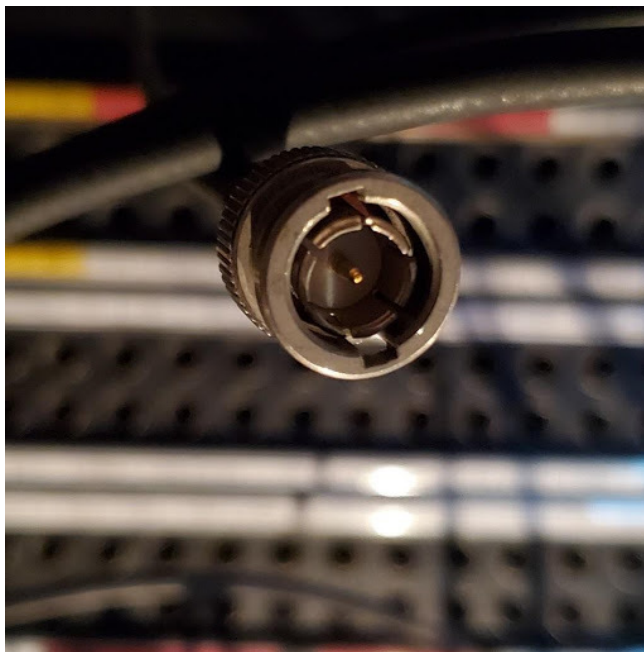




Internet Distribution with SRT: A Long Extension Cable for Your ASI



How to Use SRT for Reliable,
High-Quality Broadcast
Distribution

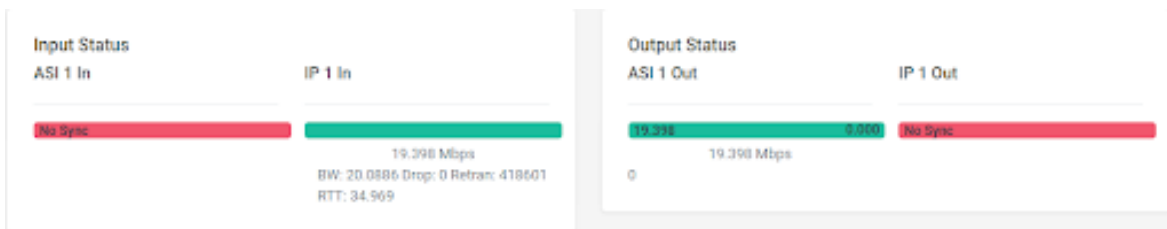
The Secure Reliable Transport (SRT) protocol is an open-source video transport protocol and technology stack that enables the delivery of secure, high-quality, low-latency video across the public internet. Accounting for packet loss, jitter, and bandwidth fluctuations at any given time, SRT optimizes streaming for video (ATSC in the U.S. and DVB in Europe) and any other type of data as well.

SRT ALLIANCE

SECURE RELIABLE TRANSPORT

With strong support from a wide variety of technology vendors and with an expanding user base among media organizations, this non-proprietary protocol is in the process of being standardized by the Internet Engineering Task Force (IETF) with leadership by Haivision.

This guide will explain how SRT is transforming critical media transport workflows and how you can use SRT to achieve more flexible, cost-effective delivery of high-quality video over any network. Read on, and you'll discover how you can use SRT as a long extension cable for your ASI streams.



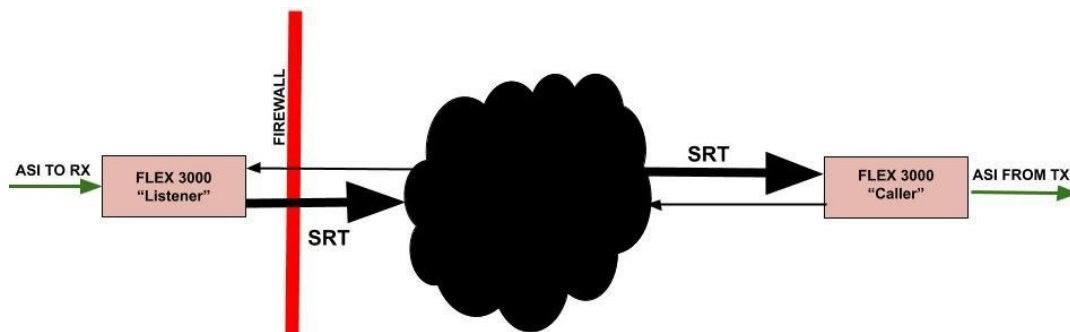
Status screen of D2Flex3K converting incoming IPSRT transport stream to ASI

SRT: Why It Matters

Live video transport over the internet has come a long way in recent years, but factors such as packet loss, bandwidth limitations, and the requirements of newer streaming formats continue to present challenges to low-latency, high-quality video delivery.

SRT matters because it addresses these factors. Combining packet loss recovery with end-to-end security (AES encryption), network health monitoring, and simple firewall traversal, SRT supports reliable video transport over unpredictable networks – including the public internet – rather than more costly MPLS or satellite links.

Because a significant and growing array of technology vendors and service providers support SRT, you can be confident that your new SRT-ready streaming technologies will integrate and interoperate with other video solutions, network infrastructures, and systems.



Ideal Applications for SRT

SRT is ideal for over-the-air (OTA) distribution applications, including delivery of signals – MPEG video in an ASI stream – from a broadcast facility (studio) to the transmitter or to a cable headend for cable carriage. The protocol is also being used for distribution in hub-and-spoke applications, where a central station delivers programming to tens or even hundreds of stations around the country. Even radio stations are taking advantage of SRT, primarily to send multiplexed radio signals – encoded into an ASI stream – for distribution.

The protocol is increasingly popular for contribution applications as well, where flexibility in connecting two endpoints over the public internet is of tremendous benefit. If you want to enhance a broadcast with a beauty shot from the top of a building across town, all you need is an inexpensive camera and encoder, plus a video gateway, to deliver that video via SRT and the available network. No microwave link needed!

Building SRT Into Your Operations

Because SRT is nearly 100% system-compatible, it can very easily be integrated into your existing facilities and operations by using the gear you already have. A port on your firewall needs to be open to TCP and UDP traffic on one end to allow for the movement of data.

Providing the bandwidth is available, you can use your current router along with your current, gen-locked satellite IRD's. An SRT to ASI converter can be used to receive the SRT stream from the router and pass it to the ASI input of the satellite IRD. Your satellite IRD has now been converted to an SRT IRD!

The ASI fed into the satellite receiver can then be decoded. The SDI is most likely already genlocked and routed to your production switcher, control room or your master control, making it seamless and efficient to put that video on the air.

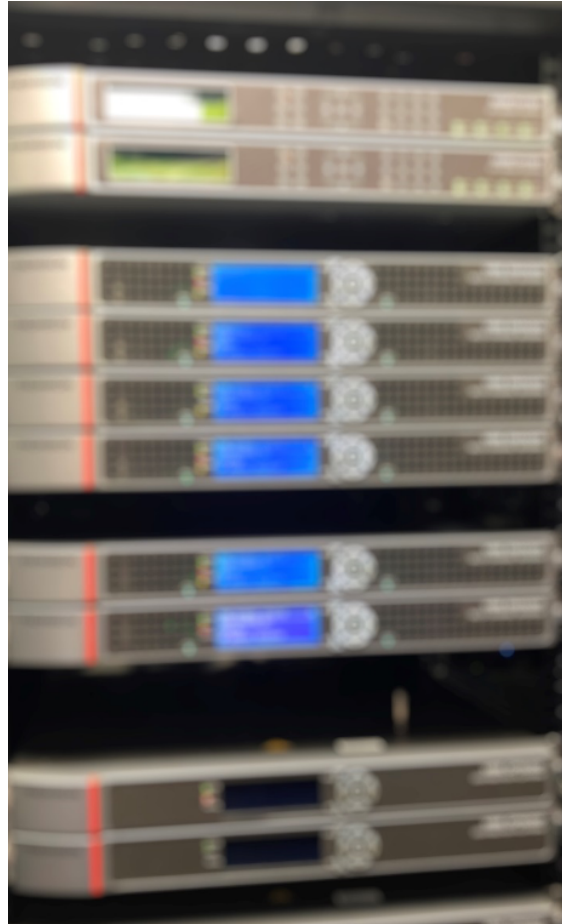


Setting Up Failover Switching for Internet Broadcasting

When using SRT to transport video, you can take advantage of hitless redundancy, standardized in SMPTE ST 2022-7, to enable network bonding. Network bonding supports failover switching by supporting simultaneous use of multiple networks.

Using a gateway device with dual ethernet ports, simply set up links to two separate network providers (AT&T, Comcast, etc.); these discrete connections and services provide redundancy in the event that one stream goes down.

To ensure the lowest possible latency and most seamless automatic switching between streams, both streams should be sent continuously. If, on the other hand, conserving bandwidth is a higher priority than ensuring low latency, you can set your system to spin up the second service if the first should go down. The longer latency in the latter case helps to cover the brief period before the backup stream starts up.

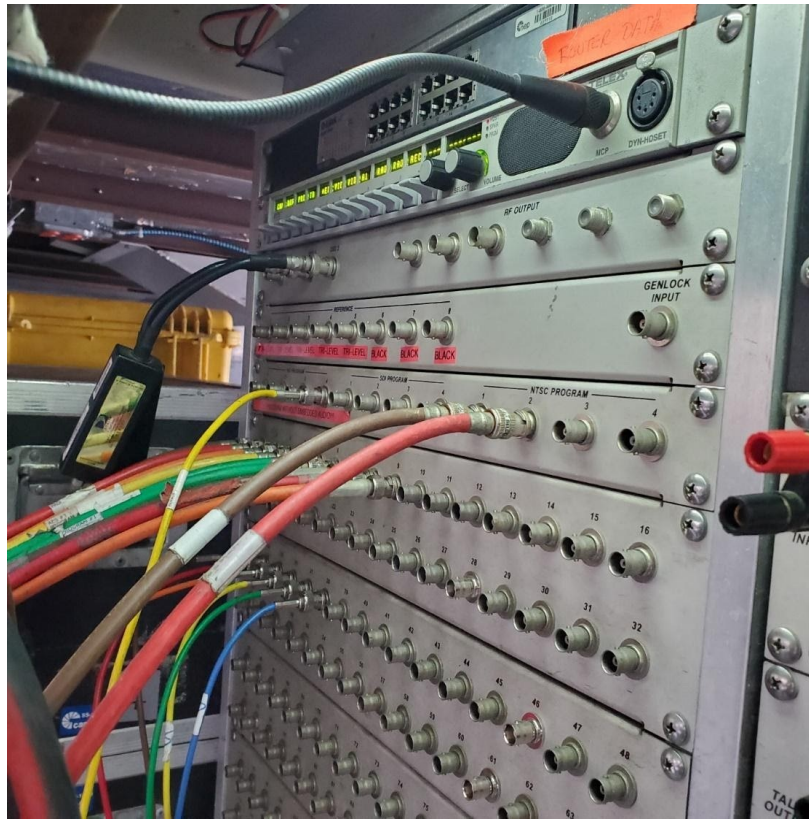


Planning Your Bandwidth Overhead

A general rule of thumb is to ensure you have about 25% overhead in terms of bandwidth, though practical experience might point toward 20% or even 10%. Ultimately, it depends on the quality of the network.

If you're moving a full ATSC transport stream, that's 20 Mbps up, which translates to something in the range of 22 to 25 Mbps up. When you're just moving a single program, which may be just 3 or 4 Mbps, then you might be fine with 5 Mbps up.

In any event, it's best not to skimp. If your provider offers the choice of 20 or 50 Mbps, go with 50 if you can. You won't always get maximum bandwidth from your provider, and you want to ensure you can handle small spikes in bandwidth usage. Do a series of speed tests to make sure you're hitting your bandwidth requirements.



Gaining Flexibility While Cutting Costs

Using SRT as a long extension cable for your ASI streams opens a variety of new opportunities, both in terms of workflow flexibility and cost savings. You can effectively turn any internet-connected location into a contribution site for broadcast TV. Where once you needed an outgoing fiber line or satellite signal, you now need only an internet connection.

The sight of a correspondent or commentator joining a broadcast from a remote site has become commonplace, but video transport via SRT supports creation of a remote studio that delivers broadcast-quality video. With latency rivaling that of a far more expensive satellite link, and with images that look much better than a conventional videoconferencing stream, this model gives you a cost-effective solution for broadcast-quality contribution.



Find out how SRT can help you. Try a demo unit in your facility.



Yes, send a demo unit