, and we expand the usability of our hardware by adding software components to avoid additional hardware requirements. Where possible, at end of use, we redeploy hardware from customers back to our sites for reuse by our R&D, Verification and Operations teams. See also Ribbon's [Environmental Policy](#).

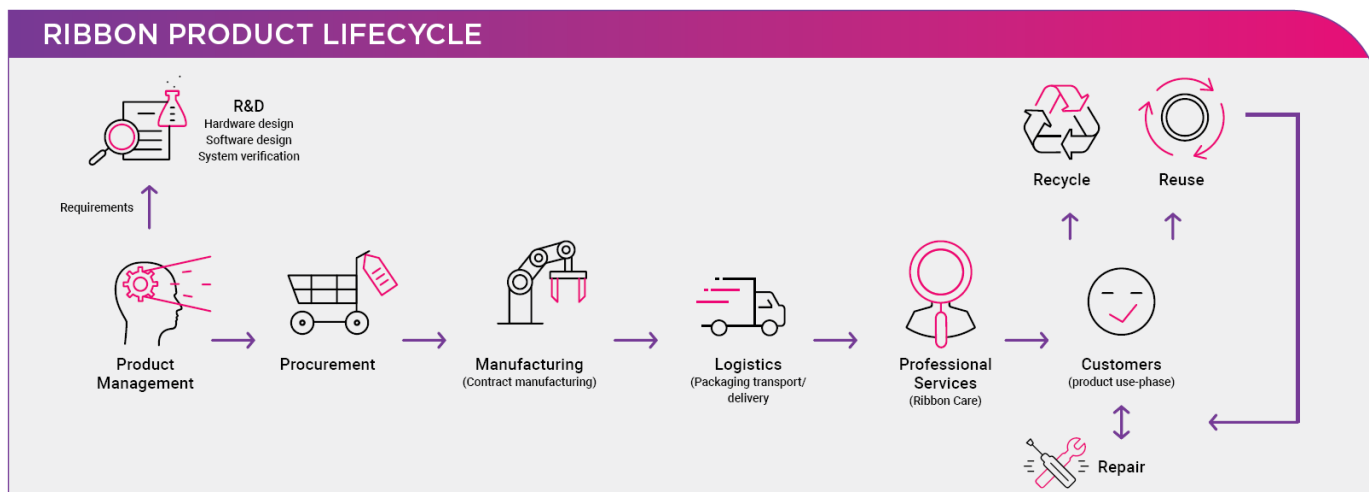
We manage our environmental impacts by working in alignment with our Environment Management System (EMS), which follows the ISO 14001:2015 Environmental Management Standard. Our primary facilities are certified to this standard and we continue to review certification site scope annually.

Design for Environment

At Ribbon, as part of our responsibility to design products and services that implement sound environmental design practices, our focus is to ensure are solutions consider resource efficiency, minimizing the use of hazardous materials or materials of concern and anticipating future regulatory requirements. Design for Environment (DfE) seeks to eliminate the potential negative environmental impacts that can result from a product or process during its lifecycle. The environmental design practices that we deploy to help minimize waste and optimize recyclability include:

- Minimum number and quantity of materials used in design

- Modular design concepts
- End-of-life disposal and recyclability of materials



Waste management at Ribbon sites

Our operations generate a very minimal amount of waste, most of which is non-hazardous and recyclable, such as paper and cardboard used for packaging and electronic waste from our laboratory operations. We aim to minimize internal waste through material reuse, recovery or repurpose. For example, we reuse packaging wherever possible and aim to procure packaging that is sustainably sourced and recyclable.

We practice waste segregation at our sites and aim to deploy appropriate waste handling solutions that include recycling and reuse wherever possible, minimizing the amount of waste we send to landfill. In particular, we have made significant recent progress in reducing plastic waste at source by avoiding plastic bubble-wrap, for example, in our inter-office shipments, and in our offices by providing alternatives to single-use plastics such as plastic-coated drinking cups, stirrers and food serving packaging.

Ribbon reinforces employee awareness of waste avoidance and minimization through training on waste management and waste segregation and prominent signage at our facilities.

Working with contract manufacturers and suppliers to minimize waste

As part of our [Supplier Code of Conduct](#), we expect our contract manufacturers and suppliers to take a responsible approach to environmental impacts. We expect them to minimize waste in their operations for Ribbon and we review their progress as part of our supply chain oversight. We favour manufacturing facilities which are zero landfill-waste certified. See our Approach to [Responsible Supply Chain Management](#).

We encourage all suppliers to minimize waste from packaging in the products and components they supply to Ribbon or to our contract manufacturers, or directly to customers where relevant. We state a preference for the use of environmentally preferable packaging materials that include recycled content, are reusable or

recyclable, avoid single-use plastics and reduce shipping bulk where possible. Where we can, we work with suppliers on component design to optimize packaging from an environmental standpoint.

Product end-of-life, reuse, repair and recycling

Our hardware products are designed for very long life use. We amplify the longevity of our hardware by enabling new functionality through software enhancements, meaning that customers rarely need to change or replace physical parts across their networks. Also, our modular designs allow repairability and upgrade of components rather than whole box replacement.

In cases where our hardware becomes defective, obsolete or inadequate to meet new needs, we offer our customers the possibility of returning all products, components and parts to Ribbon.

We maintain Product Repair facilities at different locations, supported by a global repair/refurbishment program management. Where products are received in our repair facilities, they are handled via the following channels:

- In the case of product malfunction, wherever possible, we repair the products and return them to customers.
- In the case of product obsolescence, we refurbish the product for use in our own facilities for testing and verification purposes.
- When products are no longer required by customers for whatever reason, we examine their functionality and prepare them for reuse by other customers or in Ribbon laboratories.
- In the small proportion of cases where we cannot salvage products for reuse, we decommission them, segregate their component materials and recycle the parts separately.

In this way, more than 98% of all parts returned to Ribbon are redeployed or recycled.

Ribbon uses external providers for product or component recycling from time to time, for parts that we cannot repair or reuse. We maintain a network of recycling providers with global coverage. All our recycling partners are verified as part of our ISO14001 certification, ensuring they have relevant local permits and have high quality recycling facilities and operations.

Additionally, we comply with all applicable take-back regulations around the world, including the Waste Electrical and Electronic Equipment (WEEE) Directive 2012/19/EU, and aim to anticipate new regulation in different markets.

From hardware to software

In general, we seek opportunities for software solutions in favor of hardware wherever possible. As mentioned, software additional and enhancements enable greater productivity and longevity of hardware components. Additionally, our Software as a Service (SAAS) offerings allow Ribbon to retain ownership of hardware to speed up redeployment as part of upgrade paths and minimize overall investments in hardware by Ribbon or by our customers.

Supporting Global Sustainable Development

Our approach to waste management and circularity directly supports UN Sustainable Development Goal (SDG) 12 which calls for responsible consumption and production.



- Target 12.4: *Responsible management of chemicals and waste*

Governance

Executive direction of waste management and circularity is led by Ribbon's Executive Vice President of our two business units: Cloud & Edge and IP Optical Networks. Support is provided by senior management in specific business unit functions such as procurement, supply chain management, human resources and others. Ribbon's Board of Directors receives annual updates relating to environmental performance including waste management and circularity.

Disclosure

We report transparently to our stakeholders on progress and performance related to human rights in our [annual Sustainability Report](#).

Version 5: February 2023