

UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
WACO DIVISION

TERRESTRIAL COMMS LLC,

Plaintiff

v.

NEC CORPORATION,

Defendant

Case No. 6:20-cv-00096

JURY TRIAL DEMANDED

COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff Terrestrial Comms LLC (“Plaintiff” or “Terrestrial”) hereby asserts the following claims for patent infringement against Defendant NEC Corporation (“Defendant” or “NEC”), and alleges, on information and belief, as follows:

THE PARTIES

1. Terrestrial is a limited liability company organized and existing under the laws of the Texas with its principal place of business at 17330 Preston Road, Suite 200D, Dallas, Texas 75252.
2. On information and belief, Defendant NEC Corp. is a Japanese corporation with its headquarters in 7-1, Shiba 5-chome, Minato-ku, Tokyo 108-8001, Japan.

JURISDICTION AND VENUE

3. This action arises under the patent laws of the United States, 35 U.S.C. § 1, *et seq.* This Court has subject matter jurisdiction under 28 U.S.C. §§ 1331 and 1338(a).
4. Defendant has committed acts of infringement in this judicial district.

5. On information and belief, the Court has personal jurisdiction over Defendant because Defendant has committed, and continues to commit, acts of infringement in the state of Texas, has conducted business in the state of Texas, and/or has engaged in continuous and systematic activities in the state of Texas.

6. On information and belief, Defendant's that are alleged herein to infringe were and continue to be used, imported, offered for sale, and/or sold in the Western District of Texas.

7. Venue is proper in the Western District of Texas pursuant to 28 U.S.C. § 1400(b).

ACUSED PRODUCTS

8. Upon information and belief, Defendant makes, uses, imports, sells, and/or offers for sale the NEC SL1100 telephone systems, among other telephone systems, (collectively the "Accused Telephone Products").

9. Upon information and belief, Defendant NEC encourages and supports the use of the Accused Telephone Products through its online support, advertising, and licensing relationships with resellers.

10. Upon information and belief, Defendant makes, uses, imports, sells, and/or offers for sale the NEC MultiPresenter Stick, among other systems, (collectively the "Accused MultiPresenter Products").

11. Upon information and belief, Defendant NEC encourages and supports the use of the Accused MultiPresenter Products through its online support, advertising, and licensing relationships with resellers.

THE PATENTS-IN SUIT

12. On October 11, 2011, United States Patent No. 8,037,134 (the “134 patent”), entitled “Controlled Multicast,” was duly and lawfully issued by the U.S. Patent and Trademark Office.

13. Terrestrial is the assignee and owner of the right, title and interest in and to the ’134 patent, including the right to assert all causes of action arising under said patents and the right to any remedies for infringement of them.

14. On August 29, 2006, United States Patent No. 7,098,850 (the “850 patent”), entitled “Grounded Antenna for a Wireless Communication Device and Method,” was duly and lawfully issued by the U.S. Patent and Trademark Office.

15. Terrestrial is the assignee and owner of the right, title and interest in and to the ’850 patent, including the right to assert all causes of action arising under said patents and the right to any remedies for infringement of them.

16. On March 20, 2007, United States Patent No. 7,193,563 (the “563 patent”), entitled “Grounded Antenna for a Wireless Communication Device and Method,” was duly and lawfully issued by the U.S. Patent and Trademark Office.

17. Terrestrial is the assignee and owner of the right, title and interest in and to the ’563 patent, including the right to assert all causes of action arising under said patents and the right to any remedies for infringement of them.

18. On August 12, 2008, United States Patent No. 7,411,552 (the “552 patent”), entitled “Grounded Antenna for a Wireless Communication Device and Method,” was duly and lawfully issued by the U.S. Patent and Trademark Office.

19. Terrestrial is the assignee and owner of the right, title and interest in and to the '552 patent, including the right to assert all causes of action arising under said patents and the right to any remedies for infringement of them.

COUNT I – INFRINGEMENT OF U.S. PATENT NO. 8,037,134

20. Terrestrial repeats and realleges the allegations of paragraphs 1 through 19 as if fully set forth herein.

21. Claim 1 of the '134 Patent recites:

1. A method comprising:

receiving a multicast data packet at a routing unit of a communication system, wherein the multicast data packet includes a multicast address associated with a multicast group;

identifying a receiver address associated with the multicast address;

identifying one or more parameters associated with the receiver address, wherein at least one of the one or more parameters identifies a type of content that is not to be sent to the receiver address;

filtering the multicast data packet based on the one or more parameters to generate a filtered data packet, wherein the filtering includes removing the type of content from the multicast data packet to generate the filtered data packet; and

transmitting the filtered data packet to the one of the receiver address.

22. Without license or authorization and in violation of 35 U.S.C. § 271(a), Defendant has infringed and continues to infringe the '134 Patent by making, using, importing, offering for sale, and/or selling the Accused Telephone Products.

23. As exemplified below, the Accused Telephone Products are a telephone system which provides phone services for small business users. It supports cordless phones and provides a Call Screening facility.

1. A method comprising receiving a multicast data packet at a routing unit of a communication system, wherein the multicast data packet includes a multicast address associated with a multicast group;

The Accused Telephone Products are operable to receive a multicast data packet at a routing unit of the communication system.

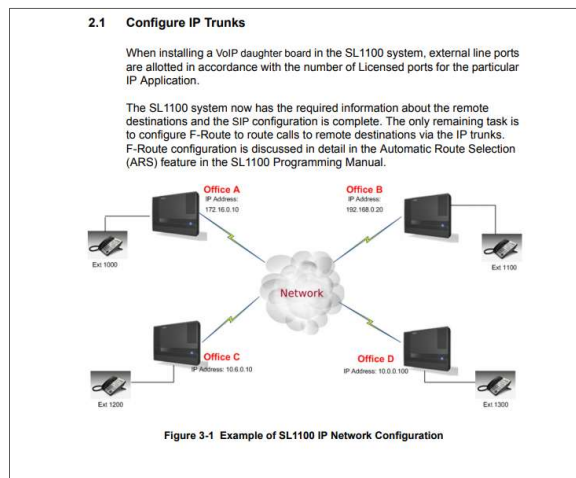


<https://www.thetelecomspot.com/products/phone-systems/nec/nec-sl-series/nec-sl-bundle-kits/nec-sl1100-digital-quick-start-kit-with-24-b.html>

NEC's SL1100 Communications System delivers an integrated unified communications (UC) solution that enhances productivity and collaboration while offering key functions that deliver excellent business benefits. The SL1100 offers IP technology, mobility options, voicemail, email, call accounting, automatic call distribution, unified communications, and a selection of IP and digital handsets.

<http://www.necsl1100.com/InteractiveGuide/index.html>

The Accused Telephone Products functions as a routing unit of the telecommunication system.



SECTION 1 INTRODUCTION¹

IP Networking uses VoIP technology to connect two or more telephone systems together. This allows calls to be made between sites without using the public telephone network. This saves considerable money, and makes communication between sites much easier.

<http://advancedhostedservices.com/wp-content/uploads/2016/12/NEC-SL1100-Networking-Manual.pdf>

To send receive and send multicast data packets the Accused Telephone Products use IP networking:

SECTION 1 INTRODUCTION¹

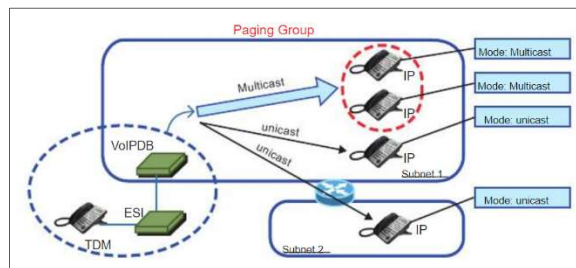
IP Networking uses VoIP technology to connect two or more telephone systems together. This allows calls to be made between sites without using the public telephone network. This saves considerable money, and makes communication between sites much easier.

<http://advancedhostedservices.com/wp-content/uploads/2016/12/NEC-SL1100-Networking-Manual.pdf>

When the phones are set to receive Multicast packets the VoIPDB will send one RTP stream. Multicast is a protocol that allows one device to communicate to multiple devices without the need to stream to the individual end point. E.g. If there are five IP Terminals in the page group that are set to Multicast Mode, the VoIPDB will send one RTP stream utilizing only one DSP resource.

<https://www.manualslib.com/manual/858890/Nec-Sl1100.html?page=773>

When an IP multiline phone sends an internal page to an internal paging group the data is sent as a multicast data packet. The packet is generated from the device and then sent to the Accused Telephone Products which are configured to transmit the data to the intended multicast group.



<https://www.manualslib.com/manual/858890/Nec-Sl1100.html?page=774>

- A Single Line Terminal can initiate an Internal Zone page, but cannot receive an Internal Zone Page.
- If an internal paging group has only IP Multiline Stations, multicast is used for the page. IP Multiline Terminals must have a gateway programmed to accomplish a multicast transmission. When an actual gateway device does not exist on the network, a dummy gateway address on the same subnet must be defined.
- When a paging group contains all IP Terminals, the page is sent via a multicast message from the initiating IP Terminal. If a paging group has IP and TDM phones, when and IP Terminal initiates the page, a message is sent to the CPU and the CPU sends the multicast message for the IP Terminals.

<https://www.manualslib.com/manual/858890/Nec-Sl1100.html?page=576>

Program 31 : Paging Setup
31-02 : Internal Paging Group Assignment

Level:
IN

Description

Use Program 31-02 : Internal Paging Group Assignment to assign extensions to Internal Paging Groups (i.e., Page Zones). The setting in this program also determines if the Internal Page Group can receive Internal All Call Paging. The system can have up to 32 paging groups. An extension can be in only one Internal Paging Group.

Input Data

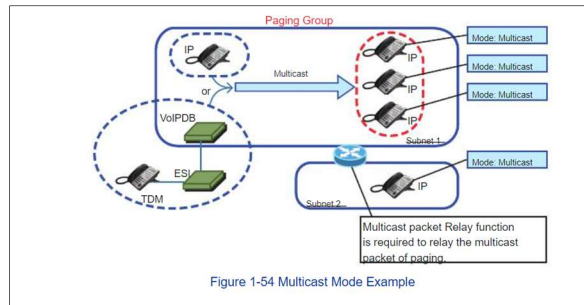
Extension Number	Maximum eight digits			
Item No.	Item	Input Data	Description	Default
01	Internal Paging Group Number	0 = 32 10 = No setting	Assign extensions to Internal Paging Groups (i.e., Page Zones). The system allows up to 32 Internal Paging Groups. An extension can be in only one Internal Paging Group.	Port 1 = 16 = 1 (Group 1) Port 17 = 0
02	Internal All Call Paging Receiving	0 = Off 1 = On	Allow or prevent All Call Internal Paging for each extension. If allowed, extension can place and receive All Call Internal Paging announcements. If prevented, extensions can only make (not receive) All Call Internal Paging announcements. If combined, Paging zones should be restricted as well; change the internal page zone group in Program 31-07-01 to 0.	0

<https://www.manualslib.com/manual/968877/Nec-Sl1100.html?page=343>

The multicast group is associated with a paging zone number, which indicate the address of the Multicast Group.

identifying a receiver address associated with the multicast address;

The Accused Telephone Products can identify a specific receiver address associated with the multicast address.



<https://www.manualslib.com/manual/858890/Nec-Sl1100.html?page=774>

Each multiline IP phone has a fixed Port address. When grouped by the multicast address (internal page grouping number) the IP Phone receives an extension number that registers it under the multicast address. To assign the IP Phone to an extension, the extension matches the individual IP Phones Port Address.

Program 31 : Paging Setup
31-02 : Internal Paging Group Assignment

Level:
IN

Description

Use Program 31-02 : Internal Paging Group Assignment to assign extensions to Internal Paging Groups (i.e., Page Zones). The setting in this program also determines if the Internal Page Group can receive Internal All Call Paging. The system can have up to 32 paging groups. An extension can be in only one Internal Paging Group.

Input Data

Extension Number	Maximum eight digits
------------------	----------------------

Item No.	Item	Input Data	Description	Default
01	Internal Paging Group Number	0 - 32 (0 = No setting)	Assign extensions to Internal Paging Groups (i.e., Page Zones). The system allows up to 32 Internal Paging Groups. An extension can be in only one Internal Paging Group.	Port 1 - 16 = 1 (Group 1) Port 17 = 2
02	Internal All Call Paging Receiving	0 = Off 1 = On	Allow or prevent All Call Internal Paging for each extension. If allowed, extension can place and receive All Call Internal Paging announcements. If prevented, extensions can only make (not receive) All Call Internal Paging announcements. If combined, Paging zones should be restricted as well, changing the internal page zone group in Program 31-07-01 to 0.	0

<https://www.manualslib.com/manual/968877/Nec-Sl1100.html?page=343>

Extension Number	Maximum eight digits
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Item No.	Item	Input Data	Description	Default	Related Program
01	Terminal Type	Read Only: 0 = NOT 1 = H.323 2 = SIP 3 = MEGACO 4 = SIP-MLT			
02	IP Phone Fixed Port Assignment	MAC address 00-00-00-00-00-00 - FF-FF-FF-FF-FF-FF	MAC Address of registered SIP MLT phone is stored and/or can input the MAC address of an SIP MLT phone so when it comes online it is provided with the extension in which the MAC address matches.	00-00-00-00-00-00	15-05-01
04	Nickname	Up to 48 characters	Nickname section on Invite message. Example: Extension 100 has a Nickname set to PAUL. Extension 101 has command 15-05-17 set to Nickname. The inbound call to extension 101, from 100, shows PAUL. Nickname must be unique in the system.	No Setting	15-05-17
07	Using IP Address Read Only	0 0 0 0 - 255 255 255 255			15-05-01
09	Call procedure port	Read Only: 0 - 65535			15-05-01
15	CODEC Type	1 = Type 1 2 = Type 2 3 = Type 3 4 = Type 4 5 = Type 5	Assign the CODEC Type of the SIP MLT.	1	84-24 84-11 15-05-01
16	Authentication Password	Up to 24 characters	Assign the authentication password for SIP single line telephones.	No Setting	15-05-01

<http://www.necsl1100distributors.com/mm5/downloads/sl1100/manuals-ug/SL1100-Programming-Manual.pdf>

identifying one or more parameters associated with the receiver address, wherein at least one of the one or more parameters identifies a type of content that is not to be sent to the receiver address;

The Accused Telephone Products, when programmed, identifies two parameters associated with the receiver address:

1. whether at least one device is ‘Off Hook’ or ‘On Hook’ (e.g. phone is idle or in use) within a group, and
2. Whether or not the Class of Service option is turned on or off (Option to receive an alert message on the screen of the telephone)

Program 20 : System Option Setup
 20-13 : Class of Service Options (Supplementary Service)

Level:
IN

Description

Use Program 20-13 : Class of Service Options (Supplementary Service) to define the supplementary feature availability for each extension Class of Service (COS).

Input Data

Item No.	Item	Input Data	Description	Default	Related Program
01	Long Conversation Alarm	0 = Off 1 = On	Turns off or on the Warning Tone for Long Conversation (not for single line telephones).	COS 01 - 15 * 0	
02	Long Conversation Cutoff (Incoming)	0 = Off 1 = On	Turns off or on an extension ability to use Long Conversation Cutoff for incoming calls.	COS 01 - 15 * 0	
03	Long Conversation Cutoff (Outgoing)	0 = Off 1 = On	Turns off or on an extension ability to use Long Conversation Cutoff for outgoing calls.	COS 01 - 15 * 0	
04	Call Forward/DND Override (Bypass Call)	0 = Off 1 = On	Turns off or on an extension ability to use Call Forwarding/DND Override.	COS 01 - 15 * 1	
05	Intercom Off-Hook Signaling	0 = Off (Off hook signaling disabled) 1 = On (Off hook signaling enabled)	Turns off or on an extension ability to receive off-hook signals.	COS 01 - 15 * 1	
06	Automatic Off-Hook Signaling (Automatic Override)	0 = Off (manually) 1 = On (automatic)	Allows a busy extension ability to manually (0) or automatically (1) receive off-hook signals.	COS 01 - 15 * 1	
07	Message Waiting 0	0 = Off 1 = On	Turns off or on an extension ability to have Message Waiting.	COS 01 - 15 * 1	

<https://www.manualslib.com/manual/968877/Nec-SI1100.html?page=207#manual>

How to Disable Message Waiting

1. Go to Program 20-13: Class of Service Options (Supplementary Service)
2. Click the "Grid View" button
3. For 20-13-07: Message Waiting, uncheck boxes 01 and 15
01 and 15 are enabled by default. If you are using more Class of Services on your system, uncheck the boxes for those numbers as well.

System Data While in grid view Form View Apply Cancel Default

20-13: Class of Service Options (Supplementary Service)

	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
01 - Long Conversation Alarm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
02 - Incoming Long Conversation Cutoff	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
03 - Outgoing Long Conversation Cutoff	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
04 - Call Forward (Do Not Disturb Override)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
05 - Intercom Offhook Signaling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
06 - Automatic Offhook Signaling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
07 - Message Waiting	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
08 - Conference	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
09 - Pretest Release	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10 - Edge in Mode	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4. Go to Program 11-16: 1-digit Service Code Setup
5. Remove the value of 11-16-07: Message Waiting and leave the field blank

System Data Grid View Apply Cancel Default

11-16: 1-digit Service Code Setup

01 - Step Call

02 - Beep-in

03 - Voice Signal Call Switching

04 - Intercom Offhook Signaling

05 - Camp on

06 - Do Not Disturb/Call Forward Override

07 - Message Waiting

08 - Voice Over

09 - Voice Mail Access

10 - Department Group All Ring Mode

11 - Station Park Hold

Use Program 11-16: 1-digit Service Code Setup to customize the 1-digit Service Codes used when a busy or ring back signal is heard. You can customize additional Service Codes in Programs 11-10-11-15.

6. Apply and upload changes

<https://midwesttechnology.uservoice.com/knowledgebase/articles/1908301-message-waiting-on-the-nec-sl2100-and-sl1100>

Each of those parameters identify a type of content not to be sent to the device.

The content being:

1. a live Paging message (voice content/if the device is idle);
2. a Paging message stored in the message box (voice content/if the device is not idle); and
3. an alert message to be displayed on a telephone (Message Content/if the device is not idle and the Class of service option is option is turned on).

Description

Internal Paging lets extension users broadcast announcements to other Multiline Terminal users. When a user makes a Zone Paging announcement, the announcement broadcasts to all idle extensions in the zone dialed. With All Call Paging, the announcement broadcasts to all idle extensions programmed to receive All Call Paging. An extension can be a member of only one Internal Paging Zone. Like External Paging, Internal Paging allows a user to locate another employee or make an announcement without calling each extension individually.

Combined Paging

Use Combined Paging when you want to simultaneously Page into an Internal and corresponding external zone. For example, you can Page your company warehouse and outside loading dock at the same time. Combined Paging is available for Paging zones 1-8 and All Call. Optionally, you can change the Combined Paging assignments. For example, you can associate External Paging Zone 1 with Internal Paging Zone 4. You can program a Function key as a Combined Paging key. When an All Call External Page Function key is programmed, it includes both the external zones and the assigned internal zone(s). If the internal page zone is busy or there are no extensions in a page group, the announcement is made on the external zones only.

Conditions

- Internal Paging does not require an unused analog trunk port and external paging system.
- You can assign up to 50 TDM extensions to an Internal or All Call Paging Group.
- You can assign up to 16 IP extensions to an Internal or All Call Paging Group.
- A system must have at least one extension port idle to make an Internal Page. If no extension port is idle, the extension performing the Page hears a busy signal.
- There are 32 available Internal Paging Groups (Zones).
- A Class of Service option is available in system programming to prevent display telephones from showing incoming internal paging information. This allows the system to save processor time and speed up system operation.
- An extension user can broadcast an announcement over an External Paging Zone.
- Function keys simplify Internal Paging operation.
- You must assign an extension to be in a two-digit zone in PRG 31-02-01 before you can assign a function key using the 751 service code as a two-digit Internal Group Paging Zone key.

<https://www.manualslib.com/manual/858890/Nec-Sl1100.html?page=576>

“VM” Soft Key (Option)

The Number of new messages in your mailbox is displayed on the “VM” Soft Key; you can access your mailbox by pressing this key.

Soft Key Indication	Feature	Next Operation after pressing Soft Key
Lstn	Listen to Left Messages	Press “Next” to play next message, press “Rplay” to repeat played message, press “Del” to delete played message. Press “More” for other Mailbox features.
Greet	Mailbox Greeting	Press one of “Gr1” / “Gr2” / “Gr3” to choose the desired personal greeting message, and press “Lstn” (Listen) / “Rec” (Record) / “Del” (Delete) to maintain it.
LvMsg	Leave Message	Start message recording and press “Done” to complete it. Dial extension number you want to send this message and press “Send”.
Setup	Mailbox Option Menu	Press “Code” (Security Code) / “Notify” (Message Notification) / “CallH” (Call Handling Option) / “ATime” (Auto Time Stamp) to maintain each mailbox option.
RcNam	Name Menu	Press “Lstn” (Listen) / “Rec” (Record) / “Del” (Delete) to maintain the Mailbox Name.
Page	Page Message Menu	Press “Lstn” (Listen) / “Rec” (Record) / “Del” (Delete) to maintain the Paging Message.
List	Message List	Press “All” / “New” / “Arch” to set the message listen mode (message list) which you want to listen.
Exit	Exit VM Menu	---

<http://www.necsl1100.com/downloads/SL1100%20User%20Documentation/IP%20Multi%20Terminal%20User%20Guide.pdf>

filtering the multicast data packet based on the one or more parameters to generate a filtered data packet, wherein the filtering includes removing the type of content from the multicast data packet to generate the filtered data packet; and

Based on the status of the receiver address (whether the IP phone is busy or idle) the multicast data packet, sent from the first phone to the Multicast group, will either

remove the Live paging message, or cause the Paging alert message to appear on the screen of the device.

<p>Description</p> <p>Internal Paging lets extension users broadcast announcements to other Multiline Terminal users. When a user makes a Zone Paging announcement, <u>the announcement broadcasts to all idle extensions in the zone dialed</u>. With All Call Paging, the announcement broadcasts to all idle extensions programmed to receive All Call Paging. An extension can be a member of only one Internal Paging Zone. Like External Paging, Internal Paging allows a user to locate another employee or make an announcement without calling each extension individually.</p> <p>Combined Paging</p> <p>Use Combined Paging when you want to simultaneously Page into an internal and corresponding external zone. For example, you can Page your company warehouse and outside loading dock at the same time. Combined Paging is available for Paging zones 1-8 and All Call. Optionally, you can change the Combined Paging assignments. For example, you can associate External Paging Zone 1 with Internal Paging Zone 4. You can program a Function key as a Combined Paging key. When an All Call External Page Function key is programmed, it includes both the external zones and the assigned internal zone(s). If the internal page zone is busy or there are no extensions in a page group, the announcement is made on the external zones only.</p> <p>Conditions</p> <ul style="list-style-type: none"> • Internal Paging does not require an unused analog trunk port and external paging system. • You can assign up to 50 TDM extensions to an Internal or All Call Paging Group. • You can assign up to 16 IP extensions to an Internal or All Call Paging Group. • A system must have at least one extension port idle to make an Internal Page. If no extension port is idle, the extension performing the Page hears a busy signal. • There are 32 available Internal Paging Groups (Zones). • A Class of Service option is available in system programming to prevent display telephones from showing incoming internal paging information. This allows the system to save processor time and speed up system operation. • An extension user can broadcast an announcement over an External Paging Zone. • Function keys simplify Internal Paging operation. • You must assign an extension to be in a two-digit zone in PRG 31-02-01 before you can assign a function key using the 751 service code as a two-digit Internal Group Paging Zone key. 	<p>ManualsLib.com</p>
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<https://www.manualslib.com/manual/858890/Nec-Sl1100.html?page=576>

transmitting the filtered data packet to the one of the receiver address.

The filtered data packet (containing content that was removed) to the corresponding receiver address.

<p>Description</p> <p>Internal Paging lets extension users broadcast announcements to other Multiline Terminal users. When a user makes a Zone Paging announcement, <u>the announcement broadcasts to all idle extensions in the zone dialed</u>. With All Call Paging, the announcement broadcasts to all idle extensions programmed to receive All Call Paging. An extension can be a member of only one Internal Paging Zone. Like External Paging, Internal Paging allows a user to locate another employee or make an announcement without calling each extension individually.</p> <p>Combined Paging</p> <p>Use Combined Paging when you want to simultaneously Page into an internal and corresponding external zone. For example, you can Page your company warehouse and outside loading dock at the same time. Combined Paging is available for Paging zones 1-8 and All Call. Optionally, you can change the Combined Paging assignments. For example, you can associate External Paging Zone 1 with Internal Paging Zone 4. You can program a Function key as a Combined Paging key. When an All Call External Page Function key is programmed, it includes both the external zones and the assigned internal zone(s). If the internal page zone is busy or there are no extensions in a page group, the announcement is made on the external zones only.</p> <p>Conditions</p> <ul style="list-style-type: none"> • Internal Paging does not require an unused analog trunk port and external paging system. • You can assign up to 50 TDM extensions to an Internal or All Call Paging Group. • You can assign up to 16 IP extensions to an Internal or All Call Paging Group. • A system must have at least one extension port idle to make an Internal Page. If no extension port is idle, the extension performing the Page hears a busy signal. • There are 32 available Internal Paging Groups (Zones). • A Class of Service option is available in system programming to prevent display telephones from showing incoming internal paging information. This allows the system to save processor time and speed up system operation. • An extension user can broadcast an announcement over an External Paging Zone. • Function keys simplify Internal Paging operation. • You must assign an extension to be in a two-digit zone in PRG 31-02-01 before you can assign a function key using the 751 service code as a two-digit Internal Group Paging Zone key. 	<p>ManualsLib.com</p>
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<https://www.manualslib.com/manual/858890/Nec-Sl1100.html?page=576>

24. Terrestrial is entitled to recover from Defendant the damages sustained by Terrestrial as a result of Defendant's infringement of the '134 Patent in an amount subject to proof at trial, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

COUNT II – INFRINGEMENT OF U.S. PATENT NO. 7,098,850

25. Terrestrial repeats and realleges the allegations of paragraphs 1 through 19 as if fully set forth herein.

26. Claim 1 of the '850 Patent recites:

1. A wireless communication device, comprising:
 - a substrate;
 - a wireless communication chip positioned on said substrate;
 - a ground plane positioned on said substrate;
 - a first antenna operating at a first operating frequency and electrically coupled to said wireless communication chip by a coupling element, said first antenna also electrically coupled to said ground plane; and
 - said coupling element being arranged to act as a second antenna at a second operating frequency.

27. Without license or authorization and in violation of 35 U.S.C. § 271(a), Defendant has infringed and continues to infringe the '850 Patent by making, using, importing, offering for sale, and/or selling the Accused MultiPresenter Products.

28. As exemplified below, the Accused MultiPresenter Products are a wireless communication device that communicates via Bluetooth and Wi-Fi.

A wireless communication device, comprising:

The Accused Products communicates via Bluetooth and Wi-Fi.



<https://www.nec-display-solutions.com/p/eeme/en/products/accessories/details/t/Options/Wireless-Transmission/rp/MultipresenterStick-MP10RX.xhtml>

a substrate;

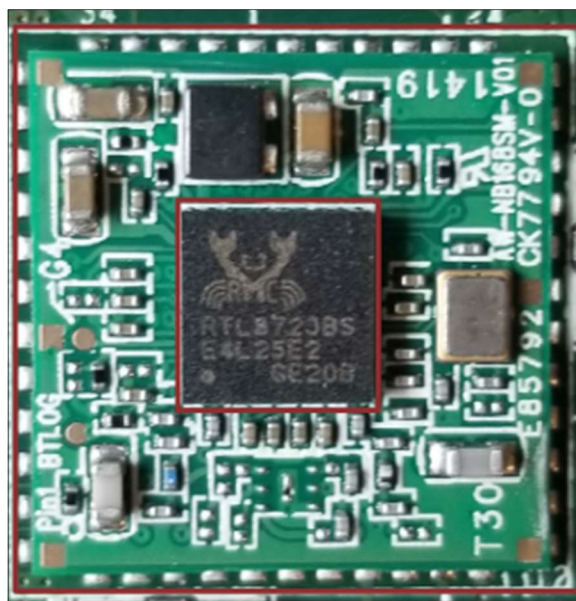
a wireless communication chip positioned on said substrate;

a ground plane positioned on said substrate;

The chipset within the Accused Products comprises a substrate, a wireless communication chip positioned on said substrate, and a ground plane positioned on one side of that substrate:

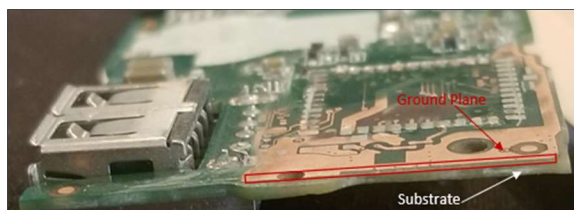
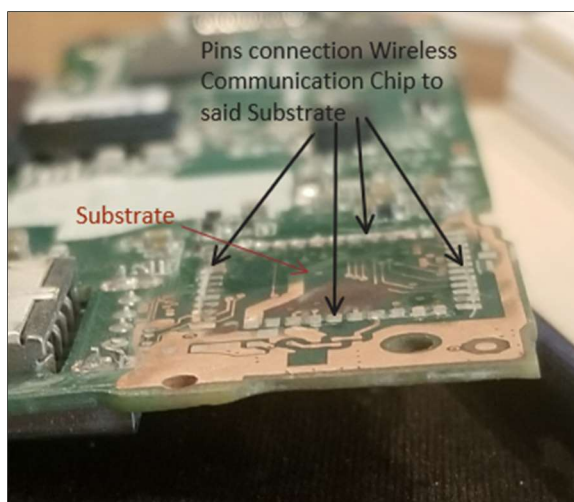
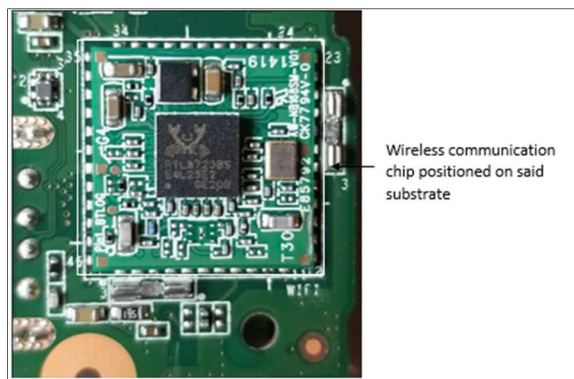


The Accused Productality includes a wireless communication chip (e.g. AW-NB168sm board including Realtek RTL8723BS Combo Module) which is a wireless communication chip capable of communication over Bluetooth and Wi-Fi.



<https://fccid.io/TX2-RTL8723BS/Users-Manual/User-Manual-2267165>

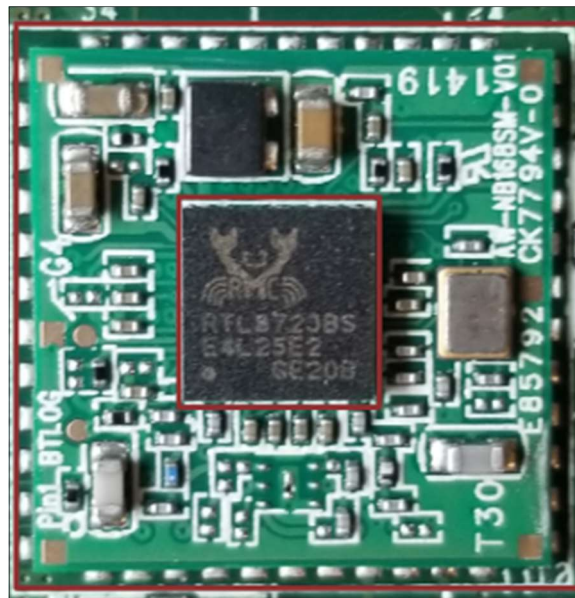
<http://files.pine64.org/doc/datasheet/pine64/RTL8723BS.pdf>



The chipset within the Accused Products comprises a substrate, a wireless communication chip positioned on said substrate, and a ground plane positioned on one side of that substrate:

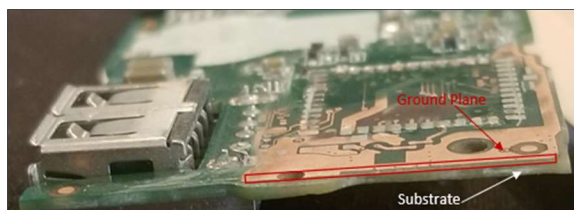
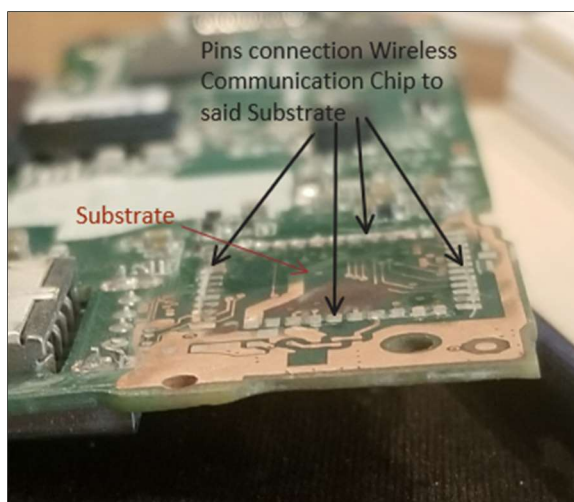
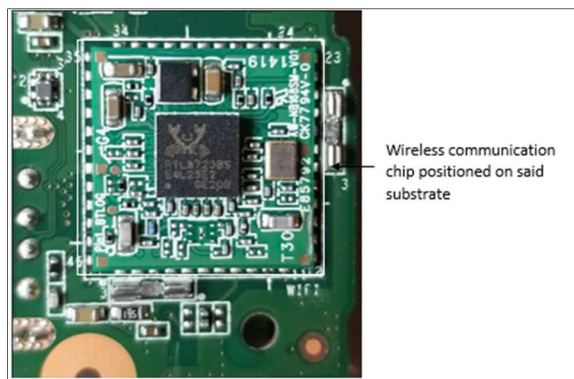


The Accused Productsality includes a wireless communication chip (e.g. AW-NB168sm board including Realtek RTL8723BS Combo Module) which is a wireless communication chip capable of communication over Bluetooth and Wi-Fi.



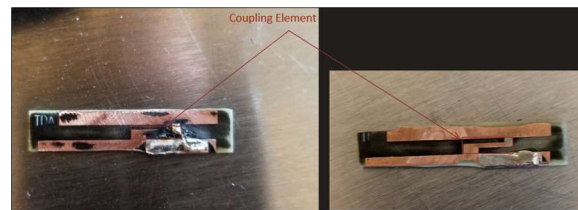
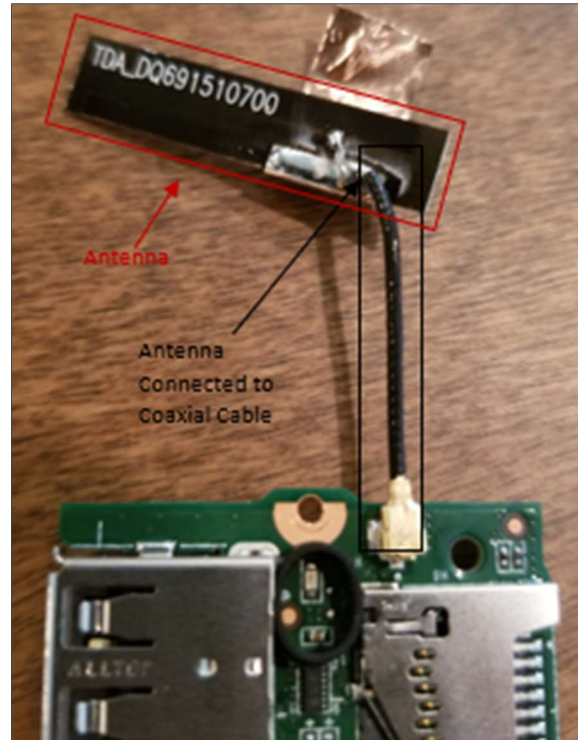
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<http://files.pine64.org/doc/datasheet/pine64/RTL8723BS.pdf>

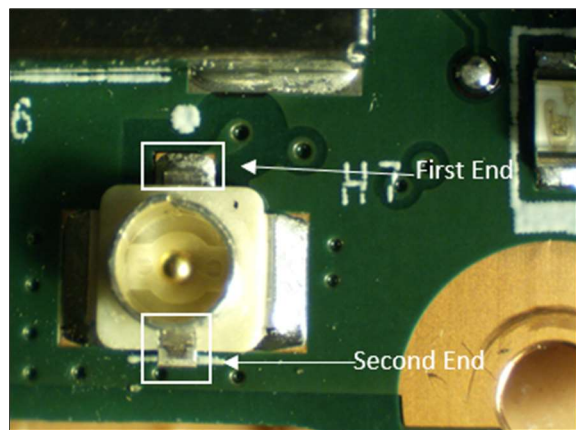


a first antenna operating at a first operating frequency and electrically coupled to said wireless communication chip by a coupling element, said first antenna also electrically coupled to said ground plane; and

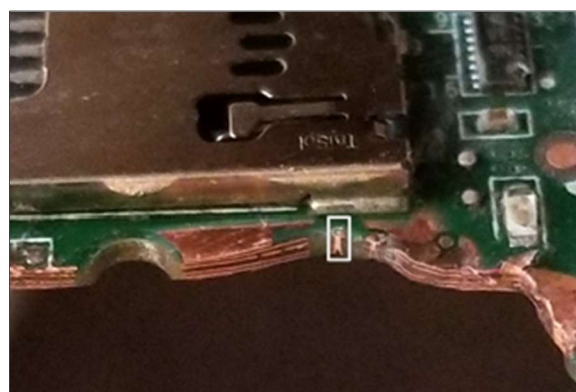
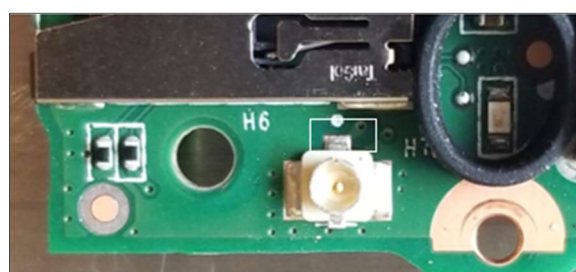
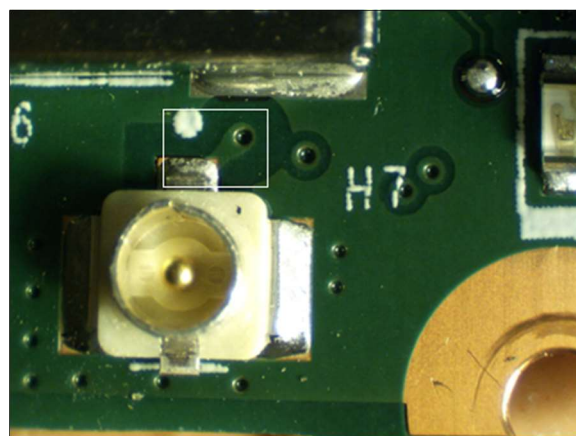
The Accused Products utilizes a coupling element to electrically couple a first antenna, which operates at a first operating frequency to said wireless communication chip and said ground plane.



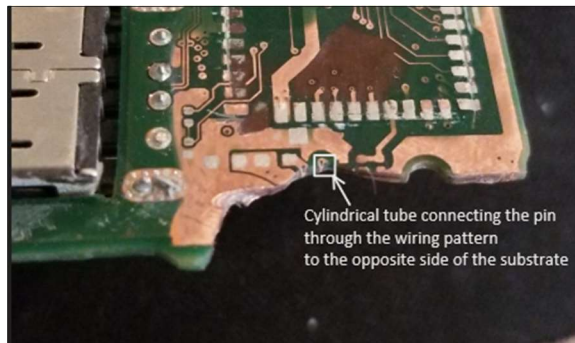
The coaxial cable has two connection points, one leading to the wireless communication chip and the other leading the said ground plane.



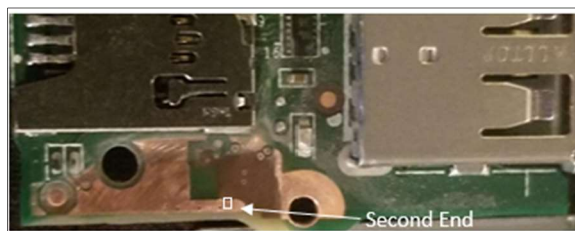
Connection to said wireless communication chip:

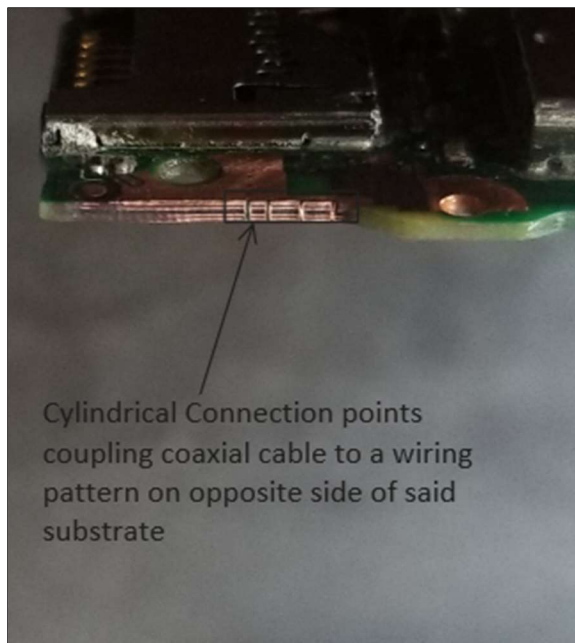


Opposite side of substrate:

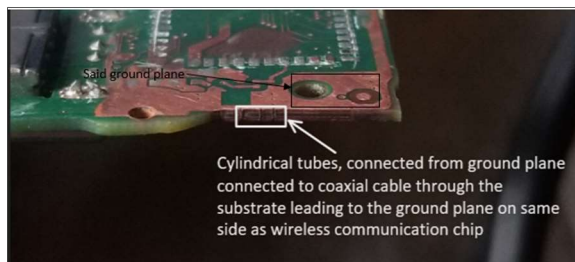


Connection to said ground plane:





Opposite side of substrate:



said coupling element being arranged to act as a second antenna at a second operating frequency.

The wireless communication chip is designed to operate at two frequencies:

Operating Channel	WiFi 2.4GHz:
	11: (Ch. 1-11) – United States 13: (Ch. 1-13) – Europe 13: (Ch. 1-14) – Japan
Frequency Range	BT 2.4GHz:
	Ch. 0 ~78
2.400GHz ~ 2.4835 GHz	

<https://fccid.io/TX2-RTL8723BS/Users-Manual/User-Manual-2267165>

2.PRODUCT FEATURES

Operate at ISM frequency bands (2.4GHz)
GSPi/SDiO for WiFi and UART for Bluetooth
IEEE standards support: IEEE 802.11b, IEEE 802.11g, IEEE 802.11n, IEEE 802.11d, IEEE 802.11e, IEEE 802.11h, IEEE 802.11i
Fully Qualified for Bluetooth 2.1 + EDR specification including both 2Mbps and 3Mbps modulation mode
Fully qualified for Bluetooth 3.0
Fully qualified for Bluetooth 4.0 Dual mode
Full -speed Bluetooth operation with Piconet and Scatternet support.
Enterprise level security which can apply WPA/WPA2 certification for WiFi.
WiFi 1 transmitter and 1 receiver allow data rates supporting up to 150 Mbps downstream and 150 Mbps upstream PHY rates
For WiFi/BT, it uses fixed path for WiFi and BT, which means one antenna assigned for WiFi and the other is assigned for BT.
Support Bluetooth adaptive power management mechanism
Full-featured software utility for easy configuration and management
RoHS compliance
Low Halogen compliance

<http://files.pine64.org/doc/datasheet/pine64/RTL8723BS.pdf>



29. Terrestrial is entitled to recover from Defendant the damages sustained by Terrestrial as a result of Defendant's infringement of the '850 Patent in an amount subject to proof at trial, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

COUNT III – INFRINGEMENT OF U.S. PATENT NO. 7,193,563

30. Terrestrial repeats and realleges the allegations of paragraphs 1 through 19 as if fully set forth herein.

31. Claim 1 of the '563 Patent recites:

1. A wireless communication device, comprising:
a substrate;
a wireless communication chip positioned on said substrate;

a ground plane positioned on said substrate; and
 an antenna electrically coupled to said wireless communication chip and
 electrically shorted at one end to said ground plane.

32. As exemplified below, the Accused MultiPresenter Products are a wireless communication device that communicates via Bluetooth and Wi-Fi.

A wireless communication device, comprising:

The Accused Products communicates via Bluetooth and Wi-Fi.



<https://www.nec-display-solutions.com/p/eeme/en/products/accessories/details/t/Options/Wireless-Transmission/rp/MultipresenterStick-MP10RX.html>

a substrate;

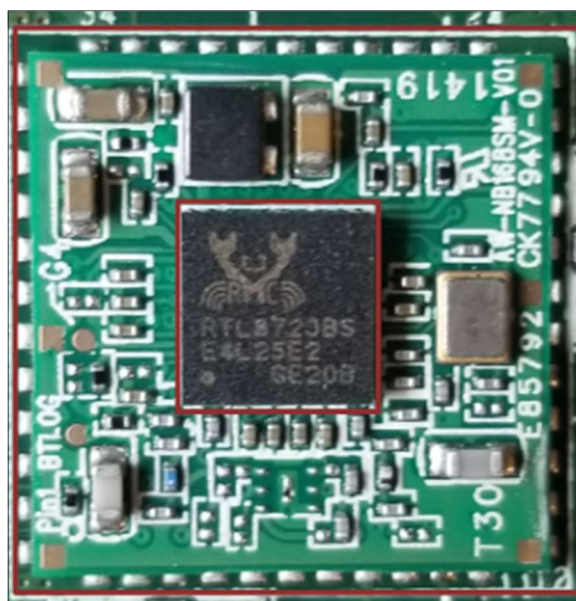
a wireless communication chip positioned on said substrate;

a ground plane positioned on said substrate; and

The Accused Products comprises a substrate, a wireless communication chip positioned on said substrate, and a ground plane positioned on one side of that substrate:

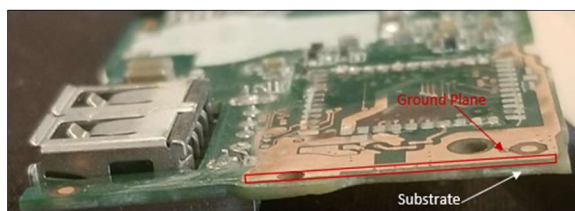
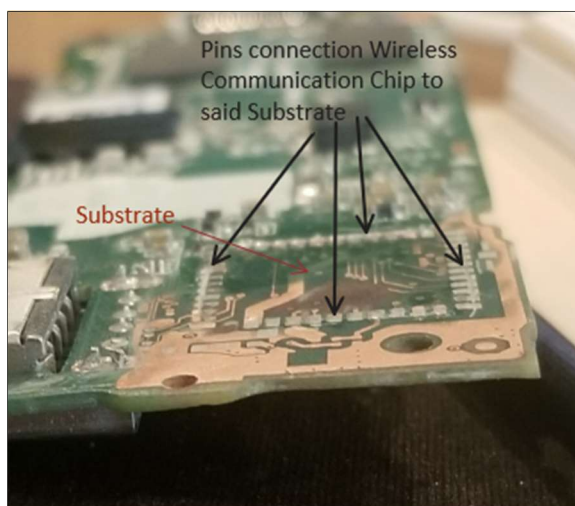
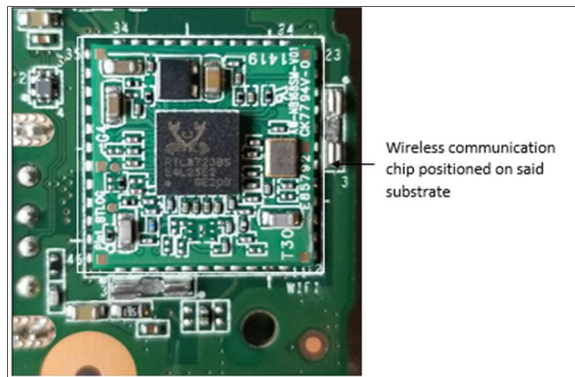


The Accused Productsality includes a wireless communication chip (e.g. AW-NB168sm board including Realtek RTL8723BS Combo Module) which is a wireless communication chip capable of communication over Bluetooth and Wi-Fi.



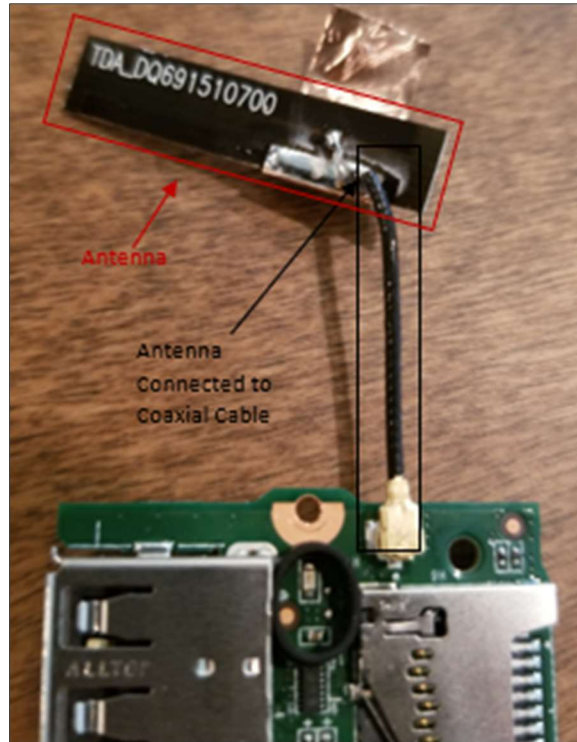
<https://fccid.io/TX2-RTL8723BS/Users-Manual/User-Manual-2267165>

<http://files.pine64.org/doc/datasheet/pine64/RTL8723BS.pdf>

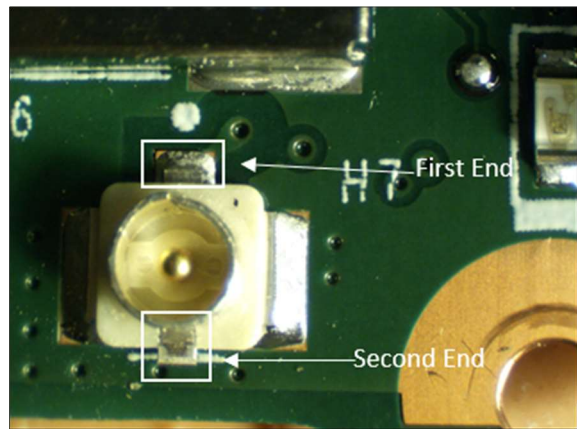


an antenna electrically coupled to said wireless communication chip and electrically shorted at one end to said ground plane.

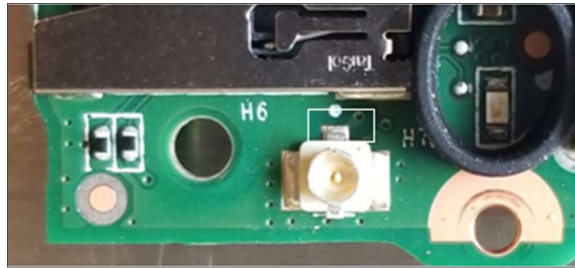
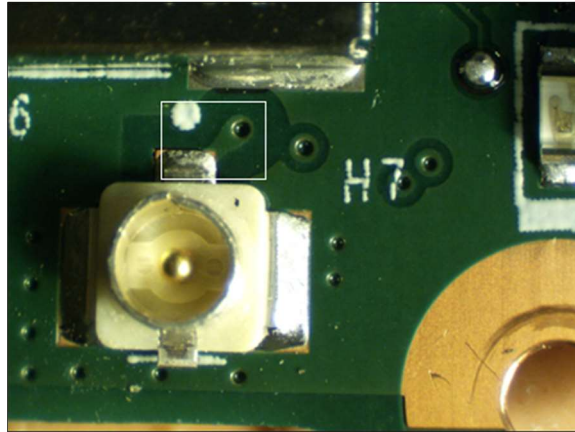
The Accused Products utilizes an antenna that is electrically coupled to the wireless communication chip and electrically shorted at one end to said ground plane:



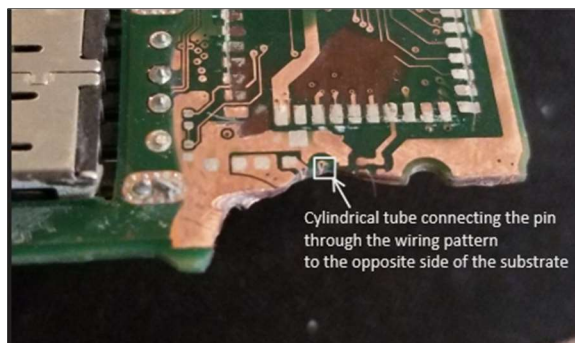
The coaxial cable has two connection points, one leading to the wireless communication chip and the other leading the said ground plane.



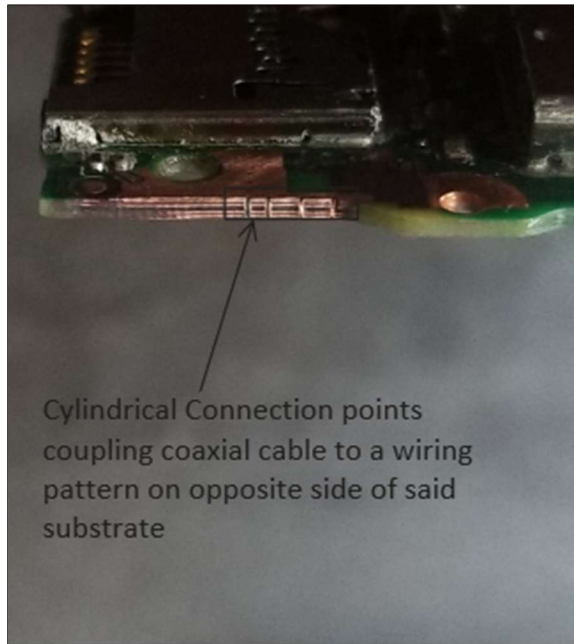
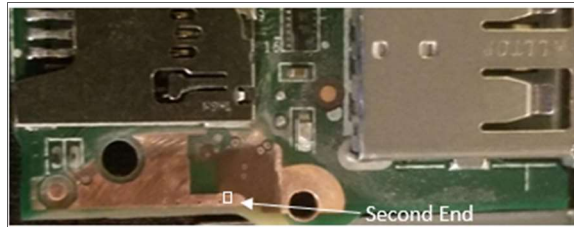
Connection to wireless communication chip:



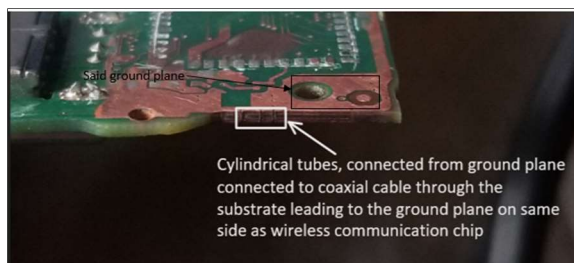
Opposite side of substrate:



Connection to said ground plane:



Opposite side of substrate:



33. Terrestrial is entitled to recover from Defendant the damages sustained by Terrestrial as a result of Defendant's infringement of the '563 Patent in an amount subject to proof at trial, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

COUNT IV – INFRINGEMENT OF U.S. PATENT NO. 7,411,552

34. Terrestrial repeats and realleges the allegations of paragraphs 1 through 19 as if fully set forth herein.

35. Claim 1 of the '552 Patent recites:

1. A wireless communication device, comprising:
 - a substrate;
 - a ground plane positioned on one side of the substrate;
 - a wireless communication chip electrically connected to said ground plane and proximate thereto;
 - an antenna having a first end and a second end, said first end electrically connected to said ground plane; and
 - said second end comprising an open circuit.

36. Without license or authorization and in violation of 35 U.S.C. § 271(a), Defendant has infringed and continues to infringe the '552 Patent by making, using, importing, offering for sale, and/or selling the Accused MultiPresenter Products.

37. As exemplified below, the Accused MultiPresenter Products are a wireless communication device that communicates via Bluetooth and Wi-Fi.

38. 1. A wireless communication device, comprising:

A wireless communication device, comprising:

The Accused Products communicates via Bluetooth and Wi-Fi

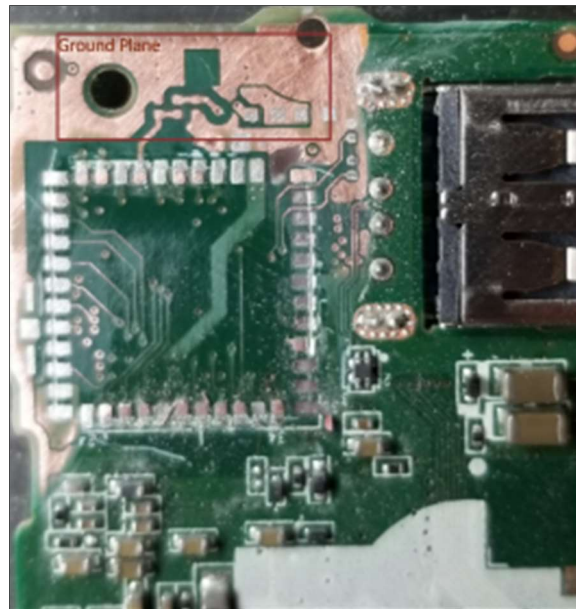
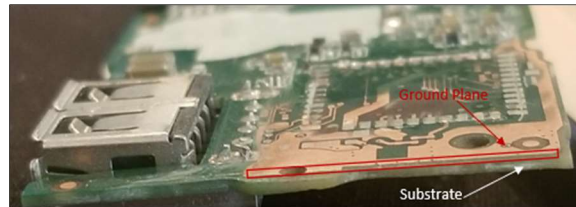


<https://www.nec-display-solutions.com/p/eeme/en/products/accessories/details/t/Options/Wireless-Transmission/rp/MultipresenterStick-MP10RX.xhtml>

a substrate;

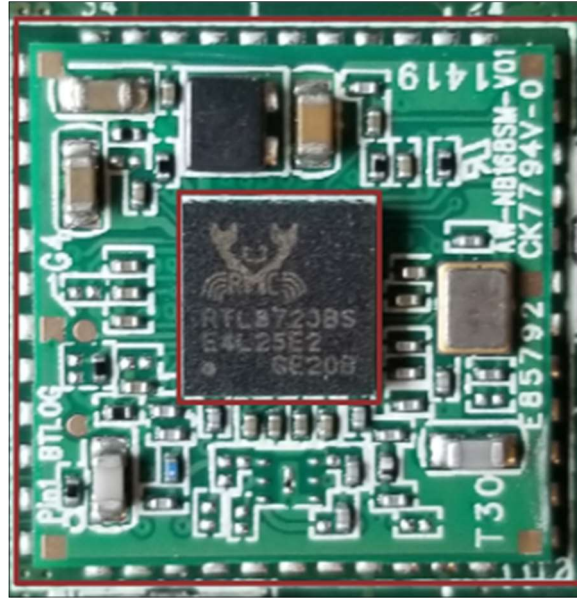
a ground plane positioned on one side of the substrate;

The Accused Productality comprises of a substrate and a ground plane positioned on one side of that substrate:



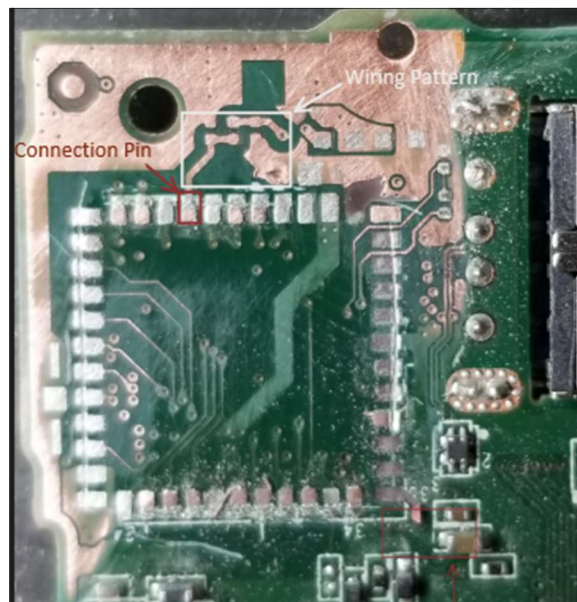
a wireless communication chip electrically connected to said ground plane and proximate thereto;

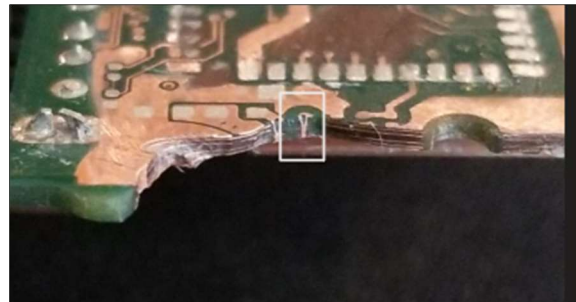
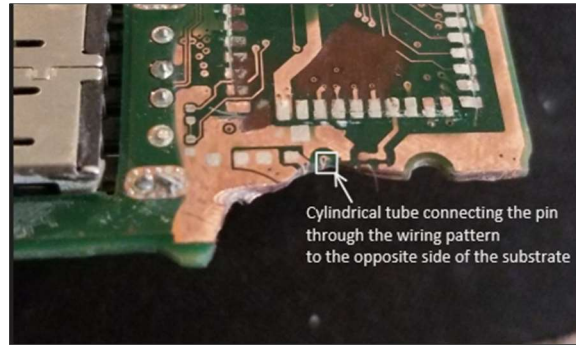
The Accused Productality includes a wireless communication chip (e.g. AW-NB168sm board including Realtek RTL8723BS Combo Module) which is a wireless communication chip capable of communication over Bluetooth and Wi-Fi.



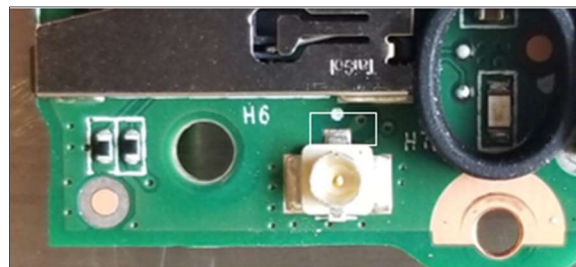
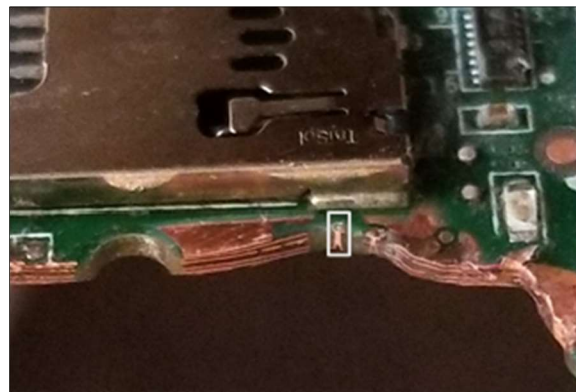
<https://fccid.io/TX2-RTL8723BS/Users-Manual/User-Manual-2267165>

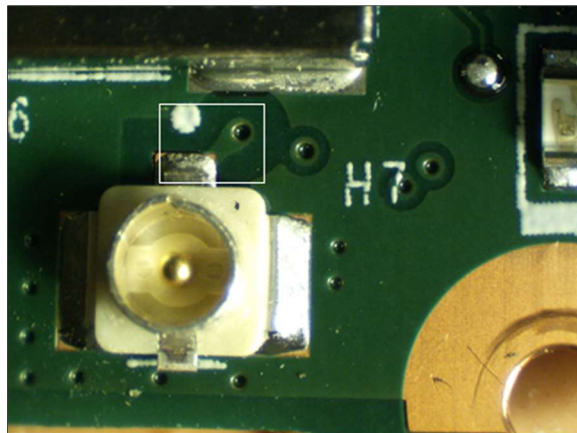
The pins connect through a wiring pattern to a Coaxial Cable connection point, which is disposed on the opposite side of the substrate of which the wireless communication chip is disposed:





On the opposite side of substrate, the cylindrical connector connects to a coaxial cable adapter, which attaches to the antenna.

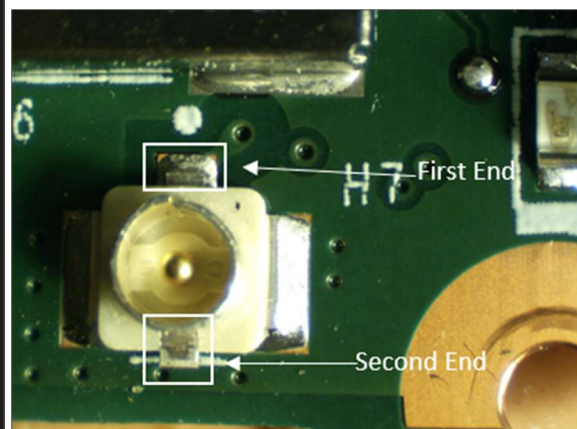
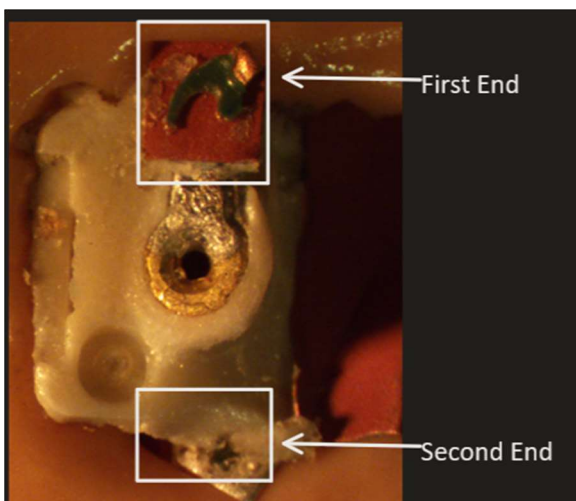




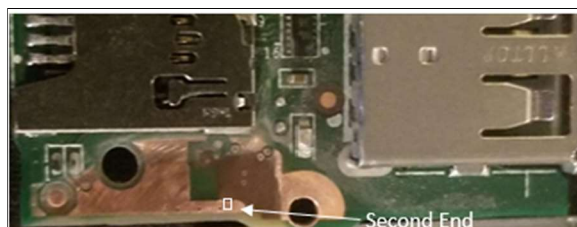
The point then connects through a first end to the coaxial cable and through second end to a ground plane which comprises Cylindrical pin:

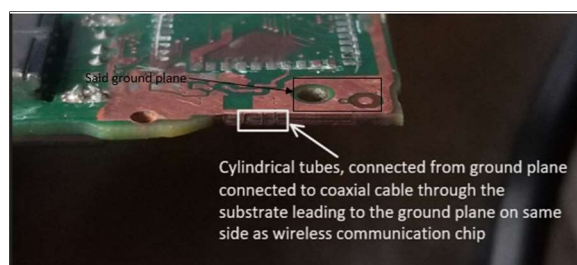
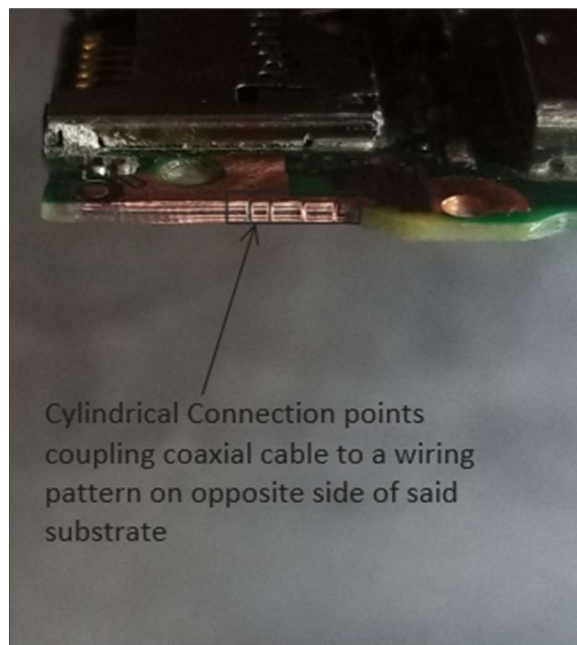
Bottom view:

Top View:



Coaxial cable adapter removed and ground plane polished:

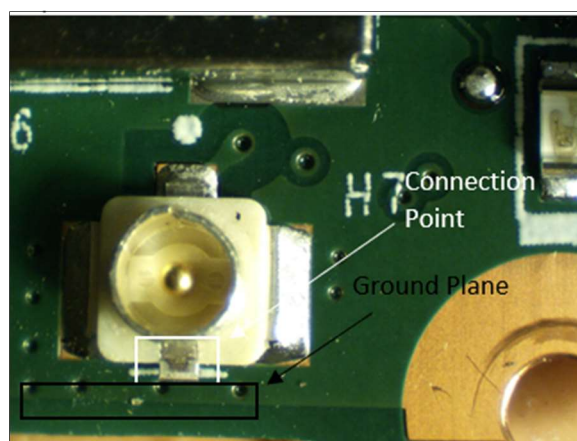
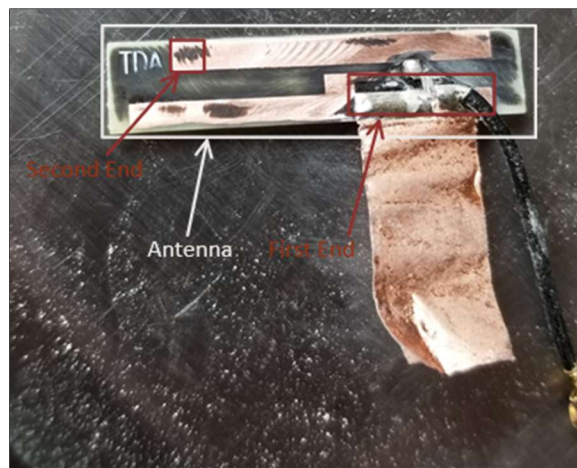




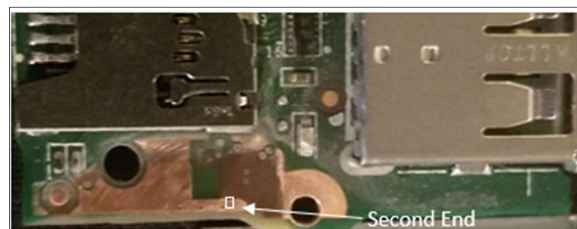
an antenna having a first end and a second end, said first end electrically connected to said ground plane; and

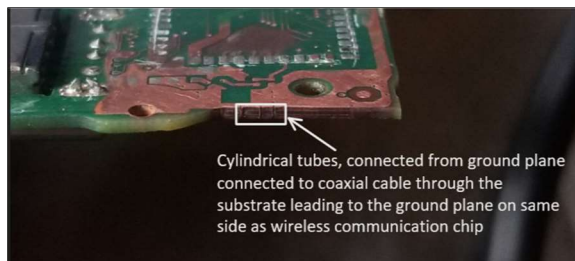
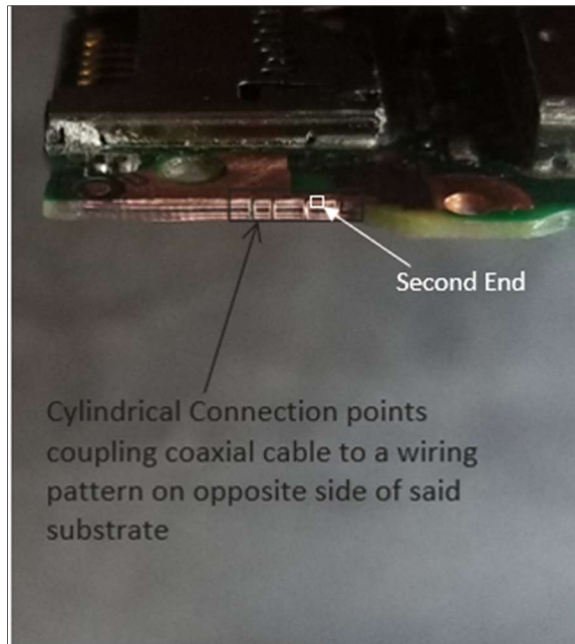
The Accused Instrument comprises an antenna having two ends, one electrically connected to said ground plane and another comprising an open circuit:





Coaxial cable adapter removed and ground plane polished:





said second end comprising an open circuit.

The second end of the antenna does not connect to any wiring patterns, cables or any ground planes, thus the end of the second antenna comprises an open circuit:



39. Terrestrial is entitled to recover from Defendant the damages sustained by Terrestrial as a result of Defendant's infringement of the '552 Patent in an amount

subject to proof at trial, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

PRAYER FOR RELIEF

WHEREFORE, Terrestrial requests that this Court enter judgment against Defendant as follows:

A. An adjudication that Defendant has infringed the '134 Patent, the '850 Patent, the '563 Patent, and the '552 Patent;

B. An award of damages to be paid by Defendant adequate to compensate Terrestrial for Defendant's past infringement of the '134 Patent, the '850 Patent, the '563 Patent, and the '552 Patent, and any continuing or future infringement through the date such judgment is entered, including interest, costs, expenses and an accounting of all infringing acts including, but not limited to, those acts not presented at trial;

C. A declaration that this case is exceptional under 35 U.S.C. § 285, and an award of Terrestrial's reasonable attorneys' fees; and

D. An award to Terrestrial of such further relief at law or in equity as the Court deems just and proper.

JURY DEMAND

Plaintiff demands trial by jury, Under Fed. R. Civ. P. 38.

Dated: February 10, 2020

Respectfully Submitted

/s/ Raymond W. Mort, III

Raymond W. Mort, III

Texas State Bar No. 00791308

raymort@austinlaw.com

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Austin, Texas 78701

Tel/Fax: (512) 865-7950

ATTORNEYS FOR PLAINTIFF