



## SUPPLEMENTARY EUROPEAN SEARCH REPORT

Application number:  
EP 21 95 37 27

Classification of the application (IPC):  
H01Q 1/24, H01Q 21/28, H01Q 1/52

Technical fields searched (IPC):  
H01Q

DOCUMENTS CONSIDERED TO BE RELEVANT		
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim
X	JP 2014127977 A (MURATA MANUFACTURING CO) 07 July 2014 (2014-07-07) * paragraphs [0001] - [0054]; figures 1-12 *	1-10
X	US 2015255863 A1 (YOSHIDA TAKAHIDE [JP]) 10 September 2015 (2015-09-10) * paragraphs [0001] - [0047]; claims 1-5; figures 1-9 *	1-10
X	WO 2021040062 A1 (LG ELECTRONICS INC [KR]; UNIV YONSEI IACF [KR]) 04 March 2021 (2021-03-04) * paragraphs [0001] - [0187]; figures 1-25 *	1-10
X	CN 212517490 U (UNIV XIDIAN; GUANGDONG OPPO MOBILE TELECOMMUNICATIONS CORP LTD) 09 February 2021 (2021-02-09) * paragraphs [0001] - [0268]; figures 1-19 *	1-3, 7-10

The supplementary search report has been based on the last set of claims valid and available at the start of the search.

Place of search The Hague	Date of completion of the search 19 July 2024	Examiner El-Shaarawy, Heba
------------------------------	--	-------------------------------

### CATEGORY OF CITED DOCUMENTS

X: particularly relevant if taken alone	P: intermediate document
Y: particularly relevant if combined with another document of the same category	T: theory or principle underlying the invention
A: technological background	E: earlier patent document, but published on, or after the filing date
O: non-written disclosure	D: document cited in the application
& : member of the same patent family, corresponding document	L: document cited for other reasons

Disclaimer: this document has been automatically generated using data structured in accordance with WIPO standard ST.36 from the database of search reports of the European Patent Office. For technical reasons, its content and layout may differ from that of the original publication. Only the original published information is legally binding.



## ANNEX TO SUPPLEMENTARY EUROPEAN SEARCH REPORT

Application number:  
EP 21 95 37 27

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on 19-07-2024  
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
JP 2014127977 A	07-07-2014	NONE	
US 2015255863 A1	10-09-2015	JP 6197793 B2 JP WO2014041903 A1 US 2015255863 A1 WO 2014041903 A1	20-09-2017 18-08-2016 10-09-2015 20-03-2014
WO 2021040062 A1	04-03-2021	EP 4020708 A1 KR 20220050908 A US 2022278440 A1 WO 2021040062 A1	29-06-2022 25-04-2022 01-09-2022 04-03-2021
CN 212517490 U	09-02-2021	NONE	