

AGC Completes Development of 5G-compatible 'Glass Antenna that Adds Cellular Base Station Capabilities to Windows'

Tokyo, June 3, 2020—AGC (Headquarters: Tokyo; President & CEO: Takuya Shimamura), together with NTT DOCOMO, Inc. ("DOCOMO"), have completed development WAVEATTOCH™, a glass antenna capable of transmitting and receiving radio waves and also compatible with DOCOMO's 5G technology*¹. This marks the world's first-ever*² development of a 5G-compatible glass antenna that adds cellular base station capabilities to windows.

Alongside the expansion of DOCOMO's 5G network, these new antennas will be deployed nationwide in 2020, mainly in urban areas. AGC has already started ramping up production at mass-production plants to meet growing future demand.



WAVEATTOCH™ affixed to a window (*cables not shown) (Image photo)

Responding to the need to install more antennas designed to establish a communication network while preventing the unsightly appearance of neighborhoods littered with antennas, in November 2018, AGC began working with DOCOMO to develop a glass antenna able to be attached to existing windows (on the interior side) to establish a wireless service area on the exterior side. As a result, service areas started being installed for DOCOMO 4G LTE mobile phones from October 2019*³.

With the aim of expanding 5G service areas, work has now completed on the development of glass antennas for DOCOMO that are compatible with the high frequency bands used in 5G. Meanwhile, transparent material has been adopted for surrounding components to achieve a design that avoids compromising not only outside views but the interior space as well.

In addition to conventional high-gain type antennas*⁴ which are highly directional there are also plans to complete development within this year on a wide-beam type antenna capable of transmitting radio waves at a wider angle. This will provide more flexibility in designing communication areas.

Under its **AGC plus** management policy, the AGC Group is dedicated pursuing technological innovations that allow it to continue providing products that add new value and exceed customers' expectations.

MEDIA INQUIRIES

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*Handling of personal information is governed by our privacy policy.

Notes:

- *1 Frequency bands are 3600–3700 MHz and 4500–4600 MHz.
- *2 Based on AGC research.
- *3 Release: https://www.agc.com/en/news/detail/1199805_2814.html
- *4 Gain is a one of the characteristics of antennas. Directional means the relationship between a radio wave's emitted direction and emitted wave intensity. High-gain type antennas emit radio waves in a straight line, making it possible to establish a network wherein radio waves can reach around 100–200 m ahead of their position.

REFERENCE**5G Glass Antenna Specifications****Base specifications**

Dimensions	843 mm × 185 mm
Weight	Approx. 2 kg

* Size and weight of antenna glass only. Excludes cables, existing glass fittings, and accessories.

Specifications contained in this news release are current at the time of release and subject to change without notice.

Single Unit Glass Antenna Specifications

	High-gain type	
	3.6–3.7 GHz band	4.5–4.6 GHz band
Frequency	3.6–3.7 GHz band	4.5–4.6 GHz band
Gain	9.5 dBi	9.0 dBi
Tilt angle	Approx. 25 deg.	Approx. 25 deg.
FWHM (vertical-plane)	Approx. 30 deg.	Approx. 26 deg.
FWHM (horizontal-plane)	Approx. 30 deg.	Approx. 26 deg.
Power handling capacity	Maximum 5.0W	Maximum 5.0W
VSWR	Maximum 2.0	Maximum 2.0

Transparency Specifications for Maintaining Landscape Aesthetics

Transparent material has been adopted for surrounding components to achieve a design that avoids compromising not only outside views but the interior space as well.

(Blue dotted box shows transparent section)

Previous product



New product (transparent specification)

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