

Beyond Connection, Empowering **Your Success**



Beyond Connection, Empowering Your Success



History

2023

- Introduction of MES* to build a Smart Factory
- Selected as a Korean Technology Development Company

2022

- Development of 110GHz 1.0mm RF Connection Solution Completed

2021

- Awarded the 「10 Million Dollar Export Tower」

2020

- Establishment of Plating Facilities

2018

- ISO9001:2015 certification(Certification from LRQA(UK))
- Introduction of TQMS(Total Quality Management System)

2017

- Production Facilities Expansion and Relocation

2016

- Establishment of a Company-affiliated R&D Center

2010

- Establishment of AplusRF

AplusRF, established in 2010, is a company dedicated to providing customized high-performance RF connector & cable assembly solutions, bridging the analog and digital worlds through connectivity technology. For the past 15 years, we have expanded our presence by solving over 3,000 customer challenges with innovative technical expertise and robust quality management. From product design to production and testing, we offer the most prudent solutions in record time through a smart, internally integrated process.

*MES: Manufacturing Execution System

Core Business Values of AplusRF

Innovative Technology-Driven Problem Solver

Our ultimate value is helping customers with sincerity and passion, growing together, and becoming a leading technology company. We aim to achieve our vision through the continuous cycle of creating value.

Hidden Sherpa Supporting Customer Success

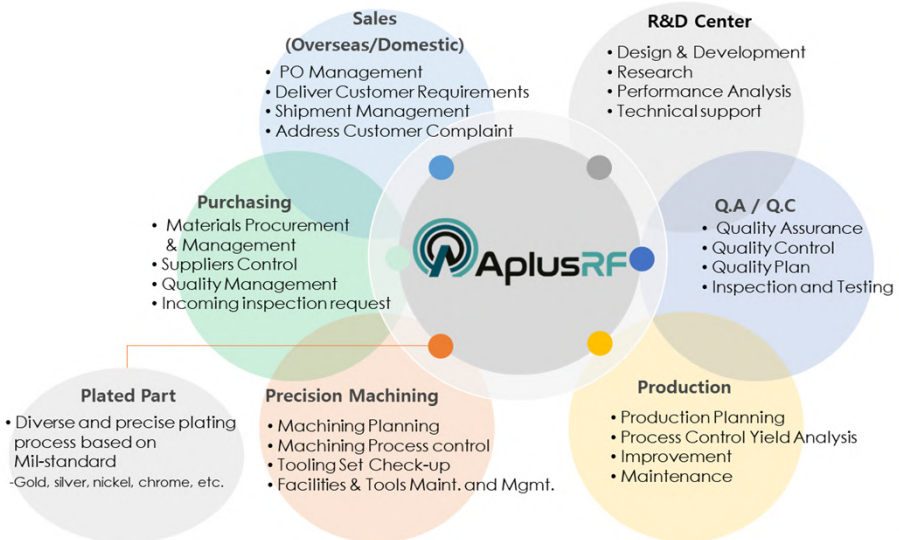
Our distinctiveness stems from our proactive attitude of transforming customers' unique specification demands into innovative market-leading products.

Sustainable Growth & Community Dedication Business

We have established partnerships with three high schools and three universities, consistently supporting educational programs. Among our entire staff, 15% have been recruited through these programs and have built successful careers.

Furthermore, AplusRF has been a pioneer in corporate social responsibility and ethical management from early on. We established a social welfare foundation to support the underprivileged, alongside our efforts in environmental conservation.

Our TEAM



Connecting for the Hyper Connected World

With over 25 years of rich experience in the RF interconnection field, AplusRF provides customized solutions that meet the evolving trends in rapidly changing information and communication technology. Located in the background of the industry, we may not be immediately visible, but we contribute to the success of top-tier connector suppliers and end customers. The innovative RF connectivity technology we develop and supply is aiding the growth of industries worldwide, shaping a prosperous future.

PRODUCTS GROUP



PRODUCT APPLICATIONS

Connector

We produce high-performance connectors in various structures and shapes, including micro RF connectors, bullet type RF connectors, End-launched RF connectors, and multi-port RF connectors, with specifications ranging up to 110GHz and VSWR1.15~1.35. Custom design orders from customers are also available.



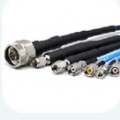
Adaptor

We produce high-performance adaptors for testing equipment, including 1mm and 1.85mm adaptors, with strong durability, meeting VSWR specifications of 1.15 to 1.35 in the frequency range of 40GHz to 110GHz. We also offer custom designs based on customer orders.



Cable Assembly

Our primary focus is on manufacturing cable products for frequencies exceeding 18GHz. We can also accommodate custom designs based on customer requests. Our high-performance accuracy is achieved by directly producing connectors tailored to various cable types.



Test & Measurement Components

We produce PIM Loads using various types of connectors and Termination components in the high-frequency range of 18GHz~27GHz, including miniature-type Termination components.



Precision & Machining Part

We offer machining services for a wide range of materials, including brass, beryllium copper, phosphor bronze, and more. We specialize in producing miniature-sized parts assembled into 1mm products, offering precision machining with a tolerance as low as 5/1000mm to meet our customers' highest expectations.



5G,6G Network AI & Big Data Center Smart Mobilities



Medical Instruments such as MRI



Mil-Aerospace RADAR, 4CI



NMD VNA & Semi-conductor ChipTest



AplusRF Connecting the Hyper Network

AplusRF offers a wide range of high-performance RF connectivity solutions. Through the development of customized products that accommodate various and unique conditions, ranging from MIL-SPEC. BNC and TNC connectors to ultra-compact connectors for 110GHz, we respond to customer demands at an unmatched speed, leaving no rivals behind.



CONNECTOR



CABLEBUILDER

- RF Coaxial Connector Selection Guide

Connector Series	Mating Mechanism			Min. Mating Cycle	Main Applicable Cable	Electrical Options											Power(Watt)CW Max at Sea Level VSWR=1,T=20°C	
						Impedance (Ohm)		Frequency(GHz)										
	Screw-On	Bayonet	Slide-On (Push-On)			50	75	1	2	4	6	12	18	27	40	65		110
												X	K _u	K _a	V	W	@1GHz	
																	@fMax	
SMPS			•	100	.034,FL047	•										100GHz	40	-
SMPM			•	100	.034,FL047,FL086	•										65GHz	60	-
SMP			•	100	FL047,FL086	•										40GHz	100	1.5
1.0mm	•			100	.034,FL047	•										110GHz	50	-
1.35mm	•			100	.034,FL047	•										90GHz	70	-
1.85mm	•			500	FL047,HF090	•										67GHz	110	-
2.4mm	•			500	FL047,FL086	•										60GHz	120	1.7
2.92mm	•			500	FL047,FL086	•										40GHz	150	2.3
3.5mm	•			500	FL047,FL086,FL141	•										34GHz	300	50
SMA	•			500	FL047,FL086,FL141	•										28GHz	450	70
TNC	•			500	FL086,FL141	•										11GHz/28GHz	1,000	300
N	•			500	.141,.250(SF&FL)	•										11GHz/28GHz	1,200	350
4.1/9.5	•			100	.086,.141(SF&FL)	•										6GHz	650	-
4.3/10	•			100	.086,.141(SF&FL)	•										6GHz	700	-
DIN7/16	•			500	.141,.250(SF&FL)	•										6GHz	2,000	700

Adaptor up to 110GHz

1.00mm to 1.00mm In-series

Specification

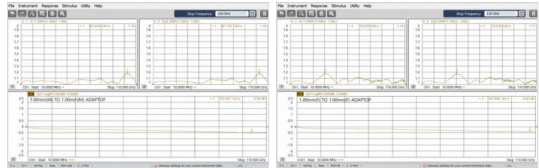
Frequency:110GHz
VSWR1.25:1Max.

Material

ASTM-A582 TYPE 303, Stainless steel
ASTM-B196TD04, C17300, Beryllium copper
ASTM-B-16 C36000,Brass
ASTM-D5205, ULTEM1000

Finish

AMS2700, TYPE2, Passivation
Gold per ASTM-B488 TYPE2, Code C,
Class 1.27(1.27~2.54 μm), over Nickel per
AMS-QQ-N-290, Class1(1.27~2.54 μm)



EndLaunch Connector

VSWR

SMA :1.30 Max./DC to 26.5GHz
2.92mm :1.40 Max./DC to 40.0GHz
2.4mm :1.40 Max./DC to 50.0GHz
1.85mm :1.50 Max./DC to 67.0GHz



Connector Type	Frequency	VSWR two connector +1.0' length PCB	Insertion loss two connector +1.0' length PCB
SMA	26.5GHz	1.30 Max.	-2.50 dB Min.
2.92mm	40 GHz	1.40 Max.	-3.30 dB Min.
2.4mm	50 GHz	1.40 Max.	-4.20 dB Min.
1.85mm	67 GHz	1.50 Max.	-5.0 dB Min.

RF Connector

RF Board Connector

Cable Assembly

Termination

Precision Part

Cable up to 90~110GHz

1.00mm Straight-AP140 with Armor
1.35mm Straight-AP140 with Armor

Specification

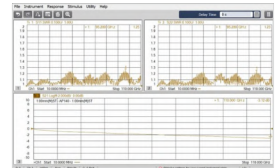
Frequency:110GHz(1.00mm), 90GHz(1.35mm)
VSWR1.50:1 Max.at110GHz(1.00mm)
VSWR1.50:1Max.at 90GHz(1.35mm)

Material

ASTM-A582 TYPE 303, Stainless steel
ASTM-B196TD04, C17300, Beryllium copper
ASTM-B-16 C36000, Brass
ASTM-D5205, ULTEM 1000
Polyester

Finish

AMS2700, TYPE2, Passivation
Gold per ASTM-B488TYPE2, Code C,Class1.27
(1.27~2.54 μ m), over Nickel per AMS-QQ-N-290,
Class1(1.27~2.54 μ m)



RF Connector

RF Board Connector

Cable Assembly

Termination

Precision Part

Steel Braid Cable Assembly

SMA(M)ST-SMA(M)ST for 26.5GHz
2.92mm(M)ST-2.92mm(M)ST for 40GHz

Specification

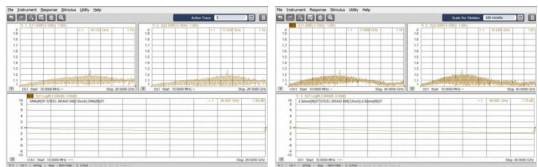
Frequency: 26.5GHz(SMA), 40GHz(2.92mm)
VSWR1.35:1Max.(SMA,2.92mm)

Material

ASTM-A582 TYPE 303, Stainless steel
ASTM-B196TD04, C17300,Beryllium copper
ASTM-B-16 C36000, Brass
ASTM-D5205, ULTEM1000

Finish

AMS2700, TYPE2, Passivation
Gold per ASTM-B488 TYPE2, Code C,
Class 1.27(1.27~2.54 μ m), over Nickel per
AMS-QQ-N-290, Class1(1.27~2.54 μ m)



RF Connector

RF Board Connector

Cable Assembly

Termination

Precision Part

RF/mmWave Coaxial Terminations

High Frequency | 2.92mm/2.4mm/Mini-SMP Termination

Specification

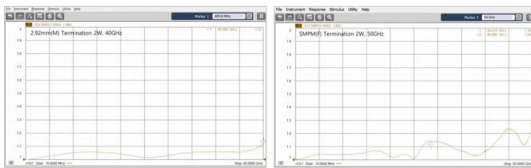
Frequency: 40GHz(2.92mm)
50GHz(2.4mm,Mini-SMP)
VSWR 1.20:1 Max.(2.92mm,2.4mm)
VSWR 1.35:1 Max.(Mini-SMP)

Material

ASTM-A582 TYPE 303, Stainless steel
ASTM-B196TD04, C17300, Beryllium copper
ASTM-B-16 C36000, Brass
ASTM-D5205, ULTEM 1000
ASTM-D4894, PTFE

Finish

AMS2700, TYPE2, Passivation
Gold per ASTM-B488TYPE2, Code C, Class 1.27 (1.27~2.54 μ m), over Nickel per AMS-QQ-N-290, Class1(1.27~2.54 μ m)



RF Connector

RF Board Connector

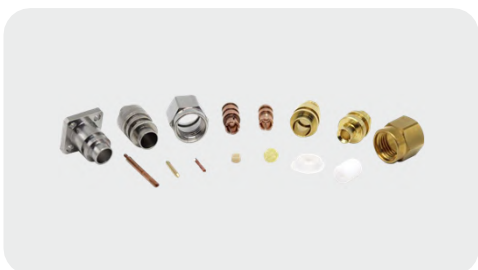
Cable Assembly

Termination

Precision Part

Precision Part

We can process various parts using a wide range of materials, including Brass, Beryllium copper, Phosphor bronze, Aluminum, SUS303, SUS316, SUS430, SKD11, Bakelite, Polycarbonate, Peek, Ultem1000, PTFE, PCTFE, and more. **We specialize in machining miniature parts assembled into 1mm products and can provide high-quality precision machining with a tolerance of 5/1000mm up on customer request.**



Metals

ULTEM-1000
TORLON-4203
BAKELITE
PCTFE
PTFE
P C
PEEK
P E

Non-Metals

STAINLESSSTEEL(DFARS)
:303/304/316/430
BERYLLIUMCOPPER
PHOSPHORBRONZE
ALUMINUM
TITANIUM
KOVAR
SKD11
BRASS

Research & Development

R & D Capabilities



Innovative DNA Centered on R&D

From its inception, AplusRF has been designed as a technology-driven company with a DNA that values creativity and explores innovative ideas.

Advanced Design Tools

We minimize customer wait times through proactive prediction of various requirements, reducing trial and error, and utilizing advanced 3D printers for prototype production.

Big Data & Deep Learning

With a team of engineers with over 25 years of experience and vast accumulated data, we optimize designs and minimize customer wait times.

Various View point Power

Experts from various fields, including electronics, mechanics, chemistry, collaborate using cutting-edge research and development tools to provide customized solutions for our customers.

Mechanical Design Tool

- 2D AutoCAD
- 3D Modeling SolidWorks



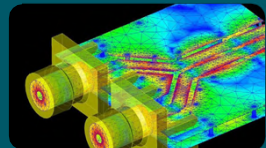
Electrical Characteristic Measurement

- D.C ~ 110GHz
Vector Network Analyzers: **2sets**
- D.C ~ 50GHz
Vector Network Analyzers: **2sets**
- PIMD (Passive Intermodulation Distortion Testers): **3sets**



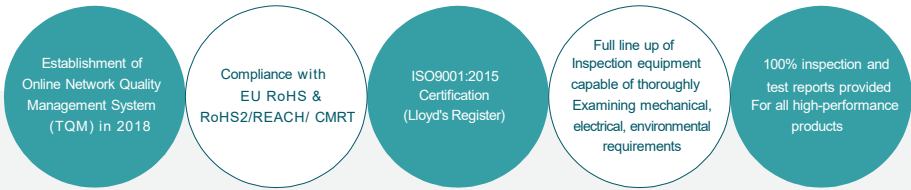
CAE Tool

- Electromagnetic Field Simulation : **CST**
- Prototype Fabricate Tool : **3D Printer**



Quality Management

Quality is our vital element

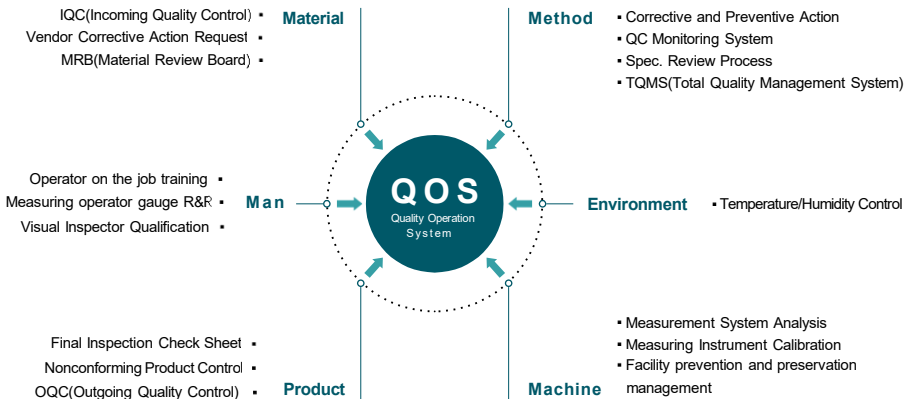


- We promise to deliver world-class design and production quality through continuous process improvement.
- Our Statistical Process Control(SPC) system analyzes extensive process records generated on the production line to derive appropriate innovation plans and ensure stable process control capabilities.
- All our employees are fully aware of the company quality policy and are committed to making their best efforts for quality improvement.
- All quality management and test inspections adhere to ISO9001 certification as a baseline, along with strict internal guide lines such as MIL-I45205.
- We maintain a total system according to the ISO9001 quality manual to promptly respond to all customer requirements.
- Most of our products specified in MIL-PRF-39012,55339, MIL-C-83517, MIL-D-39030, MIL-A-3933, and MIL-PRF-31031 are Tested according to [MIL-STS-202D, MIL-STD-810, 883, and MIL-STD-2000].
- Measurement criteria are based on MIL-HDBK-454, recognized as a key element in quality and reliability.
- Other products specified in IEC, DIN, and DESC are assured of quality and reliability in accordance with the test conditions required by each specification.

AplusRF QOS

(Quality Operation System)

AplusRF's QOS is scientific and systematic. It assigns identity to every element of the manufacturing process and classifies its impact according to function. This ensures that essential tasks and standards are complied with and records are maintained in the manufacturing process.



Manufacturing

Vertically Integrated Manufacturing Process

We have internalized all processes from [precision machining to plating, connector assembly, and cable assembly](#), allowing us to flexibly and immediately respond to customer delivery and quality requirements.

✔ High-Precision Machining

The design performance of ultra-small connectors for microwave frequencies is achieved through the fine precision machining of components. When a deep understanding of electromagnetics combines with mechanical precision machining, it results in high-quality RF coaxial connectivity solutions for mmWave and Sub-THz bands. AplusRF's critical components achieve IT02-level machining tolerances. Additionally, we possess surface finish and fine burr removal techniques to minimize connector contact resistance and mating friction coefficients.



✔ Multi-Axis CNC Lathes and CAM Operation

High-precision machining is performed swiftly and accurately through multi-axis CNC(Computer Numerical Control) machines by selecting optimal tool paths and cutting speeds using SolidWorks CAM software. Specialized tools, state-of-the-art measuring equipment, and rigorous inspections are among AplusRF's core capabilities.



✔ Heat Treatment

AplusRF possesses high-performance vacuum heat treatment facilities for the transformation of the magnetic properties of metal materials and the aging characteristics of special alloys. Individual metal materials undergo heat treatment before and after machining to control contact insertion force, withdrawal force, and mechanical durability, maximizing performance.



✔ In-House Plating

We maintain our own plating line to optimize plating treatments suitable for the product's intended use and associated costs. We offer various plating solutions, including Gold, Silver, Non-ferrous alloys, Electroless nickel, Anodizing, Chromate, and Passivation. AplusRF assists customers in their plating selection, considering solderability, conductivity, and reliability improvements for connector and cable connections.



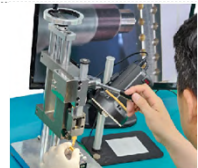
✔ Connector Line

Automation for Mass Products

AplusRF's connector assembly automation system is the optimal choice for cost savings and ensuring precise and stable assembly process quality.

Specialized Jig & Fixture

In addition to the automation of mass-produced products, micro-assembly processes require skilled workers' meticulous craftsmanship and dedicated equipment, much like the assembly process of high-end mechanical watches. AplusRF's assembly process is prepared to deliver the highest quality for both high-volume demands and small custom products.



✔ Cable Assembly Line

AplusRF enhances the quality and production efficiency of cable assemblies through cable cutting, stripping, precision coaxial cable automatic cutting and stripping machines, CNC semi-rigid cable bending machines, and inductionheating soldering machines. AplusRF's skilled workers and state-of-the-art equipment produce electrically and mechanically stable cable assemblies through fine length adjustments, precise terminal processing, and excellent soldering work.



✔ Smart Factory with MES

We have implemented a smart factory through MES, allowing real-time monitoring of comprehensive status and providing rapid and accurate decision-making for maximizing production efficiency. With intelligent equipment and process management, we efficiently handle small-batch orders with various product types, ensuring competitiveness and fast processing.



CustomerService

Triple One Services



We are dramatically reducing delivery times through efficient operation of ERP and MES systems that optimize the entire process.

- Within 1Day: Perfect response to customer inquiries
- Within 1Week: Providing designs olutions
- Within 1Month: Completion of delivery

We promise the fastest timeline in the industry.

Just Click & Build-Up Solution



You can conveniently and quickly search for your desired products on our website.

The AplusRF website allows you to find the optimal solution in real-time through the combination of thousands of RF connectors we possess and various cables, and you can request quotes and additional information.

Experience an intuitive and convenient user experience where you can reach the desired results with just a few clicks.

Customer Relations and Non-Competitive Policy

The revolution in information and communication technology is driving the diversity of RF interconnect solutions. The differentiation and evolution of RF systems increasingly demand technical uniqueness in RF connectivity solutions. These solutions are developed in close collaboration between customer-side application engineers and AplusRF engineers.

Our trust in our customers begins with not competing with them, and all information obtained through the collaborative process is strictly protected according to Our information security systems and policies.



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