

# SC2510

## RF Distribution Module

## Product Specification (Draft)

### Typical Applications

- Phase-Coherent Systems
- Multi-Channel Radar Test
- Software Defined Radio
- Advanced Wireless Communications Research

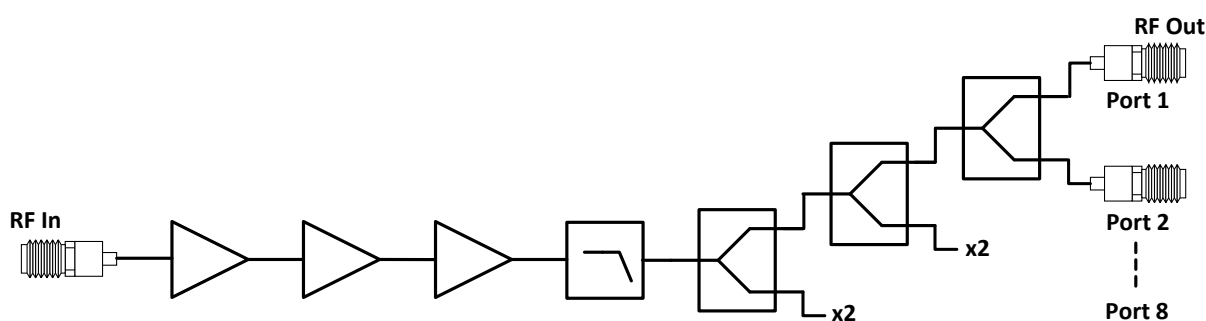


### Summary

The SignalCraft SC2510 RF Distribution Module is a high-performance, active 8-way RF splitter engineered for applications requiring phase coherence, high isolation, and net 0 dB gain. It ensures consistent signal strength across all output ports while maintaining phase stability, making it ideal for LO (Local Oscillator) distribution in MIMO systems, aerospace and defense test setups, and other software defined radio (SDR) applications.

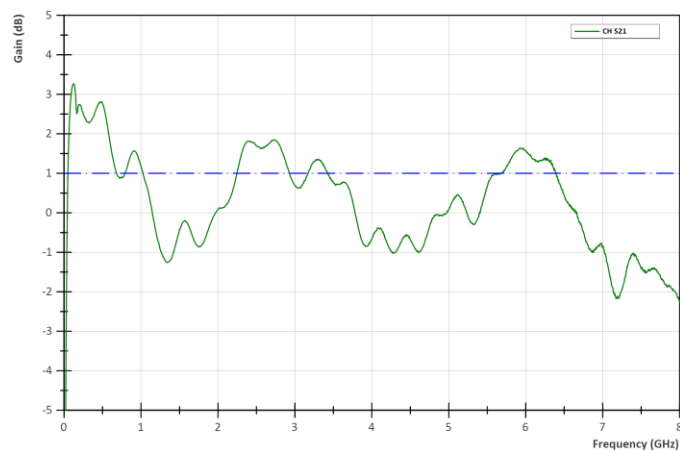
With its high port-to-port isolation, this active splitter eliminates signal interference, ensuring accurate and repeatable results. Whether you're working on wireless communication systems, phased array antennas, or test and measurement setups, this 8-way RF splitter delivers uncompromising performance and reliable signal integrity.

### Block Diagram

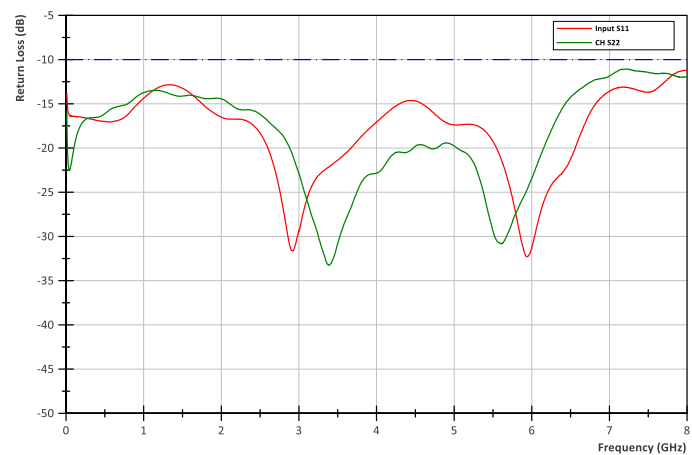


# Typical Performance

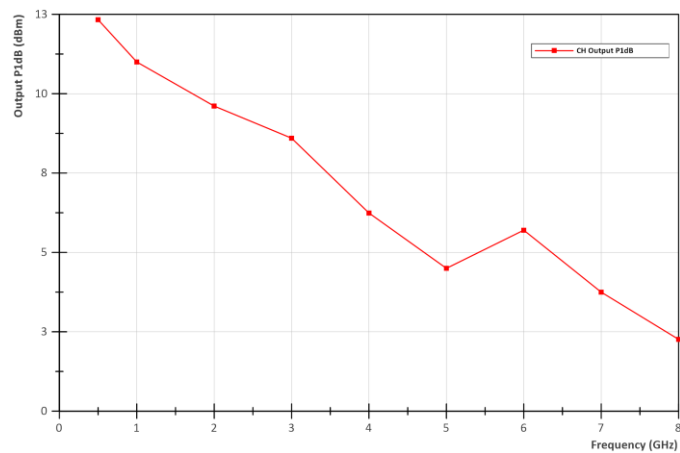
### Gain Response



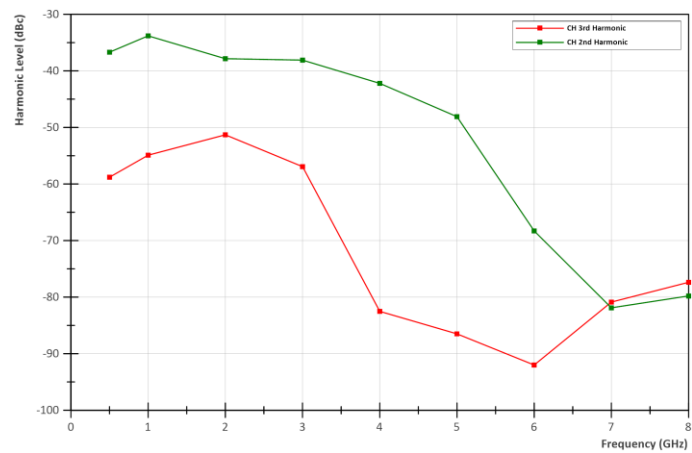
### Return Loss



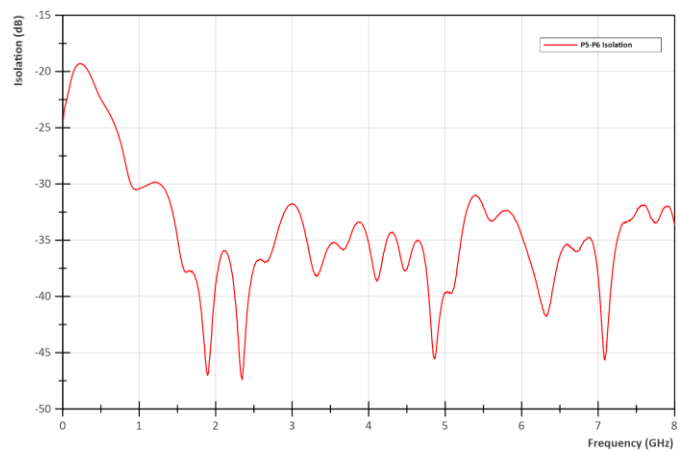
### Output P1dB



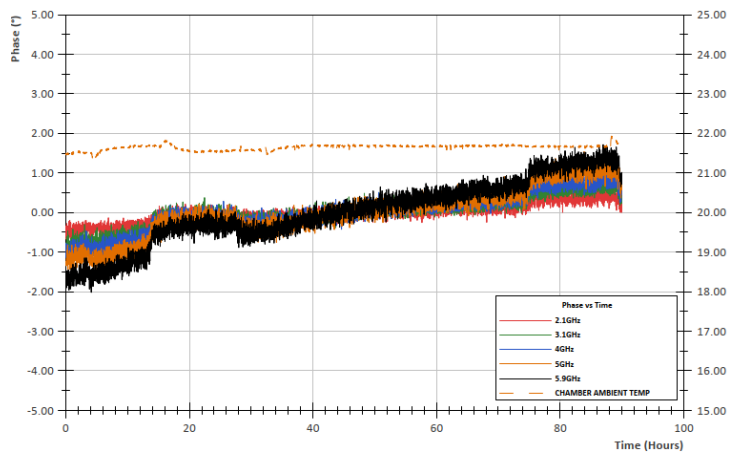
### Harmonics (Pout = 0 dBm)



### Isolation



### Phase Drift versus Time



## Specifications

| Parameter                                | Min | Typical     | Max  | Comments                        |
|------------------------------------------|-----|-------------|------|---------------------------------|
| Frequency Range (MHz)                    | 500 |             | 8000 |                                 |
| Typical Gain (dB)                        | -   | 1           | -    |                                 |
| Gain Specification (dB)                  | -7  | -           | +3   | 0.5 GHz to 1.6 GHz              |
|                                          | -7  | -           | +4.5 | 1.6 GHz to 2.3 GHz              |
|                                          | -5  | -           | +4.5 | 2.3 GHz to 6 GHz                |
|                                          | -6  | -           | +4.5 | 6 GHz to 7.5 GHz                |
| Maximum Input Power (dBm)                | -   | -           | +15  | No damage point                 |
| Output Compression Point (dBm)           | -   | 3           | -    |                                 |
| Return Loss (dB)                         | -   | -10         | -    | All ports                       |
| Channel Isolation (dB)                   | -   | 30          | -    | Worst case between output ports |
| Phase Drift over Time (degrees)          | -2  | -           | 2    | At fixed ambient temperature    |
| Harmonic Output (dBc)<br>Second<br>Third |     | -30<br>- 50 |      | Measured at Pout = 0 dBm        |

## Environmental

### Operating

|                     |                            |
|---------------------|----------------------------|
| Ambient Temperature | 0 °C to 40 °C              |
| Relative Humidity   | 10% to 90%, non-condensing |

### Storage

|                     |                           |
|---------------------|---------------------------|
| Ambient Temperature | -40 °C to 70 °C           |
| Relative Humidity   | 5% to 95%, non-condensing |

## Calibration

Calibration is not required.

## Physical Characteristics

The unit is housed in a ½ U, ½ 19" wide form factor.

Power entry is via the back of the module.

## Weight

600 grams.

## Dimensions

All dimensions in millimeters.

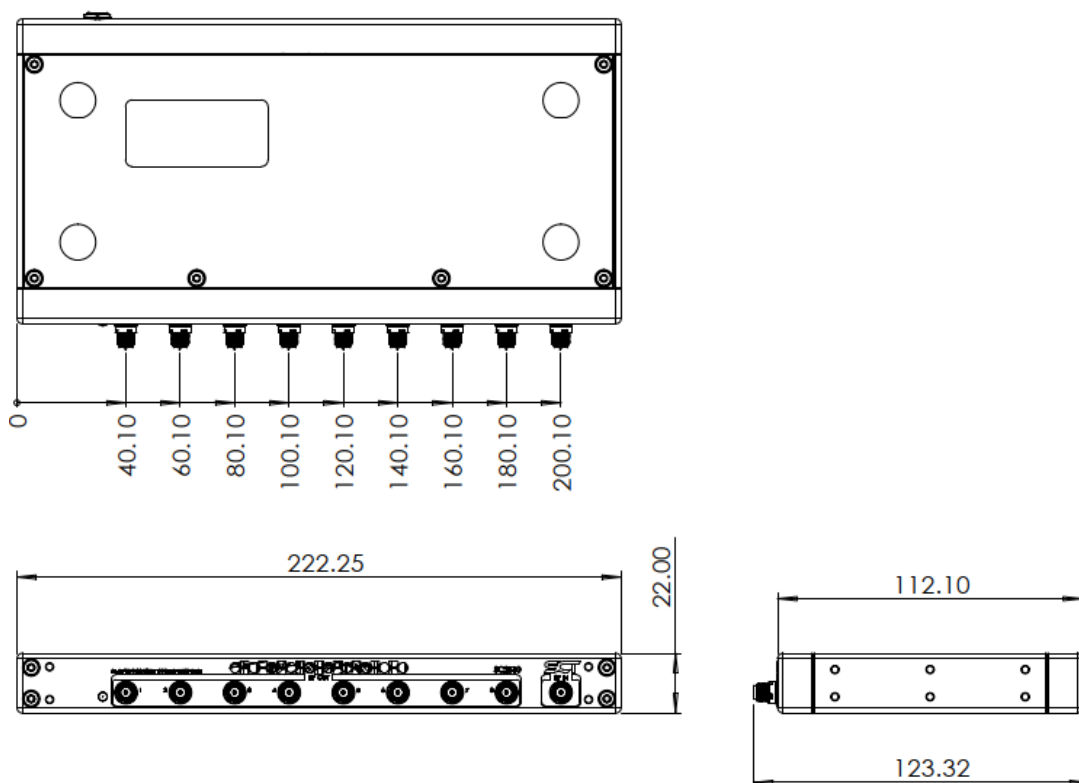




Figure 1: Isometric View



Figure 2: Front View



Figure 3: Rear View



Figure 4: Multi-Module Deployment view with Bracket

## Compliance and Certifications

The EU Declaration of Conformance (DoC) for this product can be obtained from the support section of our website, located at [www.signalcraft.com/support/support-microwave/](http://www.signalcraft.com/support/support-microwave/).

### Electromagnetic Compatibility (EMC)

This product meets the requirements of the following EMC standards for electrical equipment for measurement, control, and laboratory use:

|                                   |
|-----------------------------------|
| EU: EMC Directive 2014/30/EU      |
| US: FCC 47 CFR Part 15            |
| Canada: ICES-003 Issue 7          |
| South Korea: Radio Waves Act (KC) |

Conformity is assessed in accordance to the following standards:

|                           |
|---------------------------|
| EN 61326-1:2013           |
| IEC 61326-1:2020          |
| ICES-001: Group 1         |
| FCC Part 15/B             |
| KS C 9610-6-4             |
| KS C 9811 Class A         |
| EN 61326-1:2013           |
| IEC 61326-1:2020, Table 2 |
| KS C 9610-6-2:2019        |

### Environmental Management

SCT is committed to designing and manufacturing products in an environmentally responsible manner. We believe that eliminating hazardous substances from our products is beneficial to the environment and our customers.

At the end of the product's life cycle, customers are responsible for ensuring that all materials are disposed of according to local laws and regulations.

|                                                                                     |                           |
|-------------------------------------------------------------------------------------|---------------------------|
|  | ROHS Directive 2011/65/EU |
|-------------------------------------------------------------------------------------|---------------------------|



## Support

Find product documentation at [signalcraft.com/support](http://signalcraft.com/support). For additional assistance, please contact us at [support@signalcraft.com](mailto:support@signalcraft.com).

## Warranty

Full one-year parts and labour when used under normal installation and operation conditions. Repair services are available for products no longer covered under warranty.

## Ordering Information

Send inquiries to [support@signalcraft.com](mailto:support@signalcraft.com).